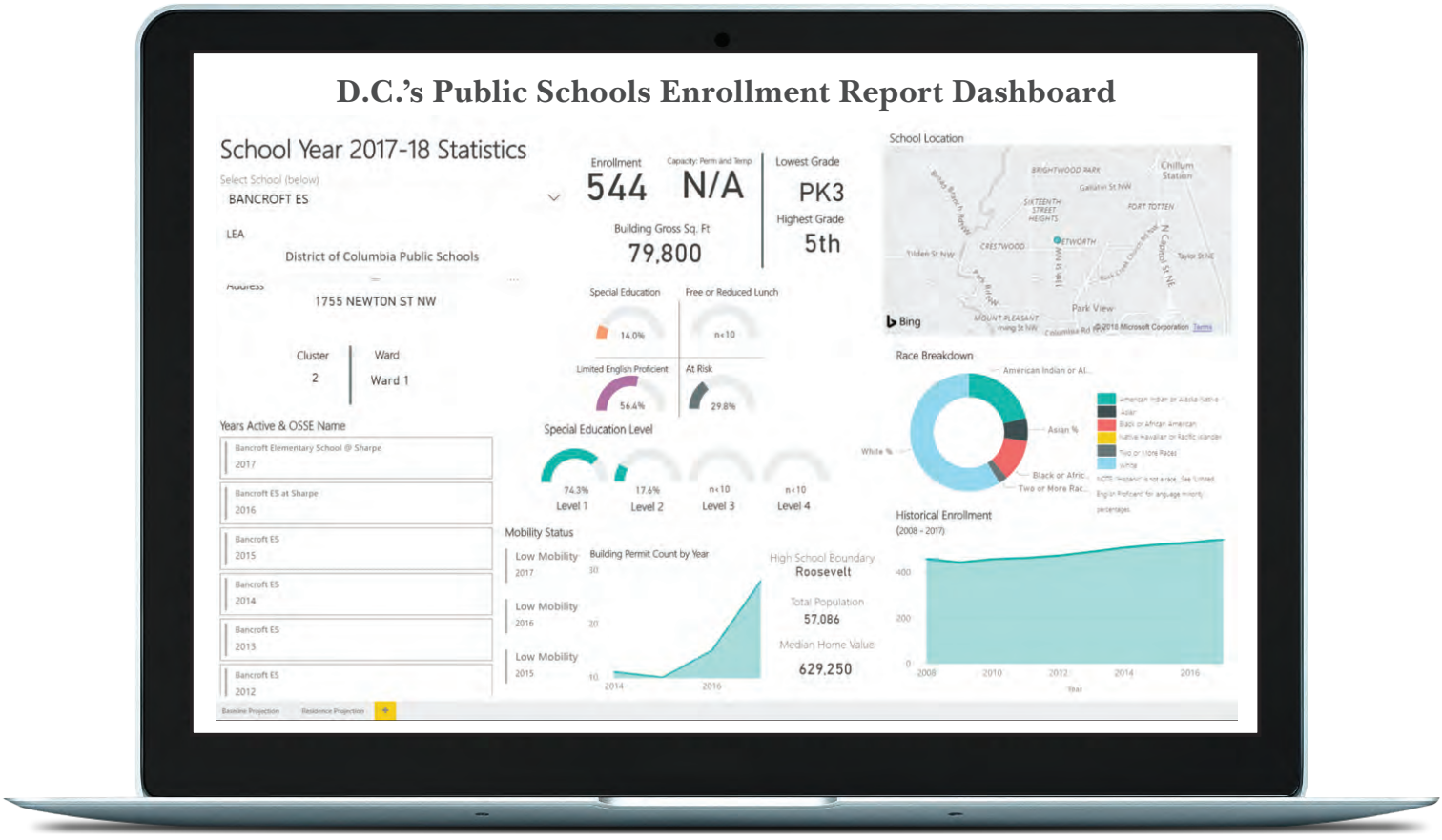
A Study of Enrollment Projections for D.C.'s Public Schools: Assuring Accuracy and Transparency

Conducted by Cooperative Strategies, 21st Century School Fund, and Urban Institute for the Office of the District of Columbia Auditor

September 28, 2018



Office of the District of Columbia Auditor

Kathleen Patterson, District of Columbia Auditor

www.dcauditor.org

September 28, 2018

The Hon. Phil Mendelson, Chairman
The Hon. Mary Cheh, D.C. Councilmember
The Hon. David Grosso, D.C. Councilmember
Council of the District of Columbia
1350 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Dear Chairman Mendelson and Councilmembers Cheh and Grosso:

I am pleased to share **A Study of Enrollment Projections for D.C.'s Public Schools: Assuring Accuracy and Transparency**. The study was requested and funded by the Council of the District of Columbia, at the initiation of D.C. Councilmember Mary Cheh. She asked ODCA to conduct "a study on student enrollment that assesses the District's current methodology against best practices for student enrollment projections and estimates current and projected enrollment numbers for the District's public schools based on the District's demographic trends."

To conduct the study requested by the Council the D.C. Auditor contracted in December 2017 with a trio of consultants led by Cooperative Strategies (CS), a national firm based in Ohio and California with extensive national experience projecting public school enrollment. CS was supported by the Urban Institute and the 21st Century School Fund, local firms with both local and national research and policy experience. The comprehensive report was released at a briefing for members of the D.C. Council followed by a Wilson Building press conference.

Projecting future enrollment is an essential responsibility of school districts that municipalities and districts rely on for planning, budgeting, and evaluation. The District uses next year projections for annual education appropriations for DCPS and charter schools, and long-term enrollment projections by city and for individual schools for educational facility capital planning. The Public Charter School Board references future enrollments when making authorizing decisions for enrollment ceilings and awarding new charters.

The study team focused its work on developing a process to assure accuracy, transparency, and efficiency in the regular development and use of next year and multi-year enrollment projections. The team did a comprehensive review of public school enrollment in the District of Columbia, including enrollment projections over the last several years, both 5- and 10-year projections, a methodology for use by policymakers, and recommendations on a process for completing projections to assure accuracy, transparency and efficiency in their development.

Key findings are:

- D.C. public school enrollment is projected to grow between 12,000 and 17,000 students in the next 10 years.
- Projection methods are least accurate for schools with high mobility rates.
- Projection process can be made more accurate, transparent and efficient.

wide, sector, school, and school by grade—the study team worked to understand the current levels of accuracy of projections and propose the optimal method for accurate, transparent, and efficient development of projections.

The report is presented as a 95-page text, plus several appendices. In addition, information used in the report has been uploaded to an interactive online dashboard, available at www.dcauditor.org. The dashboard includes school-level, baseline projections, and residence projection data, including at-risk percentage, historical enrollment, and mobility status. It is our hope that this wealth of information is of value to the public and other researchers going forward.

The report's recommendations are built into an Enrollment Projections Development Process, a 15-step outline for the Office of the Deputy Mayor for Education, the Office of the State Superintendent of Education and Local Education Authorities, including opportunities for information exchange among local school stakeholders. The research team recommended that the District government—the Mayor and D.C. Council—adopt the projection methodology and 15-step process to assure accuracy and transparency going forward.

As is usual with the reports that ODCA produces in-house, we have included in the final report comments from the Bowser Administration. We were pleased that the Deputy Mayor for Education found the majority of our report to be informative. On those issues that were deemed to need more clarification or revision, we have made adjustments to the report in response. ODCA greatly appreciates the ongoing collaboration with our colleagues at the office of the Deputy Mayor for Education, OSSE, and DCPS on this complex and important topic.

It is our hope that the recommendations presented in this report, many of which are in practice to some extent, are intended to make the overall process more accurate, timely, efficient, and transparent.

Sincerely yours,

Kathleen Patterson
District of Columbia Auditor

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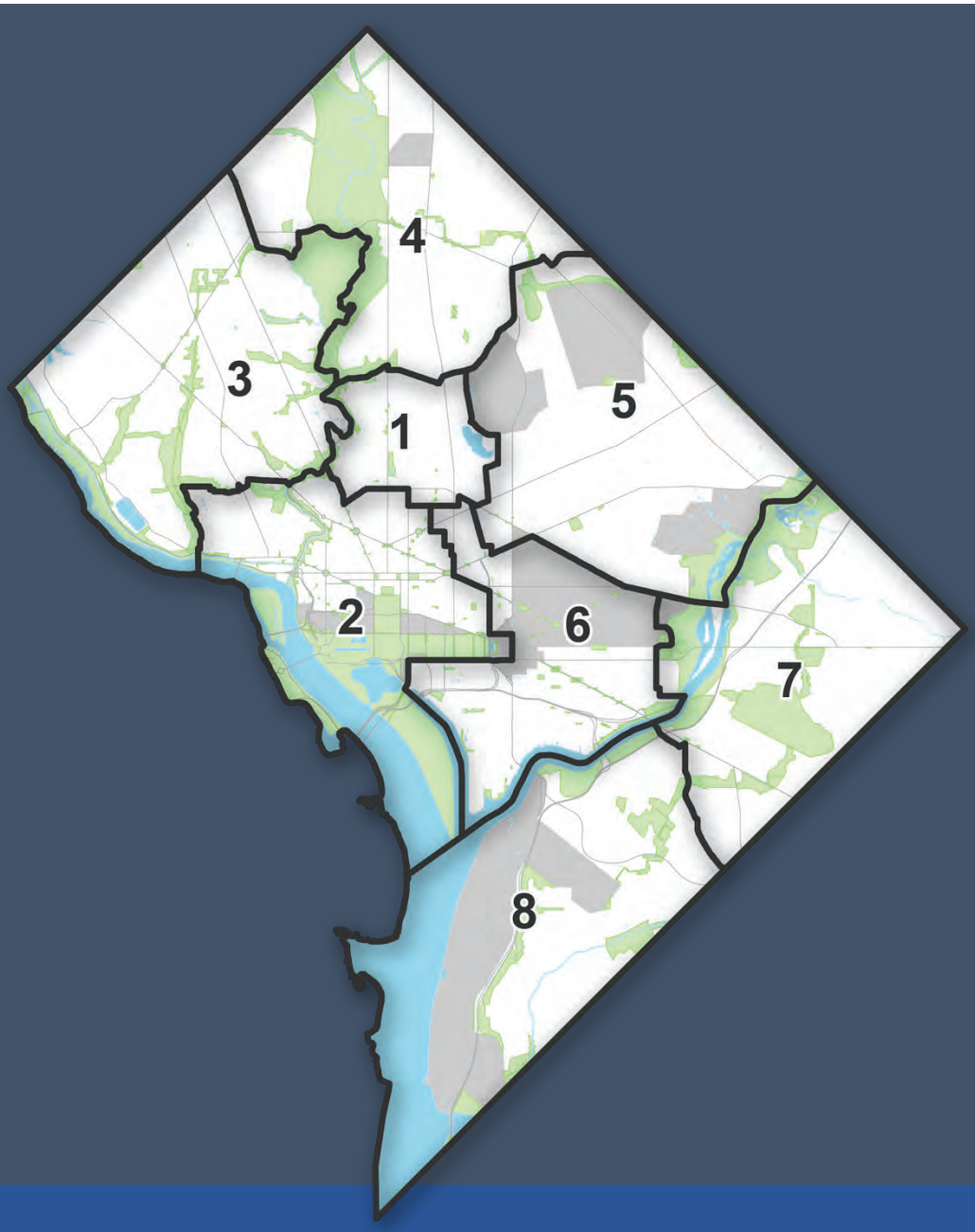


