



Arlington  
Public  
Schools

# Annual APS Enrollment Projections Report

FALL 2019 - 2028



JANUARY 2019

*All Arlington Public Schools (APS) budget and operations decisions are based on the best information available at the time. Staff and community members are reminded that funding forecasts from Arlington County and the state may change, based on many external factors. Similarly, student enrollment and projections are based on the best available information, but are also subject to change due to employment, housing and other economic factors. For these reasons, APS and the Arlington School Board may adjust future budget allocations, staffing and other operations decisions to reflect the existing community and operating landscape.*

# Annual APS Enrollment Projections Report

## Fall 2019-20 through Fall 2028-29

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# Table of Contents

Executive Summary .....	1
Overview of Growth .....	2
Collaboration with Arlington County Government.....	3
Collaboration with Stakeholders.....	4
Historical Enrollment at APS .....	5
Current Enrollment .....	6
Projected Enrollment .....	7
Data Inputs & Methods .....	8
Foundational Inputs & Factors .....	8
Methodology Adjustments During Major Transitions .....	14
Fall Ten-Year Enrollment Projection Tables .....	20
Accuracy of Projections .....	31
<b>Appendix</b> .....	32
Housing Unit Forecast and Projected Student Yield 2018-2028 .....	33
Student Generation Rates for 2019-20 School Boundaries by School and Housing Type .....	35
Alternative Projection Scenarios .....	36
Projection Accuracy by School for Fall 2018 .....	37
Historical Projection Precision 2005-2018 .....	38
Five-Year Projection Accuracy .....	39
Glossary of Terms .....	40

# Executive Summary

The Arlington Public Schools (APS) Annual Enrollment Report provides a comprehensive look at the Fall ten-year student enrollment projections. The report provides detailed information on the number of students projected to be enrolled at each school on September 30 each year for the ten-year period beginning in 2019-20 and ending in 2028-29.

For thirteen years in a row, APS student enrollment has increased from the previous year. Since Fall 2008 (19,534 students), APS Pre-Kindergarten (Pre-K) through 12<sup>th</sup> grade enrollment has increased by 7,902 students, which equates to 40% growth over the past decade. Over the next decade, APS is projected to grow by more than 6,700 students in Grades PreK-12.

To estimate future Kindergarten (K)-12 enrollment, APS uses three sets of statistics: the number of resident live births for Arlington County (for kindergarten projections only); the three-year history of enrollment change (i.e., cohort transition rate); and the anticipated student yield from “future” housing units. Pre-Kindergarten enrollment capacity was provided by the Department of Teaching & Learning for the 2019-20 school year and are appended to each 2019-28 projection year to develop the system-wide PreK-12 enrollment totals.

Recent changes in the options and transfers policy, in addition to boundary adjustments compelled by the opening of Alice West Fleet Elementary School and Dorothy Hamm Middle School, have disrupted historical enrollment trends and required APS planning staff to update methods for preparing the 10-year enrollment projections. APS planning staff has collaborated with Arlington County Government to receive future resident births and housing unit construction information to ensure that APS student enrollment projections are aligned with county forecasts. Also, APS has reached out to additional stakeholders using an internal review committee to assess enrollment projection methods.

Projections of student enrollment are produced twice a year. The ten-year projections are published every Fall, based on the number of enrolled students on September 30<sup>th</sup> each year (i.e., the official count day). The Fall projection report is used to develop the Superintendent’s Budget for the next fiscal year. The Fall enrollment projections inform long-term facilities planning decisions. Spring updates to the Fall projections are then produced every February; these use the January 31<sup>st</sup> enrollment data to fine tune the Fall projections. The Spring projections are essential to making staffing decisions for the next fiscal year.

Projections for the immediate future are more reliable than those for years further in the future because nearer-term projections are based on students already enrolled in the APS system. Whereas, starting in projection year 2022-23, the entering kindergarten cohort is derived from the County’s assumptions of births. Enrollment projection totals for Grades K-5, Grades 6-8 and Grades 9-12 are more reliable than projections for specific grade levels in specific years.

The intent of this document is to provide APS staff with data to help make informed decisions. Specific information about each school is provided, as well as an overall look at enrollment by school level and division wide.

## Overview of Growth

Based on current trends, APS is projected to surpass the 30,000-student milestone in Fall 2021. Overall, the projections suggest growth of 6,700+ students from now through the 2028-29 school year. The projected enrollment for the next school year (2019-20) is 28,495 students, which is an estimated annual gain of just over 1,000 more students. Provided below are the Fall ten-year projections for school years 2019-20 through 2028-29. The ten-year projections show continued enrollment growth that gradually wanes from a high growth rate into a medium growth rate starting in 2025.

School Year	Actual & Projected PreK-12 Enrollment	Projected Growth %
2018-19	27,436 (Actual)	--
2019-20	28,495	3.9%
2020-21	29,262	2.7%
2021-22	30,018	2.6%
2022-23	30,769	2.5%
2023-24	31,394	2.0%
2024-25	32,111	2.3%
2025-26	32,628	1.6%
2026-27	33,126	1.5%
2027-28	33,639	1.5%
2028-29	34,201	1.7%



## Collaboration with Arlington County Government

APS and Arlington County Government (“ACG”) have entered a data-sharing agreement to align APS projections with the County’s population forecast. As part of the agreement, ACG has provided APS with the following information:

### Master Housing Unit Database (MHUD)

Arlington County’s Real Estate Assessment, A-Track, and Development Tracking were used to compile the MHUD database. The database provides an inventory of all housing in the County, including housing type, number of units, details on the number of Committed Affordable Units (CAF), and affordability classification for each complex (CAF only, Market Rate, or Mixed). This information helps APS to develop student generation factors by housing unit type and school level. The “Student Generation Factor” is a mathematical representation of the relationship between housing units in Arlington County and the number of students enrolled in Arlington Public Schools on September 30 of each year. In other words, it is a factor applied to new housing to estimate the expected number of enrolled students from the new housing; this is specific to the building’s location, housing type, and affordability characteristics.

### Housing Unit Forecast by Year

Arlington County’s housing unit forecasting is informed by the land use policy guidance of Arlington’s General Land Use Plan (GLUP). The forecast uses two primary sources of development information which include the county-wide development pipeline data on recently completed projects, projects under construction, and approved projects and housing development assumptions derived from parcels with anticipated growth from approved sector plans and small area plans. Most importantly, the timeline of residential construction projects are identified by year, residential type, number of net new units, and affordability levels. This information helps APS predict the number of new students and the year that a given housing development will add more students to neighborhood schools.

### Long-Term Estimation of Births by Year

As recommended in the Arlington Community Facilities Study (“CFS”) completed by Statistical Forecasting and RLS Demographics in October 2016, ACG uses the Cohort Component Model to project births in the long term for APS. In this method, the number of women of childbearing age (15-49) is projected and then multiplied by the corresponding age-specific fertility rate. Age-specific fertility rates are computed by averaging the actual number of births by each age cohort over a specified number of years and dividing by the age-specific populations. This information helps APS to predict future incoming Kindergarten cohorts by school year.

### Site Plan Requests

APS receives site plan requests from ACG to estimate the potential impact of proposed new housing on student enrollment at neighborhood elementary, middle and high schools. This information also helps to inform APS about potential residential developments in the County’s housing pipeline.

# Collaboration with Stakeholders

## Projections Review Teams

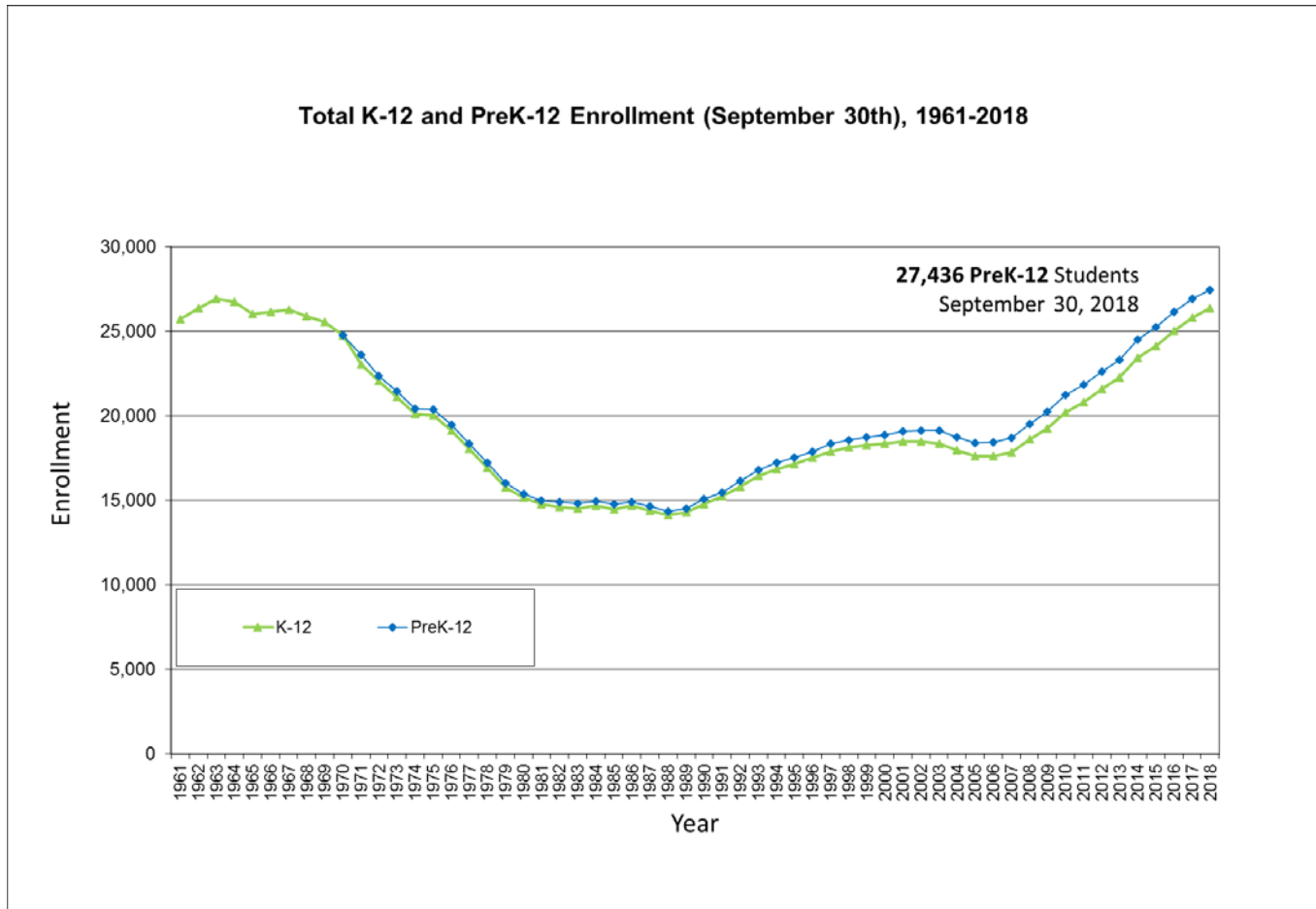
To solicit input on the APS enrollment projections process, an Internal Projections Review Committee was convened to review technical issues and assumptions used in the enrollment projections. The committee reviewed the draft projections completed by the APS Director of Facilities. Additional stakeholders, including principals and community members, reviewed the updated draft projections.

## Projections Schedule

Milestones	Timeframe
Internal Staff Assessment of Projection Methodology	May to early August 2018
Projections Internal Review Committee, Meeting #1	Monday, August 13, 2018
Receive data from Arlington County Government	Last week, September 2018
Receive September 30, 2018 enrollment	First week, October 2018
Draft 2019-20 One-Year Projected Enrollment to Finance	November 9, 2018
Projections Internal Review Committee, Meeting #2	November 20, 2018
Projections Preview for FAC and BAC members and other parents	November 27, 2018
School Board Adopts Elementary Boundaries	December 6, 2018
Produce Draft Elementary Projections with Updated Boundaries	January 24, 2019

# Historical Enrollment at APS

Enrollment projections typically use the most recent three to five years of historic data to predict future enrollment. While the most recent trends are used to estimate the near future, it is important to analyze enrollment in context of a longer historical perspective. The chart below shows APS enrollment from 1961 to date.



