

**ARLINGTON COUNTY-ARLINGTON PUBLIC SCHOOLS**  
**AMAZON PROJECT - STUDENT ESTIMATE**  
DECEMBER 2018

**Research Question and Approach**

- As the Amazon site selection process progressed over the past year, Arlington County and Arlington Public Schools (APS) staff have been assessing the relationship between the Amazon second headquarters and school enrollment.
- To estimate the number of students who will be related to Amazon worker households the analysis considered: how many jobs would be in Arlington, when the jobs would arrive, what percentage of the employees would likely live in Arlington, and how many students their households would be likely to have.
- Amazon proposes to hire 25,000 employees over 12 years with the possibility of growing to 37,500 employees over 16 years. The company will occupy office space in a variety of buildings spanning the Crystal City and Pentagon City submarkets.
- Depending on the type of employer and location of the business within the County, between 15 and 20 percent of employees typically live in Arlington.
- This range was developed based on U.S. Census Bureau, American Community Survey data and CPHD Planning Division Employment Estimates, indicating that countywide, twenty percent of workers both live and work in Arlington; and the Metropolitan Washington Council of Government (MWCOC) regional travel demand model that shows 13.1 percent of work trips ending Crystal City-Pentagon City began at a home located in Arlington.
- The lower percentage in Crystal City-Pentagon City may owe to the types of occupations and salaries in the area, proximity to neighboring jurisdictions, and the abundance of transportation connections to other parts of the region. For purposes of this analysis the 13.1 percent was rounded up to 15 percent to reflect the possibility that more Amazon employees than the average may want to live closer to work.
- In a study of the Amazon project locating in Arlington independent of this work, the Stephen S. Fuller Institute at George Mason University found that between 14.4 and 16.7 percent of Amazon employees will live in Arlington.
- The majority of employees will live in other jurisdictions throughout the region. The region offers a much greater supply and wider variety of housing types and pricing. The region has more than 2 million existing housing units; Arlington has about 115,000 (or about 6 percent of the region's stock).

- For purposes of focusing on the relationship between enrollment and Amazon, this estimate counts all students regardless of current residency or substitution into existing housing units. Many employees who will take jobs at Amazon already live in the area, as the existing workforce is a principal reason Amazon selected Arlington and this region.
- The estimate assumes the proportion of employees who live in Arlington will have access to the full array of existing housing unit types and inventory, and applies the average countywide student generation rate (0.228 per housing unit<sup>1</sup>) across all housing types.

## Results

- At **25,750** Amazon employees hired over **12 years** (2019 to 2030), and 15 to 20 percent of workers residing in Arlington, at the average countywide student generation rate across all housing types, an average of **73 to 98** students per year will be associated with an Amazon worker household.
- At **37,850** Amazon employees hired over **16 years** (2019 to 2034), and 15 to 20 percent of workers residing in Arlington, at the average countywide student generation rate across all housing types, an average of **81 to 108** students per year will be associated with an Amazon worker household.
- As students who will be living in existing and forecasted housing units, the students identified in this estimate are included in the current APS projections described below.

## Considerations for School Planning

- APS September 2018 enrollment was 27,436 students in grades PreK-to-12. Enrollment is projected to grow to 32,700 students by 2027.
- APS students related to Amazon employee households are accounted for in the current APS projections. APS aligns student projections to Arlington County housing unit, household, and population forecasts. This forecast is part of the MWCOG regional population and employment forecast. Existing and future (approved and planned) housing units are the basis for Arlington's population forecast. Arlington County produces an annual housing unit forecast for APS to incorporate students from future housing in the student projections.
- APS is currently working on projections for 2018 and will continue to closely monitor changes in enrollment in the following areas:
  - The types of housing units where APS students live.

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<sup>1</sup> APS County-Wide K-12 Student Generation Rates, Fall 2017

- Rate of new housing development in the County.
  - New student enrollments in certain areas of the county; for example, enrollment in schools closest to Crystal City and Pentagon City.
  - Changes in the birth-to-kindergarten rates.
- APS and ACG staff continue to coordinate with data sharing and collaborations. As changes are observed APS and ACG update and refine student projections and population forecasts, respectively.

### Other Findings and Considerations

- The Fuller Institute study, prepared independently of the County-Schools estimate, found that Arlington schools could expect an average of 69 to 76 students per year from Amazon worker households, or a total of 79 to 85 students per year inclusive of Amazon worker households and indirect effects.
- Office occupancy has not driven the increases observed in school enrollment over the past ten years. From 2008 to 2017 APS enrollment increased from 19,500 to nearly 27,000, an increase of 38%; office occupancy declined from 34.3 million square feet to 33.9 million square feet, a decrease of 1%.
- The majority (97 percent) of new construction housing units anticipated in Arlington through 2045 will either be elevator apartment or elevator condo units, which at 0.08 and 0.05 students per unit (including market rate and affordable units) respectively, have the lowest APS student generation factors in the county<sup>2</sup>. Thus, the availability of single family units (associated with higher student generation factors) is primarily limited to turnover of existing inventory. This lower generation rate is not factored into this estimate. The estimate assumes equal availability across all housing unit types.

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<sup>2</sup> Annual APS Enrollment Projections Report (December 2016), for School Year 2016-2017.

Appendix I: Estimated Students and Jobs by Year

Students by Year at 15% and 20% Employees Residing in Arlington			
Year	New Jobs	15%	20%
<b>2019</b>	400	14	18
<b>2020</b>	1,180	40	54
<b>2021</b>	1,964	67	90
<b>2022</b>	1,439	49	66
<b>2023</b>	2,665	91	122
<b>2024</b>	2,352	80	107
<b>2025</b>	1,643	56	75
<b>2026</b>	2,207	75	101
<b>2027</b>	3,000	103	137
<b>2028</b>	3,000	103	137
<b>2029</b>	2,305	79	105
<b>2030</b>	3,595	123	164
<b>2031</b>	2,100	72	96
<b>2032</b>	3,900	133	178
<b>2033</b>	3,100	106	141
<b>2034</b>	3,000	103	137
	12 yr Avg	73	98
	16 yr Avg	81	108