Study of Enrollment in D.C. Public Schools

Including Current Methodology and Future Projections

Kathleen Patterson, District of Columbia Auditor
www.dcauditor.org

Conducted by Cooperative Strategies, 21st Century School Fund, and Urban Institute for the Office of the District of Columbia Auditor

Introduction & Purpose

In January 2018, Cooperative Strategies, in partnership with the 21st Century School Fund and the Urban Institute, was contracted by the Office of the D.C. Auditor (ODCA) to provide a Study of Enrollment in D.C. Public Schools Including Current Methodology and Future Projections, as requested by D.C. Councilmember Mary Cheh (Ward 3). The following tasks were included in this study:

- Review and assess the processes by which DCPS, the Office of the State Superintendent of Education (OSSE), and the Deputy Mayor for Education (DME) have predicted the enrollment in D.C. Public Schools with a focus on school years 2015-16, 2016-17, and 2017-18.
- Research and determine best practices in enrollment projections and assess the extent to which the District has utilized best practices in the last three school years, including how the District of Columbia enrollment projections have been utilized in making budget and facilities decisions.
- Conduct a demographic analysis of the District's population including reasons for and areas of growth and change in recent years, with a focus on school-age populations, including the historic trends in public, public charter, and private school enrollment in the District.
- Provide a 5-year and a 10-year enrollment projection by grade level, pre-school through 12th grade and include a projected breakdown based on best-available data for DCPS, D.C. Public Charter Schools, and D.C. independent schools.
- Propose a replicable methodology for the District government to use going forward to project enrollment with the assumption that such projections will continue to be utilized in budgeting and facilities planning.
- Produce a draft and final written report to be released publicly by ODCA.

On January 24, 2018 the ODCA held a meeting to kick off the study and introduce the Cooperative Strategies Team to key members of various District of Columbia agencies that would be instrumental in providing data and input needed for the study.

Acronyms

Below is a list of acronyms used throughout this report.

ADA: Average Daily Attendance
CIP: Capital Improvements Plan
CPS: Columbus Public Schools (Ohio)
D.C.: District of Columbia
DCMR: District of Columbia Municipal Regulations
DCPS: District of Columbia Public Schools
DGS: Department of General Services
DME: Deputy Mayor for Education
DOF: California Department of Finance
DPS: Denver Public Schools
ELL: English Language Learner
ES: Elementary School
Esri: Environmental Systems Research Institute
GIS: Geographic Information Systems
HS: High School
K-5: Grades kindergarten, first, second, third, fourth, and fifth
LEA: Local Education Authority
LSAT: Local School Advisory Team
MAPE: Mean Absolute Percent Error
MFP: Master Facilities Plan
MS: Middle School
NCES: National Center for Education Statistics
OCFO: Office of the Chief Financial Officer
OCTO: Office of the Chief Technology Officer
ODCA: Office of the D.C. Auditor
ODME: Office of the Deputy Mayor for Education
OFCC: Ohio Facilities Construction Commission
OP: District of Columbia Office of Planning
OSSE: Office of the State Superintendent of Education
OUSD: Oakland Unified School District
PCSB: Public Charter School Board
PCS: Public Charter Schools
PDE: Pennsylvania Department of Education
P/E: Projection to enrollment ratio
PK: Pre-Kindergarten
PK3: 3-year-old pre-kindergarten students
PK4: 4-year-old pre-kindergarten students
SEA: State Education Agency
SEO: State Education Office
SDP: School District of Philadelphia
SPED: Special Education
SRA: School Reform Act
SY: School Year
UG: Ungraded
UPSFF: Uniform Per Student Funding Formula

Definitions

Below is a glossary of terms frequently used throughout this report:

Capacity – The total number of students a school can serve

Enrollment Roll-up ("Roll-up") – the sum of enrollment by school by grade up to LEA or system-wide level

Feeder Patterns – the progression of school assignment for students based on geography (student residence) or program enrollment

Mobility - how many students entered and left the school from year to year

Projection Ratios – the ratios determined based on survival ratios that are applied to current enrollment to develop enrollment projections

Student Mobility - a function of gross mobility, which can be thought of as the extent to which the individuals within student population change from year to year, even if overall enrollment remains steady. It is also defined as a property of a school in the transition between adjacent grades, not of the grades themselves.

Survival Ratios – the percentage of students that move from grade to grade, year to year; birth to kindergarten 5 years later; birth to PK3 3 years later; birth to PK4 4 years later

Overview of Process, Findings & Recommendations

The changing population and demographics in the District of Columbia combined with complex public education student assignment and choice policies create an environment in which it is difficult to predict the future enrollment of children, youth and adults in the District of Columbia. At the same time, projecting future enrollment is an essential responsibility of school districts and municipalities. At the municipal level, public school enrollment affects land use, community use of school buildings and grounds, housing and neighborhood development, and transportation and municipal budgets. At the school level, it affects staffing, program opportunities, and the quality of neighborhood schools and the type and quality of the District of Columbia Public Schools (DCPS) and charter school choices for families.

Projecting future enrollment is a necessary and essential process that school districts rely on for many different reasons. Projections are most often used for planning, particularly for master facilities planning, building new schools or consolidating schools, and for boundary adjustments as populations shift over time. However, enrollment projections in the District of Columbia are also used for annual budgeting, and so have a sector, local education agency (LEA) and school level effect on city, LEA and school budgets. The changes in the District of Columbia and in the public education sector create an environment in which predicting the future enrollment of children, youth and adults is complex.

This study explored the complexities of projecting enrollment for the District of Columbia and proposes processes and methods for next year and five and ten-year projections. To build a recommendation for enrollment projection processes and methodology that are practical and of good value for the unique character of the District of Columbia public education system, it was necessary to navigate the data and history of DCPS and charter schools and try to understand how DCPS and charter school supply and parental demand affect student movement.

We examined current enrollment projection processes and methodologies used in the District of Columbia. We explored other school district and state level practices across the country and analyzed what has worked and what has not worked for the District of Columbia when projecting enrollment in the past. Finally, we propose retaining many aspects of current processes and methods, but also modifying them to better align with local uses and with national best practice standards.

Navigating historical enrollment data proves difficult in the District of Columbia. There are many offices within the District of Columbia that maintain and track enrollment and the governance of the city-wide agencies with these responsibilities has changed over time. For most of the history of public education in the District of Columbia, the state and local functions were one in the same (as they are in Hawaii), and the State Education Agency (SEA) was under the DCPS school superintendent and school board. These entities collected, tracked, reported and projected enrollment. For a short period, the state responsibilities moved into a "State Education Office" SEO, under the Mayor. However, with Mayoral control enacted in 2007, the state public education functions were assigned to the Office of the State Superintendent of Education (OSSE), under the Mayor.

While District officials were unfailingly cooperative in sharing data throughout this project, the data often lacked consistency in school names and school identification numbers, and in what data is rolled up and provided in reporting. This can be a result of constant change and movement in a system that does not currently have a central repository to track all the historical influences on student populations maintained and used by various groups. That is, school names in each audited enrollment file are not consistent and significant time was spent identifying

standardized school names to analyze historical school enrollment data; student data with addresses at time of enrollment was not available for 10 years (only 5 years of data was available in a consistent manner); 2008-09 and 2009-10 audited enrollment needed to be aggregated from the student data provided.

Enrollment projections developed for Master Facilities Plans were developed by a variety of consultants over the past 20 years. A consistent model was not established, and it was difficult to determine was data was used to develop the enrollment projections.

This study examines several factors that have influenced enrollment and public-school participation rates over the years. These include:

- Changing housing and population trends, particularly in attracting young adults of child-bearing ages
- New construction and consolidation of schools, including boundary changes
- Program / Curriculum changes
- Increases in charter school enrollment and facilities
- City policies, for choice, student assignment, governance, and funding

Process / Background

There are many different approaches to conducting enrollment projections, but almost all best practices are founded in the cohort survival method, which analyzes historical enrollment and the percentage of students who move from grade to grade, year to year, historically. Processes used in the District of Columbia have also been based in this method which has produced two [2] main types of projections. First, by school by grade (summed into sector and District projections, and second, by grade only (usually rolled up by sector and then by District). The Office of Planning also produces age level projections that assist in the projections process.

Projections are conducted for the next year and used as part of the city's annual budget cycle. In conversations with comparable districts that share characteristics similar to those in the District of Columbia such as demographic composition; existence of public, charter, and independent schools; and school choice options, we have found this to be a common practice for setting district budgets and preparing for resource allocation one year in the future. Multi-year projections are conducted typically as part of master facilities planning studies, again a common practice among other comparable districts. One-year projections that are used for budgeting assist in determining DCPS and public charter operating budgets and the charter school facilities allowance, while multi-year projections help determine capital improvement budgets and Public Charter School Board decisions on school openings. Data sets, projection sub-sets and review methodology are detailed in the *Enrollment Projection Methodology* section of the report.