## Historical Annual Enrollment Change

The chart above reveals stable enrollment above the 25,000-student mark throughout the 1960s (excluding Pre-K students), with enrollment reaching 26,927 K-12 students in 1963. This period was followed by a significant decline in student enrollment in the 1970s and flat enrollment in the 1980s. Enrollment climbed modestly in the 1990s, leveled out in the early to mid-2000s, and has risen at an unprecedented rate since 2007. The Fall 2018 official count of 27,436 PreK-12 students is the highest student enrollment on record for APS, surpassing the previous all-time mark of 26,941 students in Grades PreK-12 in the 2017-18 school year.



## Recent Historical Annual Enrollment Change

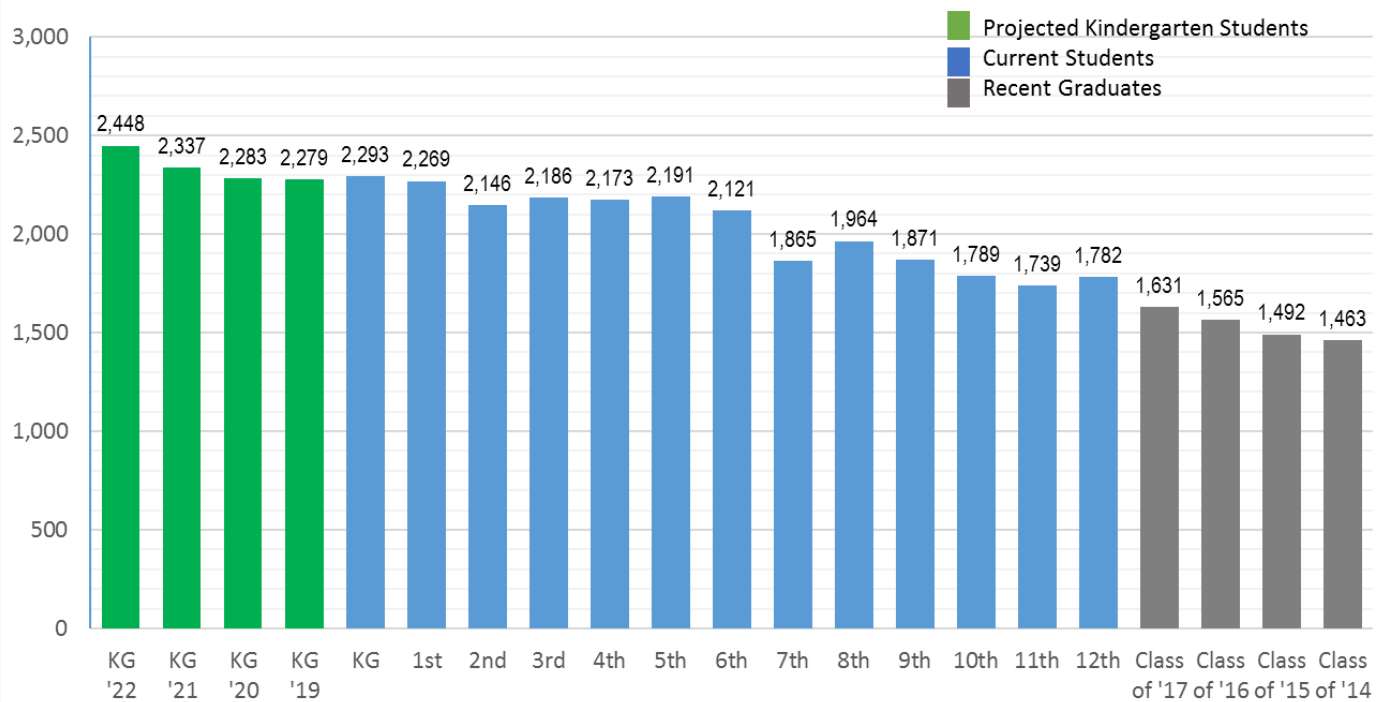
Year	PreK-12 Enrollment	% Change over Previous Year
September 2018	27,436	+1.8%
September 2017	26,941	+3.0%
September 2016	26,152	+3.6%
September 2015	25,238	+2.9%
September 2014	24,529	+5.2%
September 2013	23,316	+3.1%
September 2012	22,613	+3.5%
September 2011	21,841	+2.8%
September 2010	21,241	+5.0%
September 2009	20,233	+3.6%
September 2008	19,534	+4.5%
September 2007	18,684	+1.3%
September 2006	18,451	+0.2%
September 2005	18,411	-1.8%
September 2004	18,744	-2.0%
September 2003	19,120	-0.1%
September 2002	19,140	+0.2%
September 2001	19,097	+1.1%

The chart above reveals the high growth pattern APS has experienced since 2008. To provide a frame of reference, annual growth of 2 percent or more indicates a high growth rate. Annual growth between 1 and 2 percent indicates a medium growth and 0-1 percent indicates a low growth rate.

## Current Enrollment

On September 30, 2018, total PreK-12 enrollment was 27,436 students. This total includes students from preschool age to those students enrolled in the high school continuation programs. The chart on the next page shows the September 30, 2018, grade-by-grade student enrollment. The number of students in the Pre-K cohort is fixed at 1,347 students due to the seat availability anticipated for Fall 2019 by the Department of Teaching and Learning. For the past four years, the entering kindergarten cohort averaged nearly 2,200 students, while the exiting 12th grade cohort averaged 1,500+ students. This fact suggests natural enrollment growth will occur if smaller 12<sup>th</sup>-grade cohorts leaving the system are being replaced by larger kindergarten cohorts (projected for 2,200+ students) entering the system each year from now through 2028.

## APS Student Enrollment Snapshot Fall 2018-19



\*Source: Fall 2018 10-Year Projections

\*\*Source: Membership reports for 2018 and previous years [www.apsva.us/statistics/monthly-enrollment/](http://www.apsva.us/statistics/monthly-enrollment/)

## Projected Enrollment

Elementary school enrollment is expected to grow by more than 2,700 students or 21% over the next decade. This projected growth comes from larger kindergarten cohorts entering APS over the next decade, resulting from an anticipated increase in county births and expected growth in residential units which will accommodate additional households.

Middle school enrollment is expected to grow by just over 1,100 students or 19% over the next decade. Middle growth comes from larger elementary cohorts entering middle school over the next decade as well as the student yield of middle students coming from “new” housing developments to be built.

Lastly, high school enrollment is expected to grow by nearly 2,500 students or 35% over the next decade. High school enrollment grows as larger middle cohorts enter high school over the next decade as well as the student yield of middle school students coming from “new” housing developments to be built.

## Data Inputs & Methods

APS uses three sets of statistics to estimate future K-12 enrollment, which include the number of resident live births for Arlington County (for kindergarten projections only), the anticipated student yield from “future” housing units, and the history of enrollment change (i.e., cohort transition rate). Pre-Kindergarten student enrollment estimates are provided by the Department of Teaching & Learning for 2019-20 and are appended to the K-12 projections to develop the system-wide PreK-12 enrollment totals from 2019 to 2028.

Most school districts across the U. S. use the cohort transition rate to project enrollment. This approach captures the enrollment patterns of a cohort of students by school, beginning in Kindergarten and continuing as they transition from grade to grade. It is calculated by dividing the number of students in a cohort (i.e., grade) by the number of students from the previous cohort in the previous school year. A cohort transition ratio greater than one means there are more students entering school that year than there are enrolled in the previous grade. A cohort transition ratio that is less than one means there are fewer students entering school than in the previous grade.

Because grade-specific transition ratios may vary considerably from one year to the next, APS uses an average to estimate future school enrollment and produce the ten-year projections by grade for each school. Please note that the cohort transition statistic is a linear calculation. As such, sporadic fluctuations of historical enrollment data from year to year could affect the estimated projections of future enrollments.

Recent school boundary adjustments and changes in the options and transfers policy have changed historical enrollment trends at the school level and compelled APS planning staff to use a “residence-based cohort transition” approach for schools impacted by boundary adjustments. Planning staff used an “attendance-based” or “schools-based” cohort transition rates for schools not impacted by boundary changes. APS Planning staff has also collaborated with Arlington County Government to incorporate birth and housing data that ensures APS enrollment projections are aligned with Arlington County forecasts and convened an Internal Projection Review Committee to assess updates to the projection methodology.

## Foundational Inputs & Factors

### September 30 Official Enrollment Count

Historical September 30 enrollment counts, by grade for each school, are used to develop the cohort progression ratios that estimate future enrollment. The data comes from the APS Monthly Membership Report for the month of September provided by the Information Services Department. This data is provided by school and by grade for purposes of developing historical enrollment trends.

### Projected Housing Growth

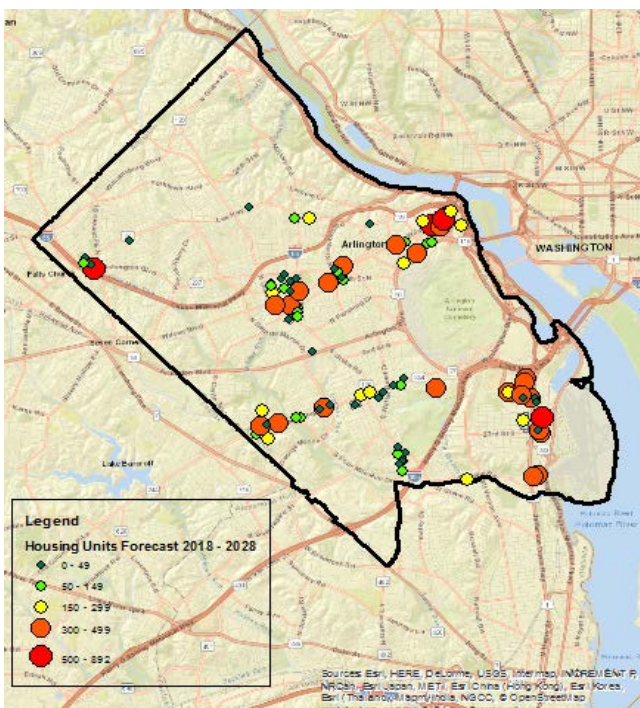
Starting in Fall 2017, the Arlington County Department of Community Planning, Housing and Development (“CPHD”) began providing APS with detailed anticipated housing unit data for the County. The Arlington CPHD also provides APS with the projected year (i.e., 2019, 2024, etc.) that “future” housing projects will be completed and the number of units in each residential development. Receiving such robust housing unit information ensures that APS enrollment projections and Arlington County forecasts are aligned with the same assumptions about the impact of “future housing units” on

student/population growth.

Housing forecast data bolsters long-term projections by accounting for potential “future” residential development projects by school attendance area. As of September 2018, there were 14,000+ future residential units in the housing pipeline forecasted to be constructed by Fall 2028.

Effective Fall 2018, CPHD now provides APS with data on “known” committed affordable units and mixed-income buildings in their housing pipeline data. This valuable information helps APS plan for future resource needs at the neighborhood schools that will eventually serve students coming from these future housing developments.

## Map of the Housing Pipeline Forecast (2018 – 2028)



The map (left) shows that most of the new student growth is slated to occur along the major transportation corridors. This aligns with Arlington County’s smart growth philosophy of creating attractive communities with a range of housing along major transportation corridors.

## Net New Housing Unit Forecasts for 2018 - 2028

Projection Year	Garden Apt	High-Rise Apt	Single Family Detached	Town House	Total Units
2018	307	1,909	0	12	2,228
2019	0	869	0	27	896
2020	36	762	3	0	801
2021	30	1,632	0	0	1,632
2022	0	1,311	0	27	1,338
2023	172	1,025	0	32	1,229
2024	12	1,367	0	151	1,530
2025	32	924	0	45	1,001
2026	0	1,198	0	0	1,198
2027	0	1,433	0	0	1,433
2028	0	1,293	0	0	1,293
<b>Total</b>	<b>559</b>	<b>13,723</b>	<b>3</b>	<b>293</b>	<b>14,579</b>

Data Source: Arlington CPHD, September 2018.