A review of comparable districts across the country was conducted to seek out common methodologies, uses for projections, or results of projections. State level officials were also interviewed to determine how their processes for projecting enrollment were similar to or different from the District of Columbia. Overall, we determined that the complexities of data and the influences on enrollment are common in districts of this size, though the level of influence of each factor varies. Most of the districts' primary purposes for conducting enrollment projections are for budgeting purposes; this holds true for state-level projections. Some districts conduct a review process with principals and other local school administrators, but such reviews are determined by the funding formula that each district uses when setting budgets for each school or whether the district has a school-level budgeting process.

This study also conducted a comparison of enrollment projections to actual audited enrollments for the one-year projections. Comparisons for DCPS were completed for school years 2014-15 through 2017-18 and for PCS schools 2016-17 through 2017-18 (due to limited data availability). We compared projections versus audited enrollments in the aggregate, then by Ward, by year, by grade level, and by individual school. The comparison does not attempt to determine specifically why errors occur. Detailed results can be found in the Accuracy of Current Projections section of this report, but key findings include:

For DCPS Schools:

- The magnitude of projection errors varies by ward, by year, and by grade
- The direction of the projection errors (too high or too low) also varies by ward, by year, and by grade in ways that often do not correspond to the magnitude of the errors

For PCS Schools:

- PCS schools had about the same absolute projection errors across wards and showed reductions in projection error from the 2016-17 to the 2017-18 school years
- PCS schools produced projections that skewed high in the 2017-18 school year

Five and ten-year projections were analyzed and or compared simply by reviewing the process and methodology conducted in prior master facilities plans and actual (audited) enrollment was measured against each projection. Key findings at the district level are that most projections were fairly accurate one-year out, but error rates increased significantly for future years.

Supply and demand factors influence student movement and therefore impact enrollment projections, particularly at the school level. Government policies influence demand by regulating location, condition, capacity and access to publicly funded schools. In districts with limited school choice, enrollment projections are simplified because the district can control where students attend. Matching supply to enrollment demands at the school level in districts that have a history of opening and closing schools and where students are attracted to schools, not necessarily located where they live, makes it challenging to accurately project enrollment at the school level.

Demand-side factors, specifically in this study, are neighborhood characteristics that influence enrollment trends across the District. Characteristics include demographics, economic indicators, housing (and changes in housing), cultural changes over time, and college attainment. These are certainly not all the factors that affect demand but represent some that can be measured and can contribute to the enrollment projection process.

Overview of Findings

An enrollment projection blind study was conducted using historical enrollment data from two time periods: 2008-09 through 2015-16, and 2008-09 through 2016-17. The intent of the study was to apply different projection ratios, utilizing only the mathematical approach of projecting (commonly referred to as the “science”), to compare the output from each set of enrollment projections to the actual audited enrollment by school for both DCPS and PCS. When applying no expert analysis into adjusting projection ratios (ratios determined based on survival ratios that are applied to current enrollment to develop enrollment projections, commonly referred to as the “art”), the results determined that for DCPS, accuracy for the largest number of schools was attained by using a 3-year simple average of survival ratios. For PCS, utilizing the weighted average of the 2 most recent years of survival ratios yielded the highest number of accuracies by school, but only slightly higher than using a 3-year simple average of survival ratios.

The "art" of enrollment projections is the ability to apply expert analysis to adjust projection ratios based on outside factors that are not easily measured. This study details the complex set of data that can influence school attendance, and that can be accounted for in most cohort survival methods. Because of these factors, accuracy in projecting enrollment is difficult to achieve as the sample size of projections becomes smaller, i.e. system-wide versus school level. Therefore, it becomes essential to determine when the "art" of projections is best applied. This is best captured in studying and statistically analyzing what matters most in predicting factors that introduce the most error in enrollment projections using the cohort survival method.

The objective when identifying the most influential factors of student enrollment, is to determine how this information can be used to modify enrollment projections toward greater accuracy. Key findings of what matters most include:

- For DCPS schools, the single most important characteristic that predicted projection error was the school's student *mobility,* or how many students entered and left the school from year to year
- For PCS schools, *a recent sudden shift* in stated school capacity was associated with projection error – in other words, a cohort model cannot anticipate future effects of recent changes in school capacity

Student mobility is defined as a function of *gross* mobility, which can be thought of as the extent to which the individuals within student population change from year to year, even if overall enrollment remains steady. It is also defined as a property of a school in the transition between adjacent grades, not of the grades themselves. This form of student mobility would be expected to have some relationship to the amount of uncertainty in projections. If a school has been experiencing "churn" in the past, then future enrollments could be likely to depart from the trajectory of past enrollments, subject to changes in the rate that students are moving in, the rate that they are moving out, or both. In contrast, a school with smaller levels of student mobility can be expected to have future enrollments that are more stable and easily predicted by cohort survival models, even if the schools have had similar progression ratios in the past.

Sudden shifts in stated school capacity could include changes in facility capacity due to renovations, new construction, or location changes; and in the case of PCS schools, a change in the enrollment ceiling.

Overview of Recommendations

Today the Office of the Deputy Mayor for Education has sufficient authority to oversee the schedule, policies, and procedures to be followed by OSSE and LEAs in this process. While some elements of the process are centralized, there are other elements that are appropriate for a specific agency or agencies based on their expertise and authority. The recommendations presented here—some of which are in place or in place to some extent—are intended to make the overall process more timely, efficient, transparent, and accurate. The graphic on the following pages outlines the recommended enrollment projections process.

Enrollment Projections Development Process

Steps 1 - 9

Maintain 10 Years of Historical Data

Including race, ethnicity, gender, special education, language, address, in a longitudinal database and compile it by school, LEA, grade, and subgroups using OSSE designated school numbers and names.
Responsible agency: OSSE

Collect Last 15 Years of Birth Data

Birth data by address of the mother from the Department of Health and aggregate the data by elementary attendance boundary.
Responsible agency: OSSE

Identify Geographic Feeder Patterns

Identify geographic feeder patterns that define the assignment of students from school to school.
Responsible agency: OSSE

Calculate Cohort Survival Ratios

Calculate a cohort survival ratio of students from birth to kindergarten and grade to grade, year to year for the 10 years of historical data.
Responsible agency: OSSE

Create Baseline Next Year, Five Year, and Ten Year Enrollment Projections

Apply the projection ratios to each grade, by school, by year for ten years, producing the baseline next year, five year, and ten year enrollment projections by school
Responsible agency: OSSE

Calculate Student Mobility Index

Using student level data, calculate the mobility index of students in, students out and students staying.
Responsible agency: OSSE

Post Enrollment Projections For Every School along with all Supporting Data

Each year, post on OSSE website and provide each LEA with next year and five-year baseline enrollment projections for every school, along with historic enrollment data, survival ratios, live birth counts, supply data (including but not limited to capacity, square footage, facility condition, enrollment ceiling/caps, school location, program offerings, grade configuration, planned school/program closings and openings, and boundary changes), demand factors (including but not limited to residential building permits, lottery data), and mobility index in an interactive web-portal like the DCPS portal currently in use.
Responsible agency: OSSE, DCPS, and PCSB

Develop System-Wide Enrollment Projections to Align Post-Baseline Projections to

Develop system-wide enrollment projections (DCPS and PCS schools combined) by grade, by year, for ten years to be used to align post-baseline adjusted enrollment projections by school to.
Responsible agency: OSSE

DCPS / PCSB Review Baseline Projections, Make and Document All Adjustments

Using the interactive web portal described in Step 7, DCPS and PCSB reviews OSSE's baseline projection by school by grade and subgroup and adjusts the next year by grade and by school level baseline projections based on a review of information provided in the web portal; with DCPS and PCSB documenting the reasons for all requested adjustments on the web portal.
Responsible agency: DCPS and PCSB

Enrollment Projections Development Process

Steps 10 - 15

DCPS and PCSB share their preliminary adjusted projection

DCPS and PCSB share their preliminary adjusted projection (baseline plus adjustments and documented rationale) with the DCPS local schools and charter LEAs, who will be able to review the preliminary projections along with all data provided on the interactive web portal, including, but not limited to historic enrollment data, survival ratios, live birth counts, supply data (including but not limited to capacity, square footage, facility condition, enrollment ceiling/caps, school location, program offerings, grade configuration, planned school/program closings and openings, and boundary changes), demand factors (including but not limited to residential building permits, lottery data), and mobility index and baseline enrollment projection of their school and either propose documented adjustments to the preliminary adjusted enrollment projection of DCPS and PCSB or accept the preliminary adjusted enrollment projection from their LEA central office.

Responsible agency: OSSE

ODME Rolls Up Final Approved Projections Compares them to Baseline and System-Wide Enrollment Projections

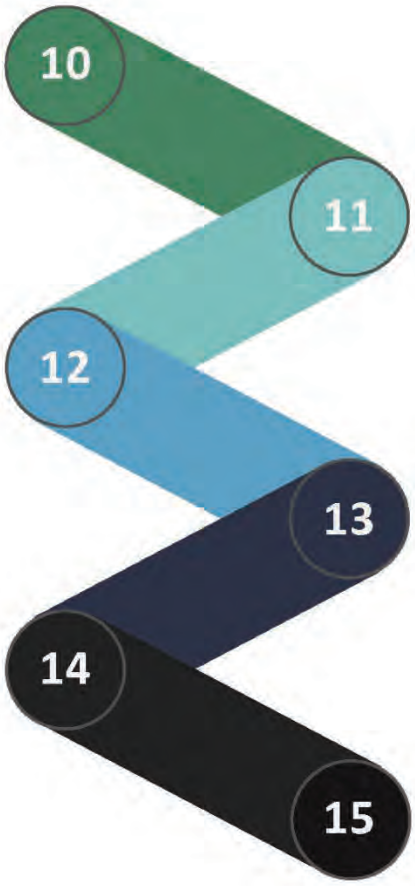
ODME rolls up the DCPS and PCSB projections from the final school and DCPS/PCSB approved projections (Step 11) and compares them to OSSE's baseline (Step 5) and OSSE's system-wide enrollment projections (Step 8).