## Student Generation Factor

The Student Generation Factor estimates student yield from “new” housing based on the latest trends. It is the mathematical representation of the relationship between the number of existing housing units in Arlington County and the number of students—by housing unit type—enrolled at APS on September 30 for a given year. The student generation factor can be calculated each year because of the information sharing between APS (student data by address) and Arlington County (housing data by parcel). More details about this data are provided below.

### Student Generation Factor by Housing Unit Type School Year 2018-19

All Grade Levels (K-12)					
Housing Type	APS K-12 Students	% of Students by Housing Type	Housing Units county-wide	% of County Housing Type	Student Generation Factor
Single Family Detached	13,739	52.5%	27,625	24.2%	0.497
Townhouse	842	3.2%	4,331	3.8%	0.194
Duplex	899	3.4%	2,511	2.2%	0.358
Apartment Elevator – Market Rate	1,717	6.6%	27,971	24.5%	0.061
Apartment Elevator – Mixed Income	1,140	4.4%	9,038	7.9%	0.126
Apartment Elevator – CAF	373	1.4%	605	0.5%	0.617
Apartment Garden – Market	2,541	9.7%	9,838	8.6%	0.258
Apartment Garden – Mixed Income	820	3.1%	2,159	1.9%	0.380
Apartment Garden – CAF	2,010	7.7%	3,441	3.0%	0.584
Condo-Elevator	822	3.1%	15,339	13.4%	0.054
Condo-Garden	1,255	4.8%	11,456	10.0%	0.110
<b>Total</b>	<b>26,158</b>	<b>100%</b>	<b>114,314</b>	<b>100.0%</b>	<b>0.229</b>

#### Notes:

- Housing unit data for 2018 provided by Arlington County Department of Community Planning and Housing Development.
- Some students were not geocoded for reasons such as (i) they are children of employees who live outside Arlington County, (ii) they reside on Joint Base Myer-Henderson Hall (federal jurisdiction), or (iii) they are homeless or in foster care outside Arlington County, or live at a shelter.
- The Pre-K cohort (1,047 students) is not included in the student generation factor calculation. Pre-K enrollment is based upon funding and seat availability.

## Student Yield from Future Housing

The anticipated student yield from “future” housing units are included in the projections by the impacted neighborhood elementary, middle, and high schools. The projected student yield was calculated using the relevant student generation factor by the housing unit type (i.e., high-rise apartment, garden apartment, town house, etc.) and school attendance zone. The elementary school and middle school student generation rates by school attendance zones reflect the 2019-20 boundary updates to boundaries in 2019-20.

Student yields from residential developments were phased into the enrollment projections over a two-year period from the date that residential development was forecasted to be completed. As an example, the student yield for a residential development forecasted to be completed in 2026 will be phased in starting Fall 2026 (Year 1) and ending in Fall 2027 (Year 2).

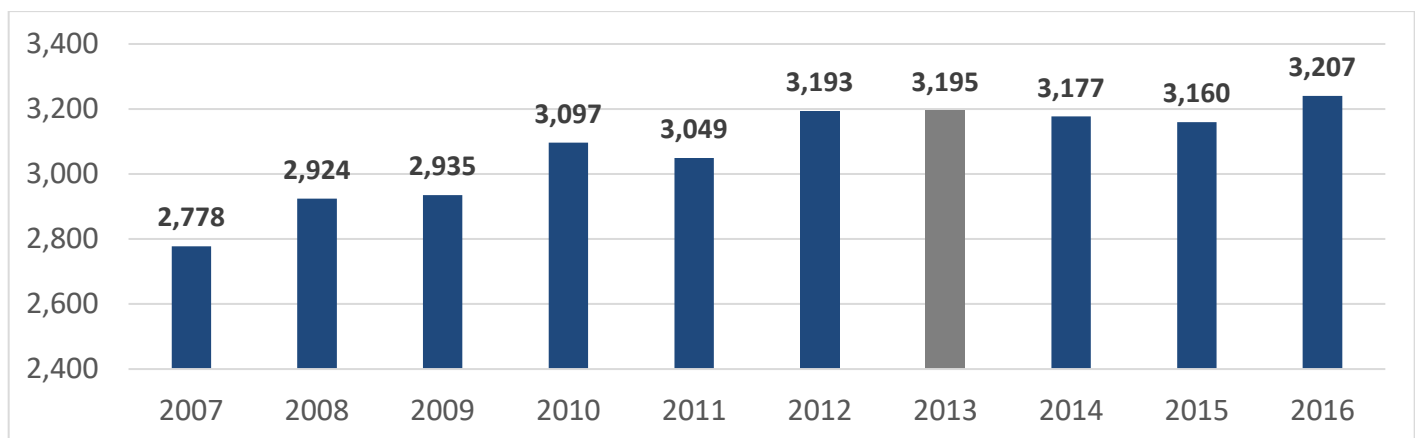
## Methodology Change in the Student Yield

The new methodology in calculating the student yield assumes that the yield from newly developed housing units will produce the same number of students every year once the development is constructed. This new approach has a cumulative effect that increases projected student enrollment at schools that have future housing developments within their neighborhood school attendance zones. This new approach to student yields is applied to incoming cohorts in Kindergarten, Grade 6 and Grade 9. The previous method factored a new residential unit’s student yield impact in the year of construction, but not in subsequent years. The previous method did not account for the impact of the student yield beginning the first year after the future housing development was slated for completion, but that is now included in this new methodology.

## Resident Live Births

Arlington County’s historic resident live birth data is obtained from the Virginia Center for Health Statistics (“VDOH”). VDOH last provided live birth information in 2016; thereafter, Arlington County CPHD has provided APS with forecasted resident live births for 2017 to 2022. The resident live birth information from both sources was used to estimate future Kindergarten cohorts over the 10-year projection horizon. As the graph below shows, Arlington’s resident live births have risen from about 2,700+ births in 2007 to above 3,100 births each year between 2012 and 2016. The chart below shows actual births in Arlington County for the last ten years.

Historical Resident Births in Arlington for 2007-2016



Note:

1. Gray bar denotes the total number of resident births in 2013 that are eligible to enter kindergarten in School Year 2018-19.
2. Data source: Virginia Department of Health (<https://www.vdh.virginia.gov/HealthStats/stats.htm>)

## Forecasted Births for Calendar Years 2017 through 2023

Birth Year	Resident Births	School Year Entering KG	Projected KG Cohort
2017	3,323	<b>2022</b>	2,349
2018	3,408	<b>2023</b>	2,409
2019	3,495	<b>2024</b>	2,471
2020	3,557	<b>2025</b>	2,515
2021	3,620	<b>2026</b>	2,559
2022	3,684	<b>2027</b>	2,604
2023	3,750	<b>2028</b>	2,651

Note: The data source for projected resident births is the Arlington CPHD, September 2018. The kindergarten projection figures referenced above do not include future kindergarten students generated from new housing developments that will be constructed.

### Birth to Kindergarten Capture Rate

The kindergarten capture rate is defined as the percentage of children entering kindergarten in a particular year as compared to the total number of children born five years earlier to Arlington residents. Since 2000, the Birth to Kindergarten capture rate has increased significantly, which indicates that more resident families with children born in Arlington are staying in Arlington and/or more families with children born elsewhere are moving to Arlington and enrolling their children in kindergarten at APS. For the past three school years (2016 through 2018), the capture rate has stabilized at about 71%.

### Historical Kindergarten Capture Rate 2000-2013

Birth Year	Resident Births	School Year Entering KG	Actual Kindergarten	Kindergarten Capture Rate %
2000	2,715	2005	1,501	55%
2001	2,814	2006	1,627	58%
2002	2,686	2007	1,610	60%
2003	2,659	2008	1,697	64%
2004	2,810	2009	1,924	68%
2005	2,809	2010	2,003	71%
2006	2,561	2011	1,968	77%
2007	2,778	2012	2,179	78%
2008	2,924	2013	2,139	73%
2009	2,935	2014	2,196	75%
2010	3,097	2015	2,152	69%
2011	3,049	2016	2,127	<b>70%</b>
2012	3,193	2017	2,253	<b>71%</b>
2013	3,195	2018	2,293	<b>72%</b>

## Methodology Adjustments During Major Transitions

Recent changes in the options and transfers policy, in addition to boundary adjustments needed for the opening of Alice West Fleet Elementary School and Dorothy Hamm Middle School, have disrupted historical enrollment trends and required APS planning staff to update methods to prepare the 10-year enrollment projections. Below is a summary of the methodology updates.

### Incoming Kindergarten Cohorts

The 2011 to 2013 three-year average birth-to-kindergarten ratio (.707) was applied to actual or forecasted resident birth data provided by CPHD to estimate future kindergarten cohorts entering APS. Please note that in this projection round, the 2019 to 2021 kindergarten projections are based on actual births that took place between 2014 and 2016. The 2022 to 2028 kindergarten projections are based on CPHD's forecast of births to County residents between 2017 and 2023.

Once the total countywide number of kindergarten students is determined for a given school year, the historical residence-based school-by-school kindergarten enrollment pattern (three-year ratio) is used to estimate the future kindergarten cohorts allotted to each neighborhood elementary school. In prior projection rounds, the historical three-year school-by-school kindergarten enrollment pattern was based on students attending each school. This was amended in the current projection round to accommodate the enrollment modeling of seven schools impacted by boundary changes (that will take effect in September 2019), which need to be calculated based on where students reside.

Projected Kindergarten enrollment also includes the impact of new students coming from net new residential units. CPHD provides APS with a forecast of net new housing units, by type, likely to be habitable within the next ten years. To these residential units, APS applies a student generation rate to calculate the number of elementary students likely to reside in those units. One-sixth of that elementary student yield from net new residential units, by relevant attendance zone, is added to each incoming kindergarten cohort.

An update to the kindergarten projections approach is that the impact of new construction is calculated on a cumulative-basis over the projection period. For example, if there was residential construction in an attendance zone in 2020 and 2023, the cumulative impact of that net new housing will be calculated for the incoming kindergarten cohort in 2026 as well. In prior projection rounds, the impact of new housing on an incoming kindergarten cohort was only factored in the year in which that construction took place.

The projected incoming kindergarten cohort for the five option schools—which include Arlington Traditional (120), Campbell (96), Claremont Immersion (144), Drew (44) and Key Immersion (144)—are capped based on the available kindergarten classrooms determined in the Spring Update to the Fall 2018 Enrollment Projections. These assumptions will be revised for the forthcoming Spring Update to the Fall 2019 Enrollment Projections.

The kindergarten enrollment assumptions made for the five option schools also impact the projected kindergarten enrollment for neighborhood schools. In both the attendance- and residence-based approaches, the share of Sept. 30 resident students attending each of the five option programs was calculated for each neighborhood school. These school-by-school option program specific shares were applied to each option program's assumed kindergarten cohort from the Spring Update to the Fall 2018 Enrollment Projections. This was done to arrive at each neighborhood school's assumed number of kindergarten students attending an option program. Subsequently, these assumed option-school attending kindergarteners were subtracted from each school's total kindergarten cohort. Therefore, each neighborhood school's reported kindergarten cohort represents an estimate of attending

kindergarten students who will not attend an option school.

## Projections Approaches by School Level

Recent changes in the options and transfers policy in addition to boundary changes have disturbed historical enrollment trends and required APS planning staff to use different methods to prepare the Fall 10-year enrollment projections. Provided below are the projections methods and assumptions by school level.

### **Elementary School Level:**

The elementary school (K-5) projections use Sept. 30, 2018 enrollment as a starting point. For neighborhood schools that will not experience boundary changes in 2019-20 and option programs, the Sept. 30, 2018 enrollment per school is referenced from the Monthly Membership Report. For the seven schools that will experience boundary adjustment in 2019-20, the Sept. 30, 2018 count of students was based on where students live per adjusted attendance zone. In addition, for the seven schools with boundary adjustments, the Sept. 30, 2018 count of students attending an option program by grade was subtracted from each school's grade specific resident student counts.

Thereafter, the 2019 to 2028 enrollment projections were calculated by introducing an incoming kindergarten cohort each projection year; see "Incoming Kindergarten Cohorts" section for more information. Applying cohort transition rates to the K-4 enrollment estimates how many students will progress to grades 1-5 the following school year. The assumptions underpinning the calculation of cohort transition rates differ if a school did or did not experience a boundary change or was an option program.

For schools not involved in the Fall 2018 elementary school boundary process, attendance-based cohort transition rates were used to estimate future elementary school enrollment:

- A three-year weighted average cohort transition rate (CTR) was applied to neighborhood schools not impacted by the Discovery boundary changes which took effect in 2015. The weights used are 50% for 2018, 25% for 2017, and 25% for 2016; recent changes in the options and transfers policy account for the greater emphasis on 2018.
- A two-year CTR was applied to all neighborhood elementary schools impacted by the Discovery boundary adjustment process (including Ashlawn, Discovery, Glebe, Jamestown, McKinley, Nottingham, Taylor and Tuckahoe) to avoid using trends from before the new boundary took effect in 2015. Otherwise, the inclusion of 2016 enrollment data necessitates a comparison with 2015 when the new school opened, which led to some anomalies in enrollment patterns that year.

For schools that will be impacted by boundary adjustments starting in 2019-20, residence-based cohort transition rates were used to estimate future elementary school enrollment:

- A three-year weighted average CTR was calculated from the students (attending option or neighborhood schools) by grade who resided in each of the seven adjusted school attendance zones in 2016, 2017, and 2018. Because student addresses are spatially fixed, these addresses can be retroactively associated with adjusted boundaries that did not exist in 2016, 2017, or 2018. The weights used for the residence-based cohort transition rates are 50% for 2018, 25% for 2017, and 25% for 2016; recent changes in the options and transfers policy account for the greater emphasis on 2018.

For option schools, the following assumptions were made regarding cohort transition rates:



- A cohort transition rate of 1.0 was applied to Arlington Traditional School under the assumption that its classrooms can accommodate the maximum number of students at any one time because of its extensive waiting list. It is further assumed that each incoming kindergarten class will have cohorts at the maximum class size of 24 students per classroom. With a cohort transition rate of 1.0, eventually all classrooms will reflect cohorts of 24 students in grades K-5.
- A cohort transition rate of 1.0 was also assumed for the Montessori Public School of Arlington (at the Henry site). It was also assumed that the incoming kindergarten class will be the same size as the exiting grade 5 cohort to keep the enrollment fixed at 335 students in Grades K-5 per projection year. This assumption will be revisited for the Spring Update to the Fall 2019 Projections.
- A three-year weighted average cohort transition rate (CTR) was applied to Claremont and Key Immersion. A three-year weighted average is assumed for these schools since students that might leave the program cannot be easily replaced with students on the waiting list because of the immersion programs' language requirements. The weights were 50% for 2018, 25% for 2017, and 25% for 2016; recent changes in the options and transfers policy account for the greater emphasis on 2018.
- A three-year weighted average CTR was applied to Campbell for Grades 1-5.
- In addition, the incoming kindergarten cohort in each projection year is referenced from the Spring Update to the Fall 2018 Projection which assumes 96 kindergarten students at Campbell and 144 students each at Claremont and Key.

As part of the School Board's action to approve adjusted elementary boundaries on Dec. 6, 2018, the board also approved a grandfathering provision (see Elementary Boundaries – Grandfathering Motion 12-6-18). This provision was included in the projections based on keeping students in Grade 4 in 2018-19 at their current school for the 2019-20 school year. Please see Table 1 for the figures used for the grandfathered 2018-19 Grade 4 students. Assumptions about grandfathered siblings will be included in the Spring Update to the Fall 2019 Projections.

Table 1. Fall 2018 Elementary School Boundary Process-Recommendation 6-1A

Fall 2018 Elementary School Boundary Process - Recommendation 6-1A  
Scenarios for Grandfathering by Current School

2018-19 School (moving from)		2019-20 School (moving to)		No. Students in PU Proposed for Move										Grandfather Grade 5 and Concurrent Siblings		Grandfather Grades 4 & 5 and Concurrent Siblings		Grandfather Grades 3, 4 & 5 Concurrent Siblings	
Planning Unit Moved in Proposal 6-1a		Total	K	Gr1	Gr2	Gr3	Gr4	Gr5	PreK	Gr5	Sibling	Total	Gr4&5	Sibling	Total	Gr3,4&5	Sibling	Total	
Abingdon	38050	Drew	27	6	3	6	5	1	4	2	1	0	1	6	1	7	12	3	15
<b>Abingdon</b>	<b>Total Moving from Abingdon</b>	<b>27</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>12</b>	<b>3</b>	<b>15</b>	
Barcroft	37041	Fleet	3	1	0	0	1	0	0	1	0	0	0	1	0	1	1	0	1
Barcroft	37042	Fleet	4	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1
<b>Barcroft</b>	<b>Total Moving from Barcroft</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	
Henry	46010	Drew	57	12	11	7	8	8	7	4	8	5	13	16	7	23	23	8	31
Henry	46011	Drew	14	3	1	3	2	4	1	0	4	1	5	6	1	7	9	2	11
Henry	46111	Hoffman-Boston	10	0	2	1	2	1	3	1	1	0	1	3	0	3	4	0	4
Henry	46130	Drew	8	2	1	2	1	0	0	1	0	1	3	1	4	5	1	6	
Henry	46131	Drew	15	1	5	2	1	1	4	1	1	1	2	2	1	3	4	2	6
Henry	46132	Drew	20	3	1	3	6	4	2	1	4	1	5	10	2	12	13	2	15
Henry	46133	Drew	7	1	0	3	1	1	1	0	1	0	1	2	0	2	5	0	5
<b>Henry</b>	<b>Total Moving from Henry</b>	<b>131</b>	<b>22</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>20</b>	<b>18</b>	<b>7</b>	<b>20</b>	<b>8</b>	<b>28</b>	<b>42</b>	<b>12</b>	<b>54</b>	<b>63</b>	<b>15</b>	<b>78</b>	
Hoffman-Boston	38100	Drew	10	0	2	1	1	2	2	2	2	1	3	3	1	4	4	1	5
Hoffman-Boston	38110	Drew	16	5	1	1	3	1	3	2	1	0	1	4	1	5	5	1	6
Hoffman-Boston	48220	Drew	47	7	6	7	6	8	5	8	8	2	10	14	4	18	21	5	26
<b>Hoffman-Boston</b>	<b>Total Moving from Hoffman-Boston</b>	<b>73</b>	<b>12</b>	<b>9</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>3</b>	<b>14</b>	<b>21</b>	<b>6</b>	<b>27</b>	<b>30</b>	<b>7</b>	<b>37</b>	
Long Branch	46900	Fleet	30	3	5	3	9	2	7	1	2	1	3	11	2	13	14	2	16
Long Branch	46910	Fleet	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Branch	48180	Hoffman-Boston	17	3	5	1	2	3	1	2	3	0	3	5	1	6	6	1	7
Long Branch	48990	Fleet	10	3	2	0	1	2	2	0	2	2	4	3	2	5	3	2	5
<b>Long Branch</b>	<b>Total Moving from Long Branch</b>	<b>59</b>	<b>10</b>	<b>13</b>	<b>4</b>	<b>12</b>	<b>7</b>	<b>10</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>10</b>	<b>19</b>	<b>5</b>	<b>24</b>	<b>23</b>	<b>5</b>	<b>28</b>	
Oakridge	48070	Hoffman-Boston	23	4	0	6	3	2	5	3	2	0	2	5	0	5	11	1	12
Oakridge	48090	Hoffman-Boston	25	7	6	4	2	4	2	0	4	2	6	6	3	9	10	3	13
Oakridge	48110	Hoffman-Boston	75	19	13	11	9	7	14	2	7	2	9	16	5	21	27	8	35
Oakridge	48120	Hoffman-Boston	10	2	2	0	1	2	3	0	2	1	3	3	1	4	3	1	4
Oakridge	48121	Hoffman-Boston	65	12	10	12	7	13	11	0	13	7	20	20	8	28	32	11	43
Oakridge	48270	Hoffman-Boston	10	2	1	2	1	1	1	2	1	1	2	2	2	4	4	2	6
Oakridge	49260	Hoffman-Boston	20	6	1	4	3	5	1	0	5	3	8	8	3	11	12	3	15
<b>Oakridge</b>	<b>Total Moving from Oakridge</b>	<b>228</b>	<b>52</b>	<b>33</b>	<b>39</b>	<b>26</b>	<b>34</b>	<b>37</b>	<b>7</b>	<b>34</b>	<b>16</b>	<b>50</b>	<b>60</b>	<b>22</b>	<b>82</b>	<b>99</b>	<b>29</b>	<b>128</b>	
<b>TOTAL</b>	<b>6 schools</b>	<b>525</b>	<b>105</b>	<b>79</b>	<b>80</b>	<b>76</b>	<b>73</b>	<b>80</b>	<b>32</b>	<b>73</b>	<b>30</b>	<b>103</b>	<b>149</b>	<b>46</b>	<b>195</b>	<b>229</b>	<b>59</b>	<b>288</b>	

Note: Total reflects PreK to 5 Enrolled Students on September 30, 2018 Enrollment Report  
Grandfathering Scenarios identify 2018-19 Grade 4 students as Grade 5 in 2019-20

Source: <https://www.apsva.us/wp-content/uploads/2018/12/Recommendation-6-1A-Grandfathering-Scenarios.pdf>

It was noted in the “Incoming Kindergarten Cohorts” section that new kindergarteners from new residential construction are added on a cumulative basis. Likewise, for Grades 1-5, new students from new construction are also factored, but only for the year in which the construction took place.

Please note that the enrollment projections for Fleet do not include assumptions for the reassignment of students associated with Joint Base Meyer Henderson Hall (JBM-HH) and the Child Development Center (CDC). These students will be included in the Spring Update to the Fall 2019 Projections.

In both the attendance- and residence-based approaches, the share of Sept. 30 residing students attending each of the five elementary option programs was calculated for each neighborhood school.

### **Middle School Level:**

Because of the opening of the new Stratford middle school and adjustments to middle school boundaries for the 2019-20 school year, a residence-based approach was used to project enrollment. With this approach, the first step in projecting middle school enrollment is determining the Sept. 30, 2018, students in Grades 6-8 who reside in the adjusted boundary. Secondly, the students who will be in Grade 6 in 2019-20 that are currently in Grade 5 and reside in the adjusted school attendance zone, are determined for each projection year, starting in 2019-20. Thereafter, these cohorts are progressed to the following grade, for example Grade 5 to Grade 6, using residence-based cohort transition rates.

- The Residence-based cohort transition rates used to estimate middle school grade progression are based on students in Grades 5-8 living in the adjusted boundaries in 2016, 2017, and 2018. Because student addresses are spatially fixed, these addresses can be retroactively associated with adjusted boundaries that did not exist in 2016, 2017, or 2018. The middle school cohort transition rate is based on these 3-year grade progression trends.

The updated approach to projecting middle school enrollment also made assumptions related to option programs:

- The Stratford program enrollment is fixed to its Sept. 30, 2018 enrollment in all projection years.
- Enrollment at H-B Woodlawn uses an attendance-based 3-year cohort transition rate that is calculated from the 2016, 2017, and 2018 school years. This rate is applied to each cohort in Grades 6 and 7 as they progress to Grades 7 and 8 the following year.
- It is assumed that each incoming Grade 6 class at H-B Woodlawn will be 79 students. This is the same 6th grade cohort size that was recorded in the Sept. 30, 2018 student count.
- Option students at HB-Woodlawn and Stratford were subtracted from neighborhood middle school resident student totals to avoid counting middle school option students twice.
- Grade 6 option students in Immersion & Montessori programs were subtracted from their neighborhood middle school totals and added to their receiving middle school totals based on a 3-year average (2016 through 2018) of students enrolled in Grade 6, to estimate the Grade 6 cohort for school year 2019-20.
- Grade 7 option students in Immersion & Montessori programs were subtracted from their neighborhood middle school totals and added to their receiving middle school totals based on the 2018 actual count of 6<sup>th</sup> graders, to estimate the Grade 7 cohort for school year 2019-20.
- Grade 8 option students in Immersion & Montessori programs were subtracted from their neighborhood middle school totals and added to their receiving middle school totals based on the 2018 actual count of

- Grade 7, to estimate the Grade 8 cohort for school year 2019-20.
- 2018-19 transfer trends for students in Grades 6 and 7 that are not enrolled in immersion or Montessori programs were assumed to continue as these students transition into Grades 7 and 8 in 2019-20. These students were subtracted from their neighborhood middle school totals and added to their receiving middle school totals based on transfer data recorded in the September 30, 2018 official count.
- The current Grade 6 transfer pattern for the 2018-19 school year is assumed to continue through the 2028-29 school year.
- Residence- based cohort transition rates and the student yield from new housing were used to estimate enrollment in Grades 6, 7, and 8 from school years 2020 through 2028.