Responsible agency: ODME

ODME Certifies the Next Year Projection

ODME certifies the next year projection and provides comments on the five-year projection.

Responsible agency: ODME



DCPS and PCSB submit their final next year and five-year projections to the ODME

Following the back and forth between DCPS and local schools and PCSB and LEAs, DCPS and PCSB submit their final next year and five-year projections to the ODME.

Responsible agency: DCPS and PCSB

ODME Reconciles Enrollment Projections with System-Wide Enrollment Projections

ODME works with DCPS and PCSB to reconcile the projections by grade, with the system-wide enrollment projections (Step 8)—making sure they align with the system-wide enrollment projections by grade, and by subgroup, by grade developed in Step 8 as much as reasonably possible.

Responsible agency: ODME, DCPS, and PCSB

Annual Enrollment Projection Review

Enrollment projections should be compared with the actual audited enrollment system-wide by grade ; and by school, by grade; as well as for special populations. This is important in continued improvement of the enrollment projection process. As discrepancies are found, it is good practice to try to determine the root of the error so that it may be considered in subsequent updates.

Responsible agency: OSSE

Historical Enrollment

Historical district-wide enrollment has increased by nearly 21,000 students over the past ten [10] years. Most notable is the elementary (K-5) enrollment with an increase of 11,000 students in that same time period. Most of this growth has been in PCS schools.

Historical Enrollment - District-wide

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	7,067	8,211	9,581	10,778	11,428	11,855	12,040	12,309	12,529	12,718
K - 5	29,329	29,513	30,669	31,277	32,969	34,812	36,785	38,397	39,825	40,425
6 - 8	13,456	13,361	13,137	13,096	13,388	13,426	13,512	13,516	14,024	14,595
9 - 12	17,584	17,591	17,589	16,683	17,517	16,187	16,590	16,716	17,113	18,274
Other	3,212	3,516	3,958	4,859	4,880	6,652	6,448	6,372	6,462	5,476
K - 12	**60,369**	**60,465**	**61,395**	**61,056**	**63,874**	**64,425**	**66,887**	**68,629**	**70,962**	**73,294**
Grand Total	**70,648**	**72,192**	**74,934**	**76,693**	**80,182**	**82,932**	**85,375**	**87,310**	**89,953**	**91,488**

Source: OSSE Audited Enrollment

Historical Enrollment - PCS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	2,820	3,604	4,346	5,382	5,858	6,290	6,425	6,477	6,700	6,921
K - 5	8,865	9,677	10,638	11,184	12,496	13,499	14,698	15,154	16,175	16,873
6 - 8	6,248	6,179	6,087	6,188	6,577	6,438	6,466	6,861	7,246	7,758
9 - 12	5,249	5,860	6,013	5,757	6,604	5,985	6,002	5,945	6,602	7,051
Other	2,069	2,313	2,282	3,051	3,139	4,353	4,264	4,468	4,768	4,790
K - 12	**20,362**	**21,716**	**22,738**	**23,129**	**25,677**	**25,922**	**27,166**	**27,960**	**30,023**	**31,682**
Grand Total	**25,251**	**27,633**	**29,366**	**31,562**	**34,674**	**36,565**	**37,855**	**38,905**	**41,491**	**43,393**

Source: OSSE Audited Enrollment

Historical Enrollment - DCPS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	4,247	4,607	5,235	5,396	5,570	5,565	5,615	5,832	5,829	5,797
K - 5	20,464	19,836	20,031	20,093	20,473	21,313	22,087	23,243	23,650	23,552
6 - 8	7,208	7,182	7,050	6,908	6,811	6,988	7,046	6,655	6,778	6,837
9 - 12	12,335	11,731	11,576	10,926	10,913	10,202	10,588	10,771	10,511	11,223
Other	1,143	1,203	1,676	1,808	1,741	2,299	2,184	1,904	1,694	686
K - 12	**40,007**	**38,749**	**38,657**	**37,927**	**38,197**	**38,503**	**39,721**	**40,669**	**40,939**	**41,612**
Grand Total	**45,397**	**44,559**	**45,568**	**45,131**	**45,508**	**46,367**	**47,520**	**48,405**	**48,462**	**48,095**

Source: OSSE Audited Enrollment

Summary of Enrollment Projections

The following enrollment projections were developed as part of this study for the District of Columbia:

- Baseline enrollment projections by school
- System-wide enrollment projections
- Enrollment projections based on residence

It should be noted that the overall historical enrollment between the baseline by school and elementary boundary (residence) projections differ (due to being different data sets) and therefore the enrollment projections presented also differ. In addition, aggregating the data differently will yield different results. Details of these processes can be found in *Section 7: Historical / Projected Enrollment*.

Baseline Enrollment Projections by School

Baseline enrollment projections by school were developed for the DCPS and PCS schools in the District of Columbia using the official audited enrollment by school, and by grade from 2008-09 through 2017-18 provided by OSSE (https://osse.dc.gov/enrollment). The enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used to project DCPS school enrollment and a 2-year weighted average of survival ratios was used to project PCS school enrollment. Live birth counts were used to project kindergarten enrollment; PK, Adult, UG, and SPED UG were kept flat at the current 2017-18 enrollment.

Projected Enrollment - System-wide (Baseline)

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718
K - 5	40,361	40,493	40,775	41,159	41,304	41,530	41,743	41,811	41,881	41,735
6 - 8	15,448	15,885	16,067	15,934	15,978	16,007	16,037	16,129	16,251	16,585
9 - 12	17,935	18,147	18,456	19,288	19,765	19,869	19,886	19,902	20,017	20,128
Other	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698
K - 12	**73,744**	**74,525**	**75,298**	**76,381**	**77,047**	**77,406**	**77,666**	**77,842**	**78,149**	**78,448**
Grand Total	**92,160**	**92,941**	**93,714**	**94,797**	**95,463**	**95,822**	**96,082**	**96,258**	**96,565**	**96,864**

Source: Cooperative Strategies

System-wide Enrollment Projections

Based on the system-wide enrollment projections, using the total student population, it is anticipated that enrollment will continue to increase over the next ten years by approximately 12,099 students, a majority of that growth anticipated in the first five [5] years. The system-wide enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used. Live birth counts were used to project PK and kindergarten enrollment; Adult, UG, and SPED UG were kept flat at the current 2017-18 enrollment. These are the projections that the post-baseline enrollment projection by school roll-up should be reconciled to.

Projected Enrollment - 3 Year Simple Average - System-wide

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,942	13,154	13,245	13,087	13,087	13,087	13,087	13,087	13,087	13,087
K - 5	40,671	41,039	41,386	41,938	42,193	42,437	42,696	42,784	42,833	42,691
6 - 8	15,794	16,713	17,449	17,584	17,758	17,880	17,967	18,112	18,289	18,671
9 - 12	18,333	18,714	19,120	20,458	21,633	22,513	23,163	23,422	23,580	23,662
Other	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476
K - 12	**74,798**	**76,466**	**77,955**	**79,980**	**81,584**	**82,830**	**83,826**	**84,318**	**84,702**	**85,024**
Grand Total	**93,216**	**95,096**	**96,676**	**98,543**	**100,147**	**101,393**	**102,389**	**102,881**	**103,265**	**103,587**

Source: Cooperative Strategies

Enrollment Projections Based on Residence

Enrollment projections were developed based on the residence of where students (DCPS and PCS) live within DCPS elementary boundaries. Enrollment projections based on boundary of residence are useful for planning school facilities (master facility planning) and/or attendance boundaries. Student data by address points for school years 2013-14 through 2017-18, provided by OSSE, were geocoded and aggregated to the DCPS elementary boundaries. The enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used. Live birth counts were used to project kindergarten enrollment; PK and Adult were kept flat at the current 2017-18 enrollment.

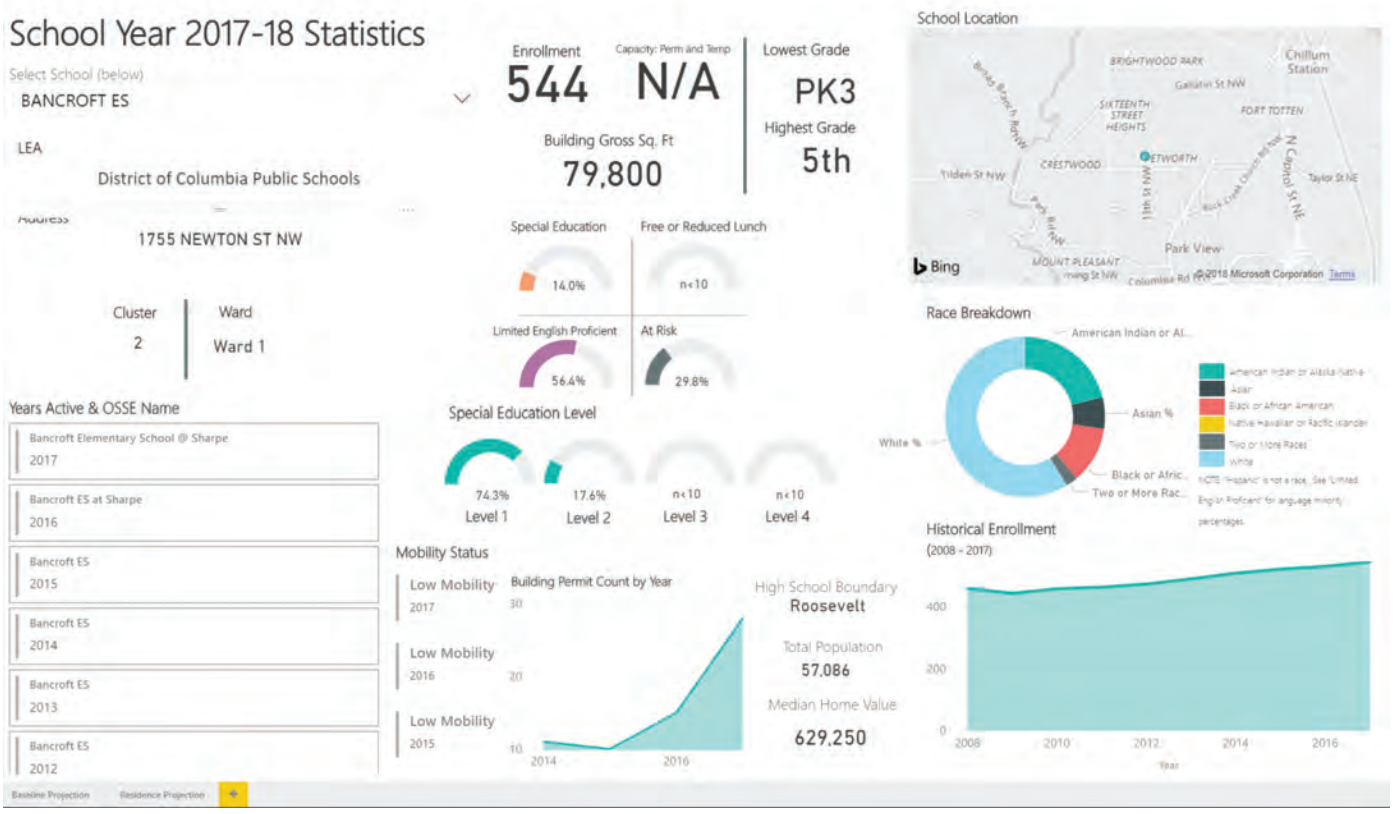
Projected Enrollment - System-wide (based on Residence)