Middle school students coming from new residential construction are also accounted for in this process. Each incoming Grade 6 class includes the cumulative impact of new construction.

### **High School Level:**

The most recent high school boundary adjustments took place in the 2017-18 school year. Because there are now two years of post-boundary adjustment enrollment data available, an attendance-based enrollment projections approach was used.

The high school enrollment projections use Sept. 30, 2018 enrollment as a starting point. For neighborhood schools, the Sept. 30, 2018 enrollment per school is referenced from the Monthly Membership Report.

Each incoming Grade 9 class is based on the prior year's Grade 8 students who reside in each high school attendance zone.

Starting with the 2019-20 class, each neighborhood high school class is based on incoming students in Grade 9 and the progression of the prior year's students in Grades 9 through 11 as they progress to Grades 10 through 12 in the following year. This grade progression is based on a two-year cohort transition rate.

High School option programs are projected through another method that includes the assumption that Arlington Tech projections assume a flat 1.0 cohort transition rate which is applied to grades 9-12.

In addition, it is assumed that each entering Grade 9 cohort will be 150 students and that Arlington Tech (with 600 seats) will reach its maximum enrollment of 600 students in September 2022.

- Enrollment at Langston, Arlington Community High School, and the Stratford program are fixed to their Sept. 30, 2018 enrollment in all projection years.
- H-B Woodlawn uses an attendance based three-year cohort transition rate. Each incoming Grade 9 class comes from the program's prior Grade 8 class (after applying its relevant cohort transition rate).
- Full-time students enrolled at Arlington Tech are subtracted from neighborhood high school totals to avoid counting them twice each projection year.

High school students coming from new residential construction are also accounted for in this process. Each incoming Grade 9 class includes the cumulative impact of new construction.

The assumption outlined above for elementary, middle and high school level will be revisited for the Spring Update to the Fall 2019 School Year Projections.

### Steps to Validate Projections

To validate the enrollment projections, an internal review committee met during the enrollment projection process to discuss assumptions, technical issues that arose, and review projection results. This process was put in place to allow various perspectives and expertise to assist with decision-making on assumptions. The stakeholders from APS included staff from the departments of Planning and Evaluation (P&E), Facilities and Operations, Finance and Management Services, Teaching and Learning, and school principals. In addition, external experts from Arlington County Government, CPHD and Dr. Richard Grip from Statistical Forecasting LLC also offered perspectives.

The P&E staff tasked to perform the enrollment projections modeling identified key assumptions, such as how to adjust cohort transition rates to reflect the update to the Options and Transfer Policy, that needed input from the Internal Review Committee. After this committee provided feedback, the P&E staff drafted various modeling approaches that reflected the committee's suggestion and performed quality control checks on the projections modeling formulas. Dr. Grip was then consulted to see which modeling approach was most appropriate and validated the approach and results.

An important review step suggested by the Internal Review Committee was the development of an alternative projection model that used county-wide enrollment figures, construction assumptions, and cohort transition rates. The enrollment projections from this approach, known as a "top-down" approach, was compared to the projections from the "bottom-up" approach, which is outlined in this report. The purpose of this comparison was to observe the enrollment growth trends from each approach with the goal that they both reflect similar scales of enrollment growth trends. The enrollment projections from the two approaches was reviewed and ultimately validated with assistance from Dr. Grip.

# Fall Ten-Year Enrollment Projection Tables

















ARLINGTON PUBLIC SCHOOLS  
PLANNING EVALUATION  
FALL 2024 SCHOOL YEAR ENROLLMENT PROJECTIONS  
1/31/2019  
ADJUSTED FOR MIDDLE AND HIGH SCHOOL BOUNDARY CHANGES

**The Fall projections are subject to program relocation decisions, including at the PreK level. This will be reflected in the Spring Update to the Fall 2019 School Year Projections (produced in late February 2019).**

ELEMENTARY SCHOOL								Preschool <sup>5</sup>												TOTAL				
	K	1	2	3	4	5	K-5	VPI	PreK SPED	3&4 Mont	Dual Enrl <sup>6</sup>	Peer Pals	PreK Total											
Abingdon	133	123	113	106	102	105	682	32	8	0	0	0	40							722				
Arlington Science Focus	123	132	130	124	121	120	750	0	0	0	0	0	0							750				
Arlington Traditional	120	120	120	120	120	120	720	32	6	0	0	0	38							758				
Ashlawn	125	133	128	127	120	133	766	16	16	0	0	0	32							798				
Barcroft	97	94	86	80	76	77	510	32	8	0	0	0	40							550				
Barrett	86	82	81	78	77	83	487	48	22	17	0	0	87							574				
Campbell	96	92	93	99	98	96	574	48	0	0	0	0	48							622				
Carlin Springs	87	87	84	81	83	84	506	64	32	17	0	5	118							624				
Claremont	144	138	134	125	116	111	768	32	0	0	0	0	32							800				
Discovery	102	102	100	101	99	104	608	0	8	34	0	0	42							650				
Drew	105	101	99	91	90	89	575	0	0	0	0	0	0							575				
Fleet <sup>1</sup>	109	103	96	92	88	86	574	32	5	0	0	0	37							611				
Glebe	112	112	104	106	105	104	643	0	8	0	0	2	10							653				
Hoffman-Boston	103	101	107	93	91	100	595	80	42	85	0	3	210							805				
Jamestown	86	84	88	91	92	97	538	0	16	51	0	0	67							605				
Key	144	137	125	117	109	104	736	32	8	0	0	0	40							776				
Long Branch	83	82	76	71	64	62	438	16	6	0	0	0	22							460				
Montessori Public School	44	83	66	54	46	42	335	32	32	119	0	0	183							518				
McKinley	146	146	144	143	143	144	866	0	0	0	0	0	0							866				
Nottingham	87	87	87	87	89	90	527	0	0	0	0	0	0							527				
Oakridge	129	123	116	114	111	102	695	16	8	0	0	0	24							719				
Randolph	80	76	73	68	67	65	429	48	16	0	0	0	64							493				
Taylor	129	130	127	119	118	118	741	0	8	0	0	3	11							752				
Tuckahoe	100	100	89	87	80	81	537	0	8	0	0	4	12							549				
Integration Station (Reed)	0	0	0	0	0	0	0	0	78	0	0	0	78							78				
<b>ELEMENTARY TOTAL</b>	<b>2,570</b>	<b>2,568</b>	<b>2,466</b>	<b>2,374</b>	<b>2,305</b>	<b>2,317</b>	<b>14,600</b>	<b>560</b>	<b>335</b>	<b>323</b>	<b>112</b>	<b>17</b>	<b>1,347</b>							<b>15,947</b>				
<b>MIDDLE SCHOOL</b>														6	7	8	MID.							
Gunston														488	446	414	1,348				1,348			
Hamm														289	292	257	838				838			
Jefferson														452	444	411	1,307				1,307			
Kenmore														394	372	341	1,107				1,107			
Stratford Program														2	2	9	13				13			
Swanson														409	376	385	1,170				1,170			
Williamsburg														246	302	281	829				829			
H-B Woodlawn														79	81	82	242				242			
<b>MIDDLE TOTAL</b>														<b>2,359</b>	<b>2,315</b>	<b>2,180</b>	<b>6,854</b>				<b>6,854</b>			
<b>HIGH SCHOOL</b>														9	10	11	12	HIGH						
Arlington Community														4	16	29	42	91			91			
Arlington Tech														150	150	150	150	600			600			
Langston <sup>3</sup>														3	14	26	78	121			121			
Stratford Program														8	4	4	20	36			36			
Wakefield														772	781	721	696	2,970			2,970			
Washington-Liberty														682	672	674	567	2,595			2,595			
Yorktown														617	614	622	576	2,429			2,429			
H-B Woodlawn														107	118	120	123	468			468			
<b>HIGH TOTAL</b>														<b>2,343</b>	<b>2,369</b>	<b>2,346</b>	<b>2,252</b>	<b>9,310</b>			<b>9,310</b>			
<b>TOTAL</b>	<b>2,570</b>	<b>2,568</b>	<b>2,466</b>	<b>2,374</b>	<b>2,305</b>	<b>2,317</b>	<b>14,600</b>	<b>560</b>	<b>335</b>	<b>323</b>	<b>0</b>	<b>12</b>	<b>1,347</b>	<b>2,359</b>	<b>2,315</b>	<b>2,180</b>	<b>6,854</b>	<b>2,343</b>	<b>2,369</b>	<b>2,346</b>	<b>2,252</b>	<b>9,310</b>	<b>9,310</b>	
<b>K-12 TOTAL</b>	<b>30,764</b>																							
Career Center - FTEs <sup>4</sup>	459																							
Reed (community services)	60																						PreK-12 Total	32,111

<sup>1</sup> Projections for Fleet do not include assumptions for the reassignment of students associated with Joint Base Meyer Henderson Hall (JBM-HH) and the Child Development Center (CDC). These students will be included in the Spring Update to the Fall 2019 School Year Projections.

<sup>2</sup> Five-year-old Montessori students are reported in Kindergarten. PreKindergarten enrollment previously reported at Drew has been reassigned to the Montessori program in the Henry building.

<sup>3</sup> Langston and Arlington Community membership does not include students over 20 years old. The above projections do not include the adult students at Arlington Community and at Langston.

<sup>4</sup> Career Center Full-time Equivalent (FTE) are not included in the total as the students are already counted in their home school.

<sup>5</sup> PreK estimates are prepared by the Department of Teaching & Learning. The PreK estimates are for the Fall 2019 and this same estimate is used for projections years 2019-28 in the table above. APS provides specialized services (i.e., Speech) to "dual-enrolled" students on a limited basis and invites PreK students to serve as "peer models" in PreK classrooms that are under-enrolled. Although both dual-enrolled and peer model students are counted towards total enrollment, they are not counted toward capacity utilization since they are in attendance in school only intermittently. The Fall projections are subject to program relocation decisions which will be reflected in the Spring update produced in February.

<sup>6</sup> The Department of Teaching & Learning provided total "dual-enrolled" student estimates, but did not provide school-specific estimates.

**Notes:**

All Special Education students, including those in self-contained classes, all ESOL/HILT/HILTEX students, and all Transition Program students are included within the grade totals at each school.

The projections for option schools were calculated differently from neighborhood schools. For certain option schools, either their enrollment was static as of Sept. 30, 2018 or the incoming class was based on the prior year's Spring Update to the Fall Projections.

Due to rounding, numbers presented may not add up precisely to reflect the absolute figures.

*All Arlington Public Schools (APS) budget and operations decisions are based on the best information available at the time. Staff and community members are reminded that funding forecasts from Arlington County and the state may change, based on many external factors. Similarly, student enrollment and projections are based on the best available information, but are also subject to change due to employment, housing and other economic factors. For these reasons, APS and the Arlington School Board may adjust future budget allocations, staffing and other operations decisions to reflect the existing community and operating landscape.*

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1/31/2019  
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The Fall projections are subject to program relocation decisions, including at the PreK level. This will be reflected in the Spring Update to the Fall 2019 School Year Projections (produced in late February 2019).