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727
K - 5	41,179	41,809	42,440	43,287	43,720	44,133	44,447	44,594	44,664	44,457
6 - 8	16,117	17,165	18,001	18,264	18,600	18,898	19,213	19,494	19,860	20,378
9 - 12	19,119	19,699	20,342	22,139	23,534	24,612	25,439	25,979	26,333	26,766
Other	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
K - 12	**76,415**	**78,673**	**80,783**	**83,690**	**85,854**	**87,643**	**89,099**	**90,067**	**90,857**	**91,601**
Grand Total	**94,093**	**96,351**	**98,461**	**101,368**	**103,532**	**105,321**	**106,777**	**107,745**	**108,535**	**109,279**

Source: Cooperative Strategies

Interactive Dashboard

All information used in this process has been placed in an interactive dashboard, which is available at *dcauditor.org*. Due to FERPA privacy requirements, any subgroup information that is representative of less than 10 students or encompasses all students may have been suppressed.



School level data available on the dashboard includes:

Background Data Sheet

- LEA
- Address
- School location map (includes program locations over the past 10 years)
- Cluster
- Ward
- Years open
- Total enrollment (2017-18)
- Historical enrollment (2008-2017)
- Capacity (permanent and temporary)
- Building square footage
- Racial makeup
- Special education percentage*
    - Levels 1-4*
- Free or reduced lunch percentage*
- Limited English proficiency (LEP) percentage*
- At risk percentage*
- Mobility status
    - 2015-2017
- High school boundary
    - Building permit counts by year
    - Total population (2017)
    - Median home value (2017)

Baseline Projection Sheet

- Feeder pattern information
- Birth data (2009-2017)
- Historical enrollment (2008-2017)
- Survival ratios
- Baseline projected enrollment (2018-19 – 2027-28)

Residence Projection Sheet

- Historical and projected enrollment (2013 -14 – 2027-28)
- Births by boundary (2003-2016)
- Survival ratios

*Denotes data that is subject to suppression due to FERPA requirements.

Section 1: Dynamic City and Schools

It is important to understand the extent of demographic and policy change that has shaped the landscape of the city and public education over the last two decades in the District of Columbia. The interplay of the personal priorities and preferences of parents and guardians and the public education policy environment created and sustained by the District Government occur in the context of a changing city. Private interests of parents and public concerns of families and government cause broader demographic shifts and are affected by them.

Washington D.C. - Demographic Overview

From its founding in 1790, the District of Columbia's population grew – often rapidly – to its historic high of 802,000 in the 1950 Census (Figure X). This growth was followed by a half century of population decline from 1950 to 2000, and then a resumption of population growth after 2000.

The period of population decline began with the movement of many white residents to the suburbs in the 1950s and 1960s, a pattern that occurred in numerous older, eastern US cities. By 1970, D.C.'s black residents started to leave as well. While some blacks may have been following the middle-class suburbanization trend, the continuing decline in living conditions created by public and private underinvestment in D.C.'s black communities forced many to seek opportunities outside the city. This trend continued through the next several decades, with predominantly black neighborhoods east of the Anacostia river losing over 66,000 residents between 1980 and 2000. By the 2000 census, D.C.'s population reached a modern low of 572,000 persons.

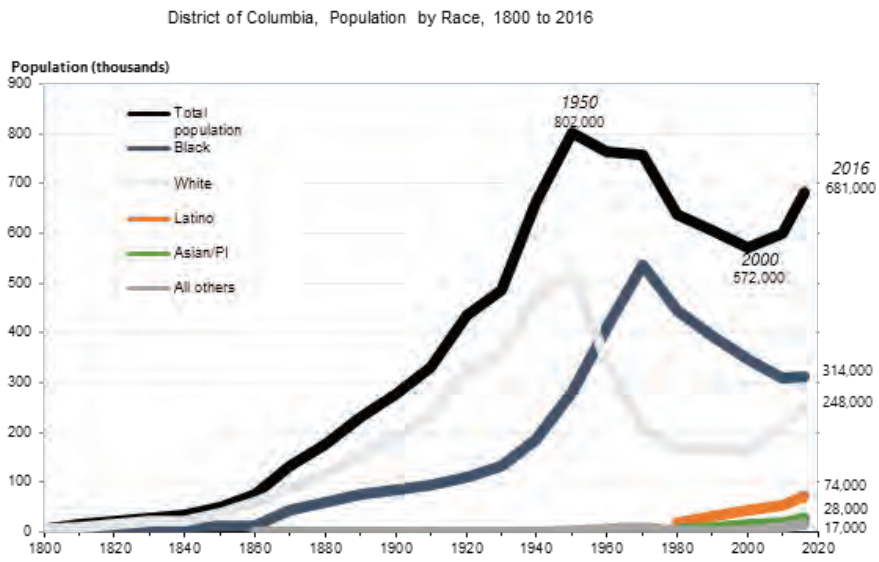


Figure 1 District of Columbia Population by Race

The District's population decline ended around 2000 and the city entered a new period of growth driven, to a large extent, by the arrival of persons in the millennial generation in increasing numbers (Tatian and Lei 2013), part of a national trend of younger adults being drawn to cities. The Great Recession of 2007 – 2009, which hit many other parts of the country harder than the Washington area, led many young people to seek out job opportunities in D.C. In addition, immigrants from Central and South America, Asia, Africa, and the Caribbean contributed to the city's population growth. While D.C. has not historically been a center for immigration to the U.S., since the 1980s the Washington region has emerged as one of the country's largest new gateway destinations for immigrant communities (Singer 2004). While most of the increase in foreign-born persons in the region has been in the suburbs, D.C.'s immigrant population has grown steadily as well. While immigrants represented only 4 percent of the city in 1970, today they make up 14 percent of D.C.'s population. Many immigrants arrived during the 1990s, a period of increasing migration to the U.S. that was enabled by raised immigration caps[1] but also a

result of other factors, such as unrest and civil wars in Central America and economic malaise and political instability affecting some African countries (Macharia 2011).

During the initial ten years of D.C.'s new growth, however, the city's black population continued to fall. While the steep population losses of the 1970s, 1980s, and 1990s stopped or even reversed in many majority black neighborhoods in northeast and southeast, increasing demand for housing by new residents led to rising rents and home prices in northwest city neighborhoods, such as Columba Heights, Shaw, and U Street, that had been centers of the black community (Tatian and Lei 2013, Tatian and Lei 2014). Rising costs forced many long-time residents to search for lower cost housing in other parts of the city, elsewhere in the Washington area, or even outside the region entirely (Tatian, Hendey, and Bogle 2017). And although, according to the latest U.S. Census estimates, the city's black population is starting to rise again, the growth is attributable to an increase in foreign-born blacks. Immigrants from sub-Saharan Africa have been a growing share of migrants to the U.S. since 2010 and the Washington region has emerged as one of the top destinations for African immigrants, particularly those from Ethiopia (Connor 2018, Macharia 2011).

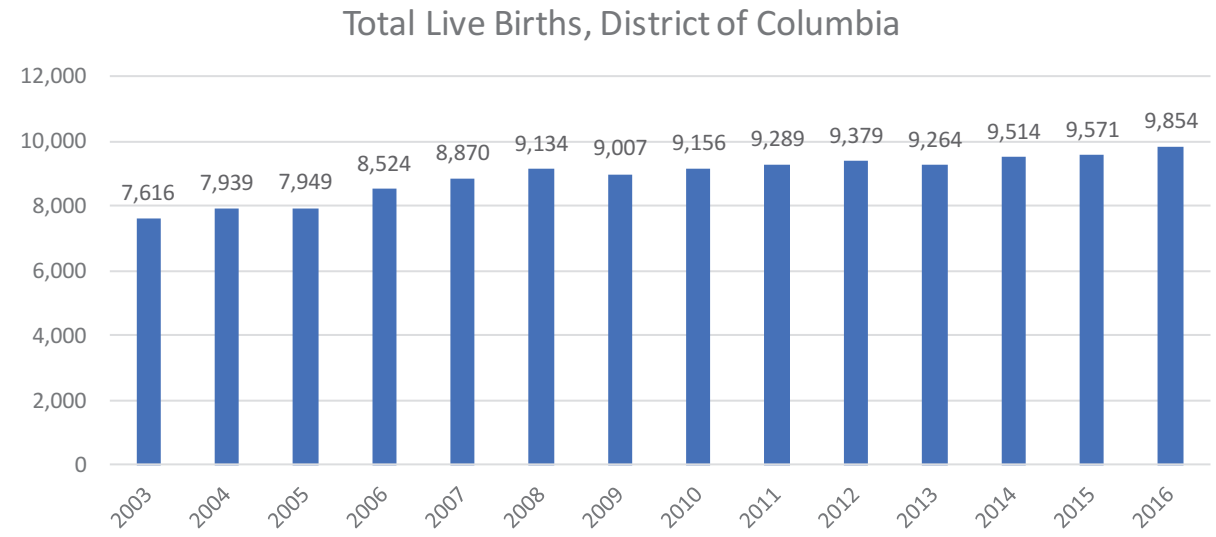


Figure 2 Total Live Births, District of Columbia

Additionally, natural population growth, that is, total births to mothers in the City, has increased over the past 14 years (figure 2). Between 2000 and 2003, total births remained steady at between 7,500 to 7,700. Births increased to 7,939 in 2004 and then jumped to 8,524 in 2006. A consistent increase in births has continued since then, reaching 9,156 total births in 2010 and a recent high of 9,854 in 2016, 25 percent higher than the number of children born in 2000. The increase in births was not uniform across the entire city, however. Births increased in all City wards except for Ward 3, where they have been at roughly the same level (between 800 and 900 births per year) since 2003. The largest increases in births were in wards 4, 5, and 6. These three wards accounted for two-thirds of the total increase in births in the city since 2000.

As a result of these trends, the City has reached a recent peak population of 681,000, according to 2016 U.S. Census estimates. Despite the overall population growth, the change in school-age children has followed different trajectories (figure 3). The period from 2000 to 2010 saw declines in children ages 5 to 9 and 10 to 14 years, falling by 9,200 and 5,000 persons, respectively, while the number of children under 5 years and 15 to 17 years remained relatively constant. It was during this period of child population decline, from 2000 to 2010, that DCPS was closing

schools, due to overall child population decline and charter development that was capturing a growing share of the declining school-age population.

Between 2010 and 2016, the numbers of children ages 0 to 9 grew by over 19,000, with the largest increase being children under 5 years, who increased by almost 11,000. Nevertheless, the number of children 15 to 17 years fell by 1,400 over this same period and the population of children 10 to 14 years increased by only 1,800. Among all four groups, only children under 5 years currently have a larger population than they did in 2000.

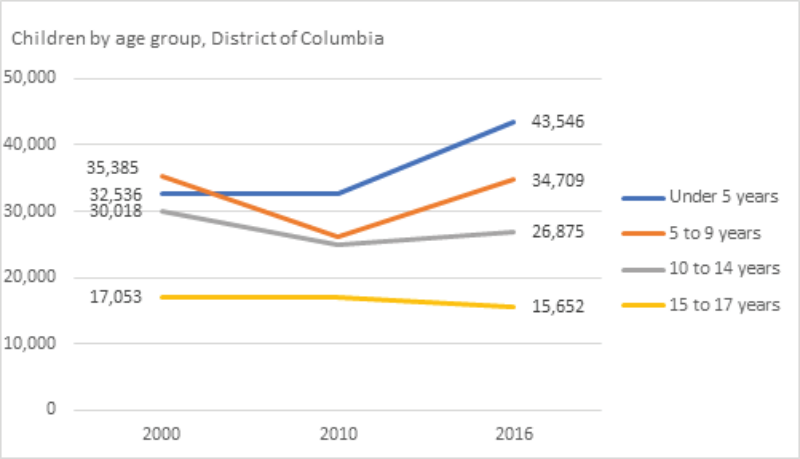


Figure 3 Children by Age Group, District of Columbia

Although, as noted above, births to D.C. mothers were also rising between 2004 and 2016, the increase in children under 5 is much too large to be explained by the growth in children born in the City alone. Only 2,891 more births occurred between 2012 and 2016, when compared with 2006 to 2010, not enough to account for the 11,000 net increase in under 5 year olds between the two periods. Changes in people migrating in and out of the City, both domestically and internationally, are therefore a major part of the explanation for the growth in younger children in D.C. since 2010.

The City's demographic changes have had a significant impact on public school enrollment. Enrollment in DCPS schools had been declining steadily between 1970 and 1990, falling from approximately 146,000 to 80,700 students, paralleling the drop in the District's overall population (figure 4)[2]. Between 1990 and 1995, DCPS public school enrollment leveled off and then started a small downward dip coinciding with the introduction of the first charter schools in the District in the 1996-97 school year. Total public school enrollment in DCPS and PCS schools fluctuated over the next few years and then dropped to a low of 72,192 in 2009-10. Since then, total public school enrollment has grown steadily, increasing to 91,488 students in the 2017-18 school year.

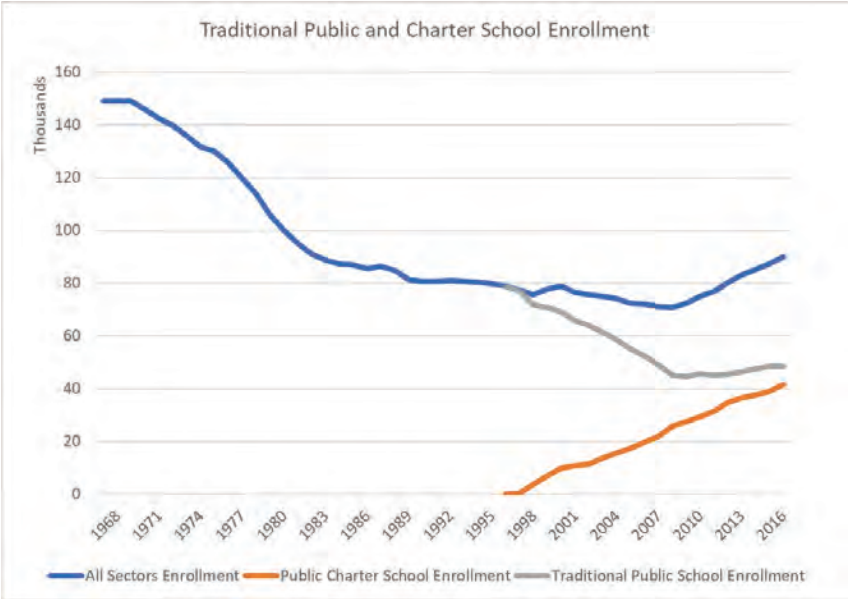


Figure 4 Traditional Public and Charter School Enrollment

Most of the renewed public school growth was in the charter schools, which increased enrollment from 25,251 to 34,674 students between 2008-09 and 2012-13. During this same period, enrollment in DCPS schools was relatively flat, hovering between 45,397 and 45,508 students. Starting in 2013-14, however, enrollment in DCPS

schools began to rise as well, increasing to 48,095 students by 2017-18. PCS enrollment has almost reached parity with traditional public schools, with 43,393 students enrolled in charters in 2017-18.

The data presented in this section illustrates the complex relationship between demographic changes and school enrollment. Although public school enrollment tends to track with the overall population, changes in specific age groups do not correlate directly with trends in aggregate population or births. Therefore, additional demand and supply factors need to be examined to improve the reliability of school enrollment forecasts.

Demand and Supply Factors Affecting Enrollment Projections

In the study, it was theorized that there are factors of parental demand and school supply that could assist the District in projecting enrollment. At the same time, some neighborhood factors and government policy decisions were identified that may affect the relationship of parental demand with school supply and therefore may impact the accuracy of school-level enrollment projections.

Historical student enrollment trends are a primary factor for projecting enrollment for the next year; this natural progression is built in the cohort survival model. However, it was theorized that nonlinear changes in parental demand and in school supply associated with public sector decision making may cause school enrollment to deviate from the past and predictably result in enrollment projection errors at the school level.

Demand-side factors include parental preferences that are hypothesized to affect the enrollment choices (long- and short-term) for the school age population within each DCPS high school attendance zone. The key indicators of parental demand were schools that ranked as a first choice in the lottery and schools with utilization over 100 percent. Supply factors considered include the number, size, and character of schools available in the City to District of Columbia children, youth and adults and the public inputs likely to affect the actual quality of the school. The neighborhood factors thought to be related to parental demand and school supply were the education level of the population, median home sale prices, the total population within a DCPS high school catchment area and the number of new construction permits.

The relationship between supply and demand is highly influenced by government action and public policy including everything from student assignment policy and how it operates to where schools are opened, closed, and expanded, and for whom. The key laws controlling the relationship of parental demand to school supply include the School Reform Act (SRA) enacted by Congress which established two authorizing entities--the DCPS Board of Education and the Public Charter School Board (PCSB) (now only the PCSB). Another historical action affecting public education has been the capital investing of public school facilities, and the funding of the charter Facilities Allowance, with the School Modernization Financing Act of 2006 and policy associated with the property management of current and former public school facilities. Finally, the Public Education Reform Amendment Act (2007), put DCPS and the state public education functions under the control of the Mayor and created an Office of the Deputy Mayor for Education to advance the Mayor's education plans and priorities.

Parental Demand	Neighborhood Factors	School Supply
Desire to control your child's peer groups • selective admissions • selective participation • selective location • student achievement • student diversity Perception of school quality • teachers/principal • educational programs • school climate • student supports Building condition	Education level of population Median home sale price Total population in catchment area # Permits for new construction	• School siting • PCSB authorizations • PCSB management of enrollment ceilings • DCPS school openings, closings, expansion • PCS school openings, closings, expansion • Private school supply Educational inputs • Program types • Staffing • Budget • Facilities
Policy Mediators		
Charter Schools Act of 1996 D.C. School Reform Act (1996) School Modernization Financing Act of 2006 Public Education Reform Amendment Act (PERAA) 2007 Public School Disposition (2004 amendment to SRA) D.C. Student assignment policy		

Parental Demand Factors

The My School D.C. lottery data captures applicant preferences for schools. The number of students who list a certain school as their first choice in the school choice application reflects the parental and student preference for selective school environments for their children. The total number of students that list a certain school as their first choice is aggregated from My School Lottery student-level data and is illustrated in the table below. The designation of "selective admission" is based on whether the school has a selective application requirement to enroll in the school—only DCPS schools can have selective admissions. The measure of "selective location" is based on median home sale price, from the D.C. Office of Tax and Revenue, where schools are located in high school feeder areas of Wilson, Roosevelt and Eastern, with average home sales greater than $620,000. The measure of achievement where 50% or more of the students scored at 4 or higher (proficient or advanced) on the math test of the PARCC standardized test in 2016-17. The measure of diversity is whether there are more than two races represented in double-digit percentages. Finally, whether the school offers a "high demand" educational program is measured by whether it has a thematic program in STEM (Science, Technology, Engineering, and Math); dual language; academically advanced, such as International Baccalaureate programs; or has a specialized pedagogy that defines its program, such as Montessori, or expeditionary learning, for examples.