ELEMENTARY SCHOOL	K-5							Preschool <sup>5</sup>						MIDDLE SCHOOL				HIGH SCHOOL				TOTAL		
	K	1	2	3	4	5	K-5	VPI	PreK SPED	3&4 Mont	Dual Enrl <sup>6</sup>	Peer Pals	PreK Total	6	7	8	MID	9	10	11	12		HIGH	
Abingdon	137	128	118	112	105	104	704	32	8	0	0	0	40											744
Arlington Science Focus	129	139	138	134	126	121	787	0	0	0	0	0	0											787
Arlington Traditional	120	120	120	120	120	120	720	32	6	0	0	0	38											758
Ashlawn	129	140	133	135	125	134	796	16	16	0	0	0	32											828
Barcroft	100	97	89	84	78	76	524	32	8	0	0	0	40											564
Barrett	89	87	86	82	81	83	508	48	22	17	0	0	87											595
Campbell	96	92	93	99	98	96	574	48	0	0	0	0	48											622
Carlin Springs	90	91	87	88	85	83	524	64	32	17	0	5	118											642
Claremont	144	138	134	125	116	111	768	32	0	0	0	0	32											800
Discovery	105	104	103	104	101	103	620	0	8	34	0	0	42											662
Drew	108	105	103	97	91	90	594	0	0	0	0	0	0											594
Fleet <sup>1</sup>	111	106	99	94	89	85	584	32	5	0	0	0	37											621
Glebe	114	116	107	111	107	103	658	0	8	0	0	2	10											668
Hoffman-Boston	106	105	111	98	93	101	614	80	42	85	0	3	210											824
Jamestown	88	86	90	94	93	97	548	0	16	51	0	0	67											615
Key	144	137	125	117	109	104	736	32	8	0	0	0	40											776
Long Branch	85	84	79	75	65	62	450	16	6	0	0	0	22											472
Montessori Public School	42	44	83	66	54	46	335	32	32	119	0	0	183											518
McKinley	149	150	148	148	145	144	884	0	0	0	0	0	0											884
Nottingham	88	90	89	90	91	90	538	0	0	0	0	0	0											538
Oakridge	131	127	120	119	112	103	712	16	8	0	0	0	24											736
Randolph	82	79	75	71	69	64	440	48	16	0	0	0	64											504
Taylor	131	135	130	124	120	117	757	0	8	0	0	3	11											768
Tuckahoe	103	103	92	90	83	80	551	0	8	0	0	4	12											563
Integration Station (Reed)	0	0	0	0	0	0	0	0	78	0	0	0	78											78
<b>ELEMENTARY TOTAL</b>	<b>2,621</b>	<b>2,603</b>	<b>2,552</b>	<b>2,477</b>	<b>2,356</b>	<b>2,317</b>	<b>14,926</b>	<b>560</b>	<b>335</b>	<b>323</b>	<b>112</b>	<b>17</b>	<b>1,347</b>											<b>16,273</b>
<b>MIDDLE SCHOOL</b>														<b>6</b>	<b>7</b>	<b>8</b>	<b>MID</b>							
Gunston														468	486	429	1,383							1,383
Hamm														288	281	289	858							858
Jefferson														460	455	435	1,350							1,350
Kenmore														369	397	375	1,141							1,141
Stratford Program														2	2	9	13							13
Swanson														379	421	377	1,177							1,177
Williamsburg														275	250	300	825							825
H-B Woodlawn														79	81	82	242							242
<b>MIDDLE TOTAL</b>														<b>2,320</b>	<b>2,373</b>	<b>2,296</b>	<b>6,989</b>							<b>6,989</b>
<b>HIGH SCHOOL</b>																		<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>HIGH</b>		
Arlington Community																		4	16	29	42	91		91
Arlington Tech																		150	150	150	150	600		600
Langston <sup>3</sup>																		3	14	26	78	121		121
Stratford Program																		8	4	4	20	36		36
Wakefield																		815	767	752	682	3,016		3,016
Washington-Liberty																		634	686	670	608	2,598		2,598
Yorktown																		591	630	600	615	2,436		2,436
H-B Woodlawn																		107	118	120	123	468		468
<b>HIGH TOTAL</b>																		<b>2,312</b>	<b>2,385</b>	<b>2,351</b>	<b>2,318</b>	<b>9,366</b>		<b>9,366</b>
<b>TOTAL</b>	<b>2,621</b>	<b>2,603</b>	<b>2,552</b>	<b>2,477</b>	<b>2,356</b>	<b>2,317</b>	<b>14,926</b>	<b>560</b>	<b>335</b>	<b>323</b>	<b>0</b>	<b>12</b>	<b>1,347</b>	<b>2,320</b>	<b>2,373</b>	<b>2,296</b>	<b>6,989</b>	<b>2,312</b>	<b>2,385</b>	<b>2,351</b>	<b>2,318</b>	<b>9,366</b>	<b>9,366</b>	
<b>K-12 TOTAL</b>	<b>31,281</b>																							
Career Center - FTE's <sup>4</sup>	459																							
Reed (community services)	60																					PreK-12 Total		32,628

<sup>1</sup> Projections for Fleet do not include assumptions for the reassignment of students associated with Joint Base Meyer Henderson Hall (JBM-HH) and the Child Development Center (CDC). These students will be included in the Spring Update to the Fall 2019 School Year Projections.

<sup>2</sup> Five-year-old Montessori students are reported in Kindergarten. PreKindergarten enrollment previously reported at Drew has been reassigned to the Montessori program in the Henry building.

<sup>3</sup> Langston and Arlington Community membership does not include students over 20 years old. The above projections do not include the adult students at Arlington Community and at Langston.

<sup>4</sup> Career Center Full-time Equivalent (FTE) are not included in the total as the students are already counted in their home school.

<sup>5</sup> PreK estimates are prepared by the Department of Teaching & Learning. The PreK estimates are for the Fall 2019 and this same estimate is used for projections years 2019-28 in the table above. APS provides specialized services (i.e., Speech) to "dual-enrolled" students on a limited basis and invites PreK students to serve as "peer models" in PreK classrooms that are under-enrolled. Although both dual-enrolled and peer model students are counted towards total enrollment, they are not counted toward capacity utilization since they are in attendance in school only intermittently. The Fall projections are subject to program relocation decisions which will be reflected in the Spring update produced in February.

<sup>6</sup> The Department of Teaching & Learning provided total "dual-enrolled" student estimates, but did not provide school-specific estimates.

**Notes:**  
All Special Education students, including those in self-contained classes, all ESOL/HILT/HILTEX students, and all Transition Program students are included within the grade totals at each school. The projections for option schools were calculated differently from neighborhood schools. For certain option schools, either their enrollment was static as of Sept. 30, 2018 or the incoming class was based on the prior year's Spring Update to the Fall Projections.  
Due to rounding, numbers presented may not add up precisely to reflect the absolute figures.

*All Arlington Public Schools (APS) budget and operations decisions are based on the best information available at the time. Staff and community members are reminded that funding forecasts from Arlington County and the state may change, based on many external factors. Similarly, student enrollment and projections are based on the best available information, but are also subject to change due to employment, housing and other economic factors. For these reasons, APS and the Arlington School Board may adjust future budget allocations, staffing and other operations decisions to reflect the existing community and operating landscape.*











## Accuracy of Projections

Projection accuracy is defined as the measure of how close the projected enrollment is to the actual (true) value as reported in September 30 enrollment counts. As a rule, individual school and grade-level projections are subject to more variation than overall school system numbers. Enrollment estimates are more accurate projecting one year ahead than those projecting five and ten years ahead.

The “Review of Projection Methodologies for the Arlington County Government and Arlington Public Schools” prepared by Statistical Forecasting LLC and RLS Demographics suggests that for a fast-growing district such as APS, with many variables that contribute to changing enrollment, +/- 2 percent error rate is acceptable. Using this criterion, for a system with 10,000 students, an error rate of +/- 200 students would be acceptable in Year 1, +/- 400 students would be acceptable in Year 2, +/- 1,000 students would be acceptable in Year 5 and +/- 2,000 students would be acceptable in Year 10.

### Projection Accuracy by Grade for Fall 2018

Grade Level	Projected Enrollment (Spring 2018)	Actual Enrollment (Fall 2018)	Difference from Projection	% Projection Accuracy
PreK	1,304	1,047	-257	80.3%
KG	2,280	2,293	13	100.6%
1	2,274	2,269	-5	99.8%
2	2,159	2,146	-13	99.4%
3	2,214	2,186	-28	98.7%
4	2,216	2,173	-43	98.1%
5	2,214	2,191	-23	99.0%
6	2,144	2,121	-23	98.9%
7	1,903	1,865	-38	98.0%
8	1,972	1,964	-8	99.6%
9	1,946	1,871	-75	96.1%
10	1,774	1,789	15	100.8%
11	1,819	1,739	-80	95.6%
12	1,803	1,782	-21	98.8%
<b>PreK-12 Total</b>	<b>28,022</b>	<b>27,436</b>	<b>-586</b>	<b>97.9%</b>
<b>K-12 Total</b>	<b>26,718</b>	<b>26,389</b>	<b>-329</b>	<b>98.7%</b>

# APPENDIX

## Housing Unit Forecast and Projected Student Yield 2018 – 2028

Forecast Year	Development Name	NET Units	Planning Unit	Projected Student Yield
2018	Pentagon Centre PDSP & Final Site Plan - Phase IB	440	48110	21.9
2018	4707 Columbia Pike	78	37033	45.6
2018	Columbia Hills	229	36020	132.7
2018	The Altaire	453	48110	39.4
2018	Gables N. Rolfe ST	374	24082	48.0
2018	Ballston Quarter Residential Building	406	46080	9.3
2018	1100 Block	12	13090	1.5
2018	672 FLATS	173	13070	8.0
2018	Key & Nash	63	24050	2.3
2019	Potomac Yard - Land Bay D - West (Brittany West)	331	48250	16.5
2019	Gilliam Place	173	37051	121.6
2019	Columbia Pike Village Center	365	37032	41.7
2019	Un-named	4	48171	0.8
2019	Un-named	23	48171	4.3
2020	Potomac Yard - Land Bay D-East (Brittany East)	360	48250	17.9
2020	Axumite Village	36	46010	8.7
2020	Honeysuckle Hills URD	3	16050	1.6
2020	S. Rhodes St.	402	48150	41.0
2021	The Berkeley	257	48960	130.3
2021	750 N. Glebe Road (Mazda Block)	483	13070	41.9
2021	1555 Wilson Blvd	892	24051	32.3
2022	Founder's Square - North Office/Residential	244	46093	22.6
2022	Clarendon West Site #1 - Building 1	247	23210	36.7
2022	2400 Columbia Pike	105	46131	10.5
2022	1801 N Quinn St	210	24051	53.6
2022	6711 Lee Highway (Sun Trust Site)	27	16020	7.3
2022	Crystal Houses III	252	48192	12.5
2022	Pentagon Centre PDSP & Final Site Plan - Phase IA	253	48110	12.6
2023	2515 Lee Hwy	22	23151	2.9
2023	Rosslyn Gateway PDSP (Phase 1 - Residential/Hotel Building)	133	24051	4.8
2023	2000 Clarendon Blvd	90	24081	3.3
2023	Metropolitan Park Six	577	48110	28.7
2023	11th and Vermont Residences South Block -TH	14	13090	1.8
2023	11th and Vermont Residences North Block	12	13090	1.5
2023	11th and Vermont Residences South Block -Garden	58	13090	8.6
2023	Un-named	92	36102	46.2
2023	Un-named	6	23210	1.0

2023	Un-named	225	48260	11.2
2024	4601-4607 Old Dominion Dr	12	23920	2.5
2024	Wakefield Manor	188	24082	23.7
2024	1401 Wilson Blvd - Phase 1 (Residential)	274	24051	9.9
2024	Ballston Station Ballston Central United Methodist Church	119	13090	10.3
2024	Un-named	2	16121	0.8
2024	Un-named	26	16121	6.9
2024	Un-named	39	48171	7.2
2024	Un-named	84	48173	15.1
2024	Un-named	343	24080	12.4
2024	Un-named	25	46102	2.5
2024	Un-named	418	48110	20.8
2025	4000 Fairfax Drive	330	23230	15.3
2025	New Century Center Residential	302	48260	15.0
2025	Red Cross/Trenton St. Residential	32	12080	38.6
2025	Red Cross/Trenton St. Residential	19	12080	3.7
2025	Un-named	6	23220	0.8
2025	Un-named	256	24051	9.3
2025	Un-named	36	37032	4.9
2025	Un-named	20	48170	3.7
2026	The Spire	237	13081	11.0
2026	Clarendon West Site Building 3	333	23210	10.0
2026	Cherrydale	181	23111	5.4
2026	Columbia Pike Plan	447	35100	38.0
2027	East falls church	527	16121	29.1
2027	Ames Building	671	24051	24.3
2027	Columbia Pike Plan	235	46022	23.6
2028	Virginia Square	312	23231	14.4
2028	BALLSTON 8	69	13090	3.2
2028	Crystal City Plan J1	519	48260	25.8
2028	Pentagon City PNC5	393	48110	19.6

Caveat:

Forecasted development has high potential, but not all proposed projects may be built.