Parent Demand Factors						
Top 25 choice schools 2017-18 Lottery	# 1st Choice Lottery	Selective Admissions	Selective Location	Achievement >50% +4 on PARCCM Math	At Least 2 Race Groups >10%	Special Program
Washington Latin PCS – Middle School	741		X	X	X	X
School Without Walls High School	649	X		X	X	X
Mundo Verde Bilingual PCS	482				X	X
Creative Minds International PCS	426		X		X	X
School-Within-School	423		X	X	X	X
Duke Ellington School of the Arts	421	X	X		X	X
Washington Yu Ying PCS	415			X	X	X
KIPP DC – College Preparatory PCS	403					X
Two Rivers PCS at 4th Street	379		X		X	X
DC Bilingual PCS	336				X	X
Brent Elementary School	318		X	X	X	
Oyster-Adams Bilingual School (Oyster)	301		X	X	X	X
BASIS DC PCS	296			X	X	X
Benjamin Banneker High School	284	X		X	X	X
School Without Walls @ Francis-Stevens	272				X	
Lafayette Elementary School	264		X	X	X	
Elsie Whitlow Stokes Community Freedom PCS (Language Program)	249				X	X
Wilson High School	245		X		X	
DC Prep PCS – Benning Elementary	244			X		
KIPP DC – Promise Academy PCS	232			X		
McKinley Technology High School	232	X				X
Capitol Hill Montessori School @ Logan	229		X	X	X	X
Ross Elementary School	227			X	X	
KIPP DC – Heights Academy PCS	226			X		
Janney Elementary School	225		X	X	X	

The number of students who enter the My School D.C. application and lottery is increasing each year, and so are the schools that were listed as a first choice, although the most popular schools tend to be consistent across years. In the 2016-2017 lottery, 222 schools were listed as a student's first choice at least once. The number for the 2015-2016 lottery is 214, for 2014-2015 it is 200. (see Appendix A)

The cohort survival ratios, the percentage of students who move from grade to grade, year to year, inherently account for parental efforts to select their children's peers—including parental preferences for peer groups based on academic achievement, income, or racial or ethnic diversity. The schools with these attributes are in greater demand than schools that do not exhibit these selective qualities.

These demand-side factors are not meant to capture all the factors that affect demand for schools but are intended to represent factors that are measured and available to those adjusting baseline enrollment projections. Other important factors such as changes in parent preferences, changes in knowledge about the lottery, and the availability of options outside of DCPS and PCS could also affect demand.

Neighborhood Factors

There are many ways to define neighborhood characteristics. This focus identified factors that were most likely to affect parents' decisions on housing and school and could be calculated annually. These characteristics cover topics including neighborhood demographics, economic indicators and neighborhood housing changes and capture the dynamic population, demographic, economic, and cultural changes in D.C. neighborhoods that could influence demand. Specifically, total population and college attainment rate were used as measures of neighborhood demographics and culture changes. Median home sale price and building permit counts were calculated to capture the economic and housing activity trend.

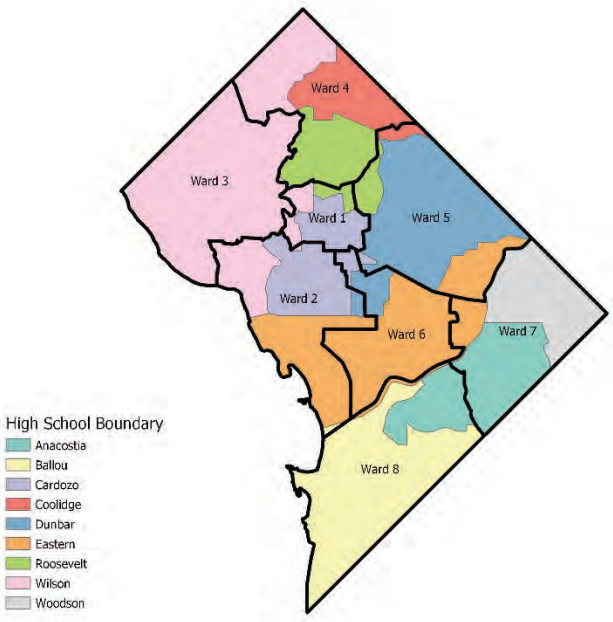


Figure 5 High School Boundaries and Wards

Median home sale price and building permit, available by street address, were aggregated to the High School Attendance zone. There are 9 high school attendance zones in the District of Columbia. Figure 5 shows the relationship between DCPS high school attendance zones and the City's 8 wards. The total population data is from the American Community Survey (ACS) data, available by Census tract, and was weighted (where census tracts crossed high school attendance zone boundaries, weights were used to apportion the five-year tract-level ACS data into attendance zones based on the share of a tract's population in each zone) to get the appropriate high school attendance zone count of population and college attainment rate.

These factors were attached to each school in the high school attendance zone, including PCS schools. Although eligibility for enrollment in a PCS school is not defined by school attendance zones, neighborhood characteristics are hypothesized to still affect PCS student populations.

Total Population Within High School Attendance Boundaries

The table below illustrates the total population living within each of the defined current DCPS high school attendance boundaries, with boundaries defined at the census tract level. Please note, there are seven additional application high schools that do not have defined attendance boundaries, including Benjamin Banneker; Columbia Heights Education Campus; Duke Ellington School of the Arts; McKinley Technology; Phelps Architecture, Construction, and Engineering; Ron Brown College Prep; and School Without Walls.

High School Boundary	2014 Total Population	2015 Total Population	2016 Total Population
Anacostia	53,150	55,411	57,457
Ballou	52,066	53,942	54,931
Cardozo	113,943	116,638	116,553
Coolidge	33,569	34,300	34,140
Dunbar	77,165	79,598	83,077
Eastern	78,071	79,448	81,735
Roosevelt	57,236	56,655	57,086
Wilson	129,703	131,192	132,150
Woodson	38,834	40,300	41,881

Figure 6 Total Population by High School Boundary Source: Urban Institute tabulation of American Community Survey 5 Year Estimates

College Attainment Rate

The table below illustrates the college attainment rate (calculated by dividing the total population with college degree divided by total population) in each high school attendance zone.

High School Boundary	2014	2015	2016
Anacostia	0.10	0.10	0.11
Ballou	0.08	0.08	0.08
Cardozo	0.53	0.54	0.55
Coolidge	0.28	0.29	0.30
Dunbar	0.28	0.31	0.33
Eastern	0.49	0.51	0.53
Roosevelt	0.28	0.30	0.32
Wilson	0.60	0.60	0.60
Woodson	0.09	0.10	0.10

Figure 7 College Attainment Rate by High School Boundary Source: Urban Institute tabulation of American Community Survey 5 Year Estimates

Median Home Sale Price ($)

The table below illustrates the median home sale price in each high school attendance zone.

High School Boundary	2014	2015	2016	2017
Anacostia	284,000	290,000	330,000	307,275
Ballou	259,000	275,000	297,000	305,000
Cardozo	505,250	506,850	530,000	549,900
Coolidge	470,000	480,000	500,000	510,000
Dunbar	480,000	513,555	537,500	533,500
Eastern	550,000	569,900	594,750	620,000
Roosevelt	575,000	610,000	620,000	629,250
Wilson	840,500	857,000	900,000	905,000
Woodson	252,950	275,000	301,000	289,950

Figure 8 Median Home Sale Price by High School Boundary Source: Urban Institute tabulation of home sales price from D.C. Open Data

Building Permit Counts

The table below illustrates the building permit counts (the total number of new construction permits) issued in each high school attendance zone. Due to data limitations, the new construction permits include both residential and commercial construction; however, changes in total new construction permits can still be a good proxy for new economic activities.

High School Boundary	2014	2015	2016	2017
Anacostia	40	73	18	58
Ballou	13	20	73	78
Cardozo	36	38	33	45
Coolidge	55	8	7	12
Dunbar	159	164	92	178
Eastern	32	42	73	55
Roosevelt	11	10	15	28
Wilson	45	53	44	47
Woodson	39	82	90	33

Figure 9 Building Permit Counts by High School Boundary Source: Urban Institute tabulation of building permit records from D.C. Open Data

School Supply Side Factors

School supply-side factors can have a significant impact on enrollment trends and enrollment projections. Key factors that measure school supply are the number of schools, capacity, condition, and perceived quality of schools. School supply is particularly influenced by government policy and practice. Where the school district strictly assigns students to schools based on their home address and, when necessary, provides transportation to get them to their assigned schools, LEAs can control their enrollment. The predictability of this type of system is best illustrated in the City by differing participation rates across DCPS neighborhood schools. In the Wilson High School feeder pattern, 79% of students attending a public elementary school attend their in-boundary neighborhood school. In contrast, elementary schools in the Dunbar High School feeder pattern average only 18% participation.

Ideally, school districts should carefully manage supply to ensure their building capacity is not too great or too small to educate the student population of their districts. School districts regularly project enrollments based on births and historical enrollment trends and align their school supply to those changes. In the District of Columbia, there has been considerable variability in supply. The Table below shows the number of public schools in the District of Columbia, by sector from 2008 to 2017.