Data Source:

Forecast Round 9.1: Produced by Arlington County, CPHD, Planning Division Fall 2017 and approved by MWCOG October 2018.

## Student Generation Rates for 2019-20 School Boundaries by School and Housing Type

Elementary School Level (K-5) <sup>1</sup>	Single Family Detached	Townhome	Duplex	Multi-family Elevator			Multi-family Garden			Condo		Total by School
				Market Rate	Mixed Income	CAF Only	Market Rate	Mixed Income	CAF Only	Elevator	Garden	
Abingdon	0.273	0.154	0.245	0.093	0.067	-	0.016	-	0.244	0.027	0.082	0.110
Arlington Science Focus	0.211	0.148	0.044	0.020	0.075	0.100	0.050	0.000	0.239	0.024	0.018	0.047
Ashlawn	0.258	0.066	0.056	0.029	0.026	0.411	0.030	0.536	-	0.017	0.022	0.067
Barcroft	0.216	0.051	0.000	0.055	-	0.459	0.329	-	0.360	0.075	0.105	0.183
Barrett	0.233	0.132	-	0.024	0.130	-	0.160	0.245	0.432	0.007	0.026	0.146
Carlin Springs	0.162	0.096	0.327	-	0.299	0.291	0.544	-	0.467	0.173	0.134	0.281
Discovery	0.281	0.077	0.111	-	-	-	-	-	-	-	-	0.272
Drew	0.239	0.100	0.211	0.049	0.056	0.472	0.318	-	0.405	0.281	0.057	0.130
Glebe	0.245	0.101	0.109	0.103	-	-	0.161	-	0.429	0.010	0.070	0.183
Alice West Fleet	0.229	0.124	0.196	0.080	-	-	0.099	-	0.054	0.073	0.035	0.129
Hoffman-Boston	0.150	0.154	0.250	0.032	0.041	-	0.112	-	0.273	0.016	0.054	0.043
Jamestown	0.237	0.068	-	-	-	-	-	-	-	-	-	0.232
Long Branch	0.188	0.023	0.055	0.006	0.029	0.287	0.055	0.121	0.153	0.071	0.029	0.103
McKinley	0.286	0.120	0.133	-	-	-	0.082	-	0.135	-	-	0.244
Nottingham	0.324	0.064	-	-	-	-	0.205	-	-	-	0.059	0.307
Oakridge	0.170	0.094	0.127	0.029	-	-	0.110	0.120	0.307	0.025	0.053	0.086
Randolph	0.165	0.129	0.500	0.016	-	-	0.187	0.331	0.475	-	-	0.185
Taylor	0.233	0.095	0.048	0.013	0.078	-	0.035	-	0.202	0.025	0.035	0.141
Tuckahoe	0.251	0.157	0.220	-	0.042	-	0.121	-	-	0.039	0.039	0.202
<b>Total</b>	<b>0.241</b>	<b>0.107</b>	<b>0.173</b>	<b>0.036</b>	<b>0.064</b>	<b>0.337</b>	<b>0.129</b>	<b>0.183</b>	<b>0.287</b>	<b>0.030</b>	<b>0.062</b>	<b>0.115</b>

Middle School Level (6-8) <sup>1</sup>	Single Family Detached	Townhome	Duplex	Multi-family Elevator			Multi-family Garden			Condo		Total by School
				Market Rate	Mixed Income	CAF Only	Market Rate	Mixed Income	CAF Only	Elevator	Garden	
Gunston	0.099	0.041	0.088	0.010	0.021	0.028	0.040	0.032	0.183	0.007	0.023	0.030
Jefferson	0.098	0.051	0.069	0.020	0.017	0.102	0.052	0.075	0.126	0.002	0.024	0.056
Kenmore	0.104	0.063	0.167	0.041	0.087	0.168	0.167	0.209	0.151	0.041	0.065	0.095
Stratford	0.118	0.041	0.004	0.009	0.024	0.080	0.022	0.014	0.086	0.007	0.006	0.031
Swanson	0.131	0.028	0.051	0.010	0.014	0.144	0.042	0.117	0.135	0.005	0.019	0.054
Williamsburg	0.136	0.058	0.060	-	0.028	-	0.030	-	-	0.031	0.018	0.124
<b>Total</b>	<b>0.118</b>	<b>0.042</b>	<b>0.084</b>	<b>0.012</b>	<b>0.027</b>	<b>0.137</b>	<b>0.053</b>	<b>0.073</b>	<b>0.136</b>	<b>0.010</b>	<b>0.023</b>	<b>0.052</b>

High School Level (9-12)	Single Family Detached	Townhome	Duplex	Multi-family Elevator			Multi-family Garden			Condo		Total by School
				Market Rate	Mixed Income	CAF Only	Market Rate	Mixed Income	CAF Only	Elevator	Garden	
Wakefield	0.119	0.049	0.105	0.018	0.025	0.000	0.089	0.075	0.184	0.021	0.026	0.051
Washington-Lee	0.131	0.034	0.115	0.008	0.047	0.185	0.076	0.157	0.210	0.013	0.033	0.064
Yorktown	0.152	0.055	0.030	0.007	0.027	0.063	0.045	0.206	0.102	0.009	0.013	0.074
<b>Total</b>	<b>0.138</b>	<b>0.045</b>	<b>0.101</b>	<b>0.013</b>	<b>0.035</b>	<b>0.142</b>	<b>0.076</b>	<b>0.124</b>	<b>0.161</b>	<b>0.013</b>	<b>0.025</b>	<b>0.062</b>

K-12	Single Family Detached	Townhome	Duplex	Multi-family Elevator			Multi-family Garden			Condo		Total by School
				Market Rate	Mixed Income	CAF Only	Market Rate	Mixed Income	CAF Only	Elevator	Garden	
<b>Total</b>	<b>0.497</b>	<b>0.194</b>	<b>0.358</b>	<b>0.061</b>	<b>0.126</b>	<b>0.617</b>	<b>0.258</b>	<b>0.380</b>	<b>0.584</b>	<b>0.054</b>	<b>0.110</b>	<b>0.229</b>

<sup>1</sup> Rates reflect the updated elementary and middle school boundaries which take effect in the 2019-20 school year.

**Note:**

- A dash "-" is used when a particular housing type with residing students is not present in an individual school attendance boundary.
- Some students were not geocoded for reasons such as (i) they are children of employees who live outside Arlington County, (ii) they reside on Joint Base Myer-Henderson Hall (federal jurisdiction), or (iii) they are homeless or in foster care outside Arlington County, or live at a shelter.

**Source:**

Rates are based on September 30, 2018 APS Enrollments (Grades K-12) and July 1, 2018 Master Housing Unit Database (MHUD) from Arlington County Government, CPHD, Planning Division.



## Alternative Projection Scenarios

PreK-12 enrollment projections almost always differ from the actual number of students enrolled for a given point in time due to changes in social, economic, housing, and demographic trends, as well as the many inherent assumptions in the model.

Recommendation #2 from the Statistical Forecasting LLC, was to eliminate the 7 Alternative Projection Scenarios in the APS Annual Report and instead construct Low/Medium/High Projections that modify variables with greatest variability (B-K ratios, housing pipeline, fertility rates to compute long-term births, etc.). In adherence to the recommendation, low, medium and high projection scenarios are provided in the graphs below to denote the uncertainty involved in making projections.

The alternative projection scenarios include:

- Low Projection - Assumes low births and low absorption of future housing units.
- Medium Projection - Assumes moderate births and moderate absorption of future housing units.
- High Projection - Assumes high births and high absorption of future housing units.

Absorption rate is defined as the expediency at which the market will absorb/occupy the forecasted of residential projects in the housing pipeline. Low absorption assumes it will take a longer time for residential projects to be constructed and occupied. Conversely, high absorption assumes a shorter period for residential projects to be constructed and occupied.

The low/high alternatives are not statistical confidence limits, but instead represent judgments made by Planning Staff as to reasonable upper and lower bounds.

## Low Projection

School Year	Sept. 30	% Change	Net Change
2019	28,495	3.9%	1059
2020	29,262	2.7%	767
2021	29,993	2.5%	731
2022	30,709	2.4%	716
2023	31,319	2.0%	610
2024	31,969	2.1%	650
2025	32,399	1.3%	430
2026	32,849	1.4%	450
2027	33,318	1.4%	469
2028	33,827	1.5%	509

## Medium Projection

School Year	Sept. 30	% Change	Net Change
2019	28,495	3.9%	1059
2020	29,262	2.7%	767
2021	30,018	2.6%	756
2022	30,769	2.5%	751
2023	31,394	2.0%	625
2024	32,111	2.3%	717
2025	32,628	1.6%	517
2026	33,126	1.5%	498
2027	33,639	1.5%	513
2028	34,201	1.7%	562

## High Projection

School Year	Sept. 30	% Change	Net Change
2019	28,495	3.9%	1,059
2020	29,322	2.9%	827
2021	30,090	2.6%	768
2022	30,799	2.4%	709
2023	31,444	2.1%	645
2024	32,182	2.3%	738
2025	32,706	1.6%	524
2026	33,208	1.5%	502
2027	33,764	1.7%	556
2028	34,381	1.8%	617

# Projection Accuracy by School for Fall 2018

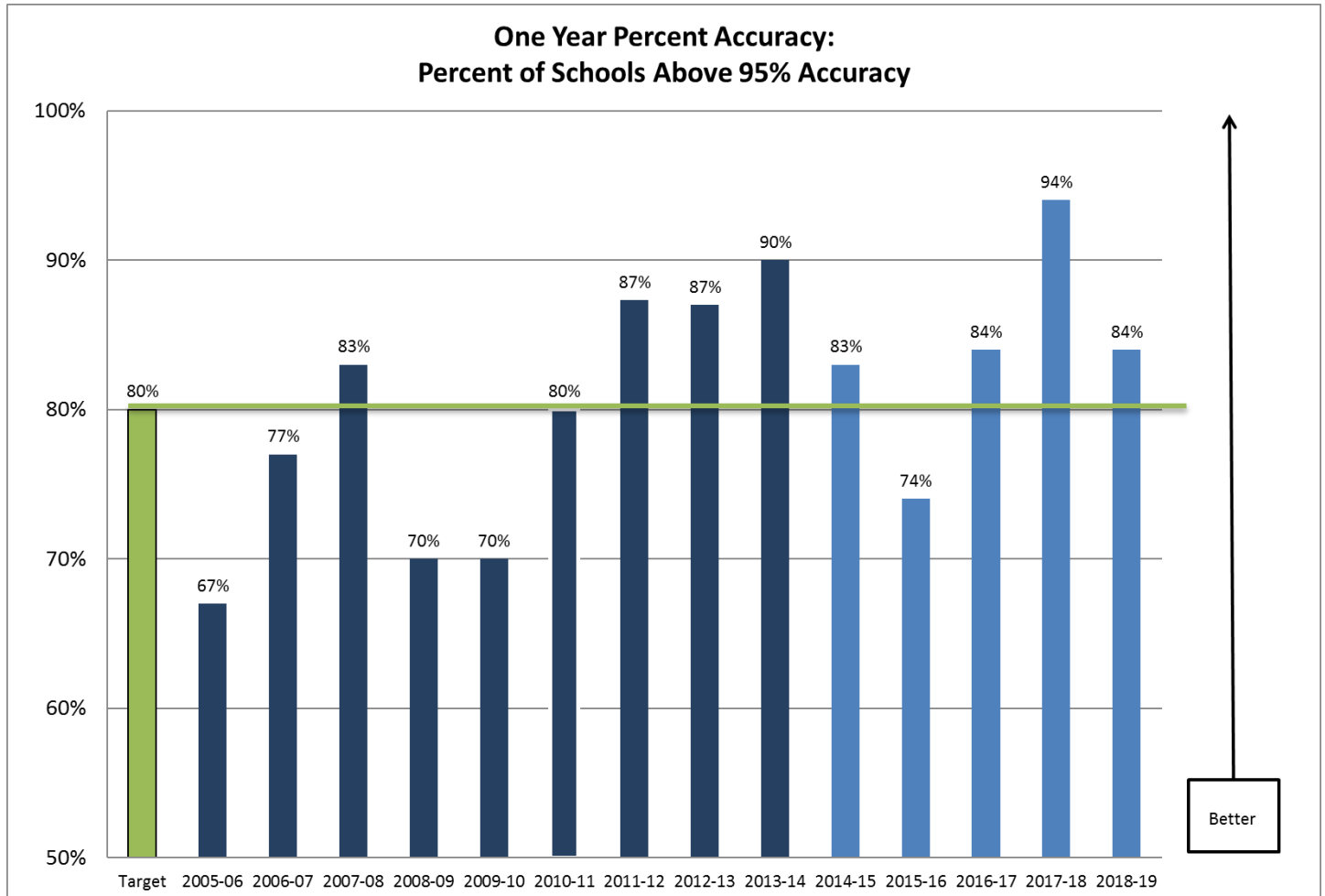
Table 3.  
Pre-K to 12 Projected Enrollment, September Membership and and Prior Year Comparisons  
October 3, 2018

School	2018 Projected Enrollment (Spring Update)	2018			2017		Percent Change 2017 to 2018
		Sep. 30, 2018 Membership	Difference from Projection	% of Projection	Sept. 30, 2017 Membership	Difference Between 2017 and 2018	
Abingdon	688	685	-3	99.6%	662	23	3.5%
Arl. Science Focus	712	683	-29	95.9%	684	-1	-0.1%
Arlington Traditional	572	562	-10	98.3%	540	22	4.1%
Ashlawn	712	779	67	109.4%	696	83	11.9%
Barcroft	436	438	2	100.5%	434	4	0.9%
Barrett	538	560	22	104.1%	543	17	3.1%
Campbell	458	443	-15	96.7%	428	15	3.5%
Carlin Springs	613	624	11	101.8%	618	6	1.0%
Claremont	780	750	-30	96.2%	745	5	0.7%
Discovery	610	594	-16	97.4%	622	-28	-4.5%
Drew	748	679	-69	90.8%	697	-18	-2.6%
Glebe	617	595	-22	96.4%	629	-34	-5.4%
Hoffman-Boston	546	541	-5	99.1%	527	14	2.7%
Jamestown	611	602	-9	98.5%	610	-8	-1.3%
Key	812	726	-86	89.4%	745	-19	-2.6%
Long Branch	626	592	-34	94.6%	592	0	0.0%
McKinley	776	798	22	102.8%	804	-6	-0.7%
Nottingham	529	503	-26	95.1%	527	-24	-4.6%
Oakridge	816	797	-19	97.7%	806	-9	-1.1%
Patrick Henry	693	642	-51	92.6%	665	-23	-3.5%
Randolph	485	458	-27	94.4%	470	-12	-2.6%
Reed	91	47	-44	51.6%	51	-4	-7.8%
Taylor	666	671	5	100.8%	682	-11	-1.6%
Tuckahoe	526	536	10	101.9%	538	-2	-0.4%
<b>Total Elementary</b>	<b>14,661</b>	<b>14,305</b>	<b>-356</b>	<b>97.6%</b>	<b>14,315</b>	<b>-10</b>	<b>-0.1%</b>
Gunston	1,070	1,025	-45	95.8%	987	38	3.9%
H-B Woodlawn	249	244	-5	98.0%	249	-5	-2.0%
Jefferson	1,132	1,138	6	100.5%	1,047	91	8.7%
Kenmore	942	957	15	101.6%	913	44	4.8%
Stratford Program	13	13	0	100.0%	19	-6	-31.6%
Swanson	1,260	1,251	-9	99.3%	1,223	28	2.3%
Williamsburg	1,353	1,322	-31	97.7%	1,252	70	5.6%
<b>Total Middle</b>	<b>6,019</b>	<b>5,950</b>	<b>-69</b>	<b>98.9%</b>	<b>5,690</b>	<b>260</b>	<b>4.6%</b>
Arlington Community*	100	91	-9	91.0%	100	-9	-9.0%
Arlington Tech	236	196	-40	83.1%	113	83	73.5%
H-B Woodlawn	466	454	-12	97.4%	439	15	3.4%
Langston *	104	121	17	116.3%	104	17	16.3%
Stratford Program	37	36	-1	97.3%	33	3	9.1%
Wakefield	2,104	2,059	-45	97.9%	2,010	49	2.4%
Washington-Lee	2,272	2,226	-46	98.0%	2,207	19	0.9%
Yorktown	2,023	1,998	-25	98.8%	1,930	68	3.5%
<b>Total High</b>	<b>7,342</b>	<b>7,181</b>	<b>-161</b>	<b>97.8%</b>	<b>6,936</b>	<b>245</b>	<b>3.5%</b>
<b>Grand Total**</b>	<b>28,022</b>	<b>27,436</b>	<b>-586</b>	<b>97.9%</b>	<b>26,941</b>	<b>495</b>	<b>1.8%</b>

\* These totals do not include special education or limited English proficient students age 22 and above or other students age 20 and above (adult students).

Color codes % of Projections      Below projections      Above projections      Within +/-5 percentage points of projection

## Historical Projection Precision 2005 – 2018



**Note:**  
A +/- 5 percent annual range of error is an accepted standard for individual school projections one year prior. Each year APS targets that 80% of schools have a 95% enrollment projection accuracy or better. Figures rounded to the nearest whole number. School programs are not included in the calculation.

### Projection Precision

Projection precision is defined as the measure of how close each school's accuracy values are to each other. APS targets that 80% of schools have a 95% enrollment projection accuracy or better. Analysis of the Fall 2018 enrollment projections reveal that 84% of all Arlington public schools were 95% accurate or better. This is 4% above the 80% annual target. Please note that boundary changes (i.e., 2015 elementary, 2017 high school) and changes to the options and transfer policy (2018) can impact the accuracy of school level projections as these events disrupt historical enrollment patterns. Each year APS reviews and refines the projection model to produce the most accurate and precise student enrollment projections possible.

## Five-Year Projection Accuracy

The projection accuracy chart below reveals that five years ago, the enrollment projection for the 2018-19 School Year was 27,722 students. This year, five years later, the official count on September 30, 2018, was 27,436; a difference of 286 students or 1.04% from projection. In summary, the projection 5-years prior proved to be 98.9% accurate.

Since 2008-09, enrollment projections five years into the future have varied from the actual enrollment by an average of about 8 percent (see chart below), which meets the acceptable standard of 10 percent error for a five-year forecast. Most importantly, the last column in the chart below shows that the 5-year error rate continues to drop from a high of 20% in 2010 down to 1% starting in 2016.

## Longitudinal Analysis of Projection Accuracy

School Year	Official Count on September 30th	Historical Enrollment Projections											
		One Year Before (Fall Projection)			Two Years Before (Fall Projection)			Four Years Before (Fall Projection)			Five Years Before (Fall Projection)		
		Projection	Accuracy %	Error %	Projection	Accuracy %	Error %	Projection	Accuracy %	Error %	Projection	Accuracy %	Error %
2005-06	18,411	18,237	99.05%	-0.95%	18,817	102.21%	2.21%	DNA	DNA	DNA	DNA	DNA	DNA
2006-07	18,451	18,231	98.81%	-1.19%	17,897	97.00%	-3.00%	DNA	DNA	DNA	DNA	DNA	DNA
2007-08	18,684	18,380	98.37%	-1.63%	17,906	95.84%	-4.16%	18,479	98.90%	-1.10%	DNA	DNA	DNA
2008-09	19,534	18,868	96.59%	-3.41%	18,268	93.52%	-6.48%	17,259	88.35%	-11.65%	18,326	93.82%	-6.18%
2009-10	20,233	20,084	99.26%	-0.74%	19,029	94.05%	-5.95%	17,301	85.51%	-14.49%	16,945	83.75%	-16.25%
2010-11	21,241	20,933	98.55%	-1.45%	20,650	97.22%	-2.78%	18,324	86.27%	-13.73%	17,002	80.04%	-19.96%
2011-12	21,841	22,201	101.65%	1.65%	21,657	99.16%	-0.84%	19,318	88.45%	-11.55%	18,358	84.05%	-15.95%
2012-13	22,613	22,681	100.30%	0.30%	23,051	101.94%	1.94%	21,859	96.67%	-3.33%	19,464	86.07%	-13.93%
2013-14	23,316	23,586	101.16%	1.16%	23,591	101.18%	1.18%	23,074	98.96%	-1.04%	22,485	96.44%	-3.56%
2014-15	24,529	24,153	98.47%	-1.53%	24,402	99.48%	-0.52%	25,006	101.94%	1.94%	23,838	97.18%	-2.82%
2015-16	25,238	25,649	101.63%	1.63%	24,946	98.84%	-1.16%	25,213	99.90%	-0.10%	25,867	102.49%	2.49%
2016-17	26,152	26,366	100.82%	0.82%	26,568	101.59%	1.59%	26,143	99.97%	-0.03%	26,069	99.68%	-0.32%
2017-18	26,941	27,197	100.95%	0.95%	27,331	101.45%	1.45%	26,656	98.94%	-1.06%	26,947	100.02%	0.02%
2018-19	27,436	28,020	102.13%	2.13%	28,076	102.33%	2.33%	27,476	100.15%	0.15%	27,722	101.04%	1.04%
Mean Absolute Percentage Error				1.39%			2.54%			5.01%			7.50%

### NOTES:

1. "DNA" = Projection data not available.
2. Accuracy above 100 percent indicates the projection is over-forecast, conversely an accuracy less than 100 percent indicates an under-forecast of the September 30th official count.
3. A positive (+) error percentage indicates an over-forecast, conversely a negative (-) error percentage indicates an under-forecast of the September 30th official count.
4. A +/- 2 percent annual range of error is an accepted standard for fast growing school districts like Arlington Public Schools.

*All Arlington Public Schools (APS) budget and operations decisions are based on the best information available at the time. Staff and community members are reminded that funding forecasts from Arlington County and the state may change, based on many external factors. Similarly, student enrollment and projections are based on the best available information, but are also subject to change due to employment, housing and other economic factors. For these reasons, APS and the Arlington School Board may adjust future budget allocations, staffing and other operations decisions to reflect the existing community and operating landscape.*

## Glossary of Terms

### **Birth to Kindergarten Capture Rate:**

A birth to kindergarten capture rate is used to convert resident live birth totals into future kindergarteners expected to enroll at APS five years later.

### **Cohort:**

A group of students having a statistical factor (such as the same grade or school level) in common.

### **Cohort transition ratio:**

This uses historic enrollment data to identify trends (of growth or loss) over time. A cohort transition ratio greater than 1.0 indicates the percentage of cohort growth, and a value less than 1.0 indicates the percentage of cohort loss enrollment. The cohort transition rate is impacted by such factors as students moving in or out of a neighborhood or the County, APS student transfers, and other external forces affecting migration.

**Estimate:** calculations of past or present conditions, utilizing counts and known statistics

**Projection:** measures future growth by extrapolating current trends and applying statistical technique

### **Resident Live Births:**

The Virginia Department of Health provided historical birth information through calendar year 2016. The Arlington County Department of Community Planning, Housing and Development provides APS with resident live birth projections from calendar years 2017 through 2028. The resident live birth information received from these sources was used to estimate future kindergarten cohorts entering APS during the 10-year projection timeframe.

### **Student Yield:**

The expected number of K-12 students who are anticipated to reside in newly-constructed housing once the units are built.





Arlington  
Public  
Schools



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