Summary of School Supply Change 2008 to 2017, DCPS and Charter Schools

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	change
DCPS # schools	134	129	126	123	121	110	110	112	114	114	-20
Charter # schools	93	96	91	98	104	108	112	115	118	120	27
TOTAL DCPS and PCS Schools	**227**	**225**	**217**	**221**	**225**	**218**	**222**	**227**	**232**	**234**	**7**
DCPS schools closed	0	-2	-1	-1	-2	-11	-2	0	0	0	-19
Charter school or grades closed	-1	-4	-5	-5	-2	-5	-7	-8	-1	0	-38
DCPS schools opened	0	0	0	0	0	0	0	2	2	0	4
Charter school opened	7	2	1	5	5	8	3	5	5	1	42

Figure 10 Data Source: Master Longitudinal Data Set; and PCSB report on school closings https://www.dcpcsb.org/report/charter-school-growth-closures; "Better Schools for All Students: DCPS' Consolidation and Reorganization Plan" January 2013

The total number of schools, which appears relatively stable, masks the level of variability in supply, as it relates to which schools are opened or closed and which of the over 60 local education agencies is opening or closing schools.

The table above summarizes key supply changes in the District of Columbia's public schools since 2008. There have been 80 public schools closed—42 DCPS schools closed and 38 charter schools closed, including charter schools where grades were dropped. However, DCPS only opened 4 schools since 2008 and the charter schools opened 27 schools since 2008.

Public schools are not the only schools serving elementary and secondary age children and youth in the District of Columbia. D.C. has a robust private school sector, with an estimated 65 independent and religious private schools reported by the Association of Greater Independent Schools, the Archdiocese of Washington, AIMS - Association of Independent Maryland and DC Schools, and the D.C. Opportunity Scholarship Program. (A list of these schools is included in Appendix A.) The enrollment of the private schools, as provided by OSSE is 15,171 students, including District and non-District residents[3]. There was not a definitive list of D.C. located private schools or District student resident enrollments available from OSSE. While Ward 3 has no public charter schools, 22 of the private schools in 2017 were located in Ward 3.

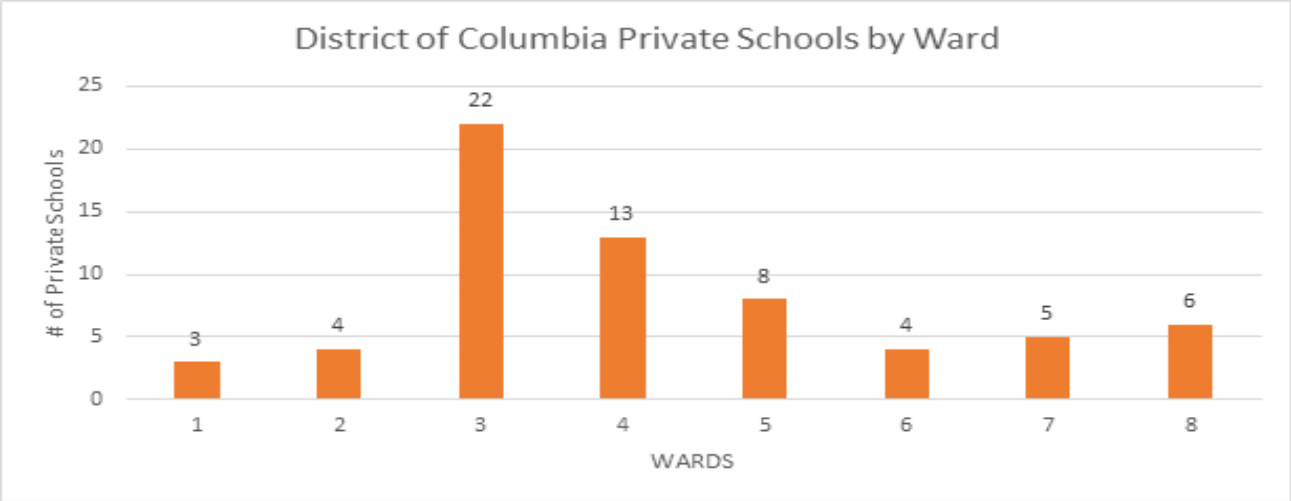


Figure 11 Privates Schools by Ward, District of Columbia

In addition to supply factors affecting the number and type of school provider, there are also school capacity and PCSB enrollment ceiling factors at play in District of Columbia projections. Kindergarten through 12th grade enrollment was at its lowest in 2008-09 but has been rising since. After a reduction of capacity in DCPS, which fluctuated with use of swing space and closings, it has increased 13 percent. Since data became available in 2013, charter school capacity has increased 30 percent.

Through its chartering authority, the PCSB may authorize up to twenty LEAs per year as well as determine the number of students each charter LEA may enroll. While the Public Charter School Board can determine enrollment ceilings for individual charter LEAs, the District has no control over the overall enrollment ceiling of the charter sector. In 2014-15 and 2015-16, there was relatively close alignment of building capacity and enrollment ceilings. However, as illustrated in the table and graph below, in 2016-17, there is a divergence of building capacity and enrollment ceilings. The enrollment ceiling the PCSB has approved for charter schools in 2017-18 is 53,440 students, approximately 10,000 seats over the actual enrollment of the charter schools and 12% higher than the current enrollment capacity of the charter school facilities.

Enrollment, Capacity, and Charter Ceilings 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DCPS enrollment	45,397	44,559	45,568	45,131	45,508	46,367	47,520	48,405	48,462	48,095
Charter enrollment	25,251	27,633	29,366	31,562	34,674	36,565	37,855	38,905	41,491	43,393
Total enrollment	**72,656**	**74,201**	**76,944**	**78,704**	**82,194**	**84,945**	**87,389**	**89,325**	**91,969**	**93,505**
DCPS schools capacity	59,608	58,898	63,848	60,870	60,272	56,373	58,207	59,702	61,349	63,676
PCS schools capacity	N/A	N/A	N/A	N/A	N/A	36,779	44,034	44,440	47,103	47,558
TOTAL Capacity						**93,362**	**102,457**	**104,368**	**108,690**	**111,469**
Charter ceilings	N/A	N/A	N/A	N/A	N/A	N/A	43,125	45,555	50,812	53,440

Data Source: Deputy Mayor for Education, School supply data; PCSB Schedule I, DGS list of Modernized Schools.

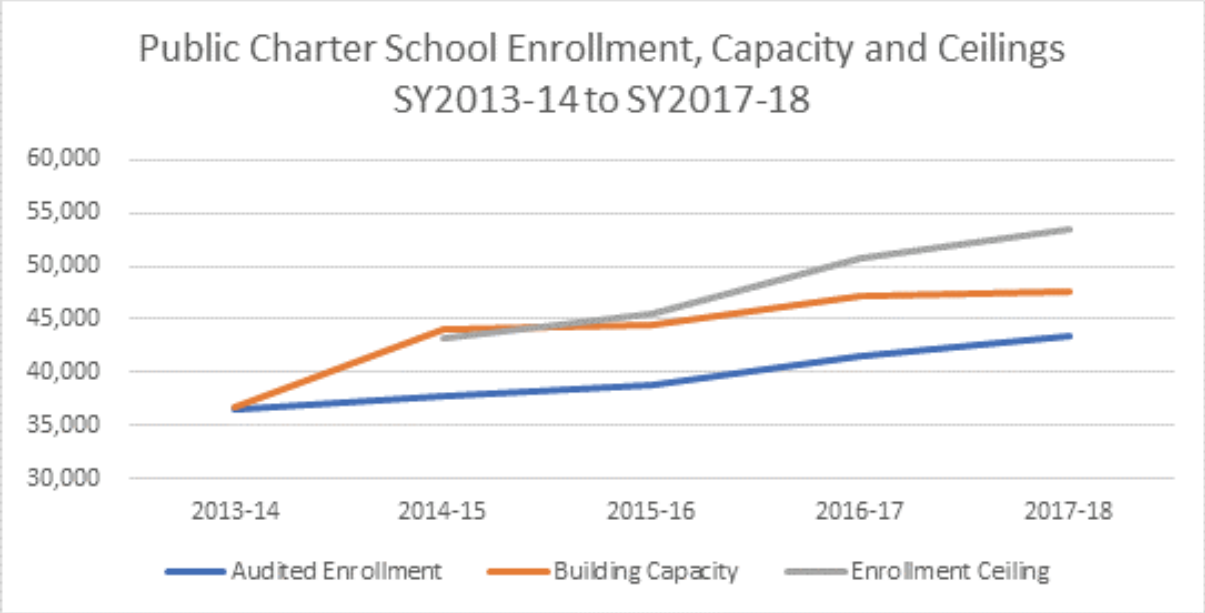


Figure 12 Data Source: Deputy Mayor for Education, School supply data; PCSB Schedule I, DGS list of Modernized Schools.

DCPS has fully modernized 53 of its 114 schools, with another 17 DCPS schools currently in planning, design or construction for modernization in the current 6-year capital improvement budget. Information by school on charter facilities conditions is not publicly documented and reported and therefore not available. Nonetheless, since the first charter school opened in 1996 and through FY19, DC's charter schools have borrowed or refinanced nearly $800 million in D.C. revenue bonds and received more than $1 billion in facilities allowance.

Number of Modernized Facilities

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# Modernized DCPS schools	16	23	25	29	32	35	35	43	48	53
Condition of charter schools	No info	No info	No info	No info	No info	No info	No info	No info	No info	No info

The hypothesis is that changes in the factors affecting parental demand and school supply may cause enrollment to deviate from historical trends and could impact the accuracy of enrollment projections at the school level. Most of these factors are well reflected in the cohort survival method of projecting enrollment. The cohort survival and capture rates pick up parents' perception of quality and any objective measures of quality related to the richness or rigor of academic programs; the professionalism and consistency of administration and teaching staff; the quality of student supports for diverse types of students; and the condition and adequacy of the school's facilities.

Opening schools and closing schools is integral to the theory of action for the education reform promised by charters and closing schools has been an administrative operating priority of DCPS to try to target resources to instruction.

[1] http://www.pewhispanic.org/2015/09/28/selected-u-s-immigration-legislation-and-executive-actions-1790-2014/

[2] Enrollment counts discussed here are audited enrollment numbers each year

3 OSSE FY17 Performance Oversight Hearing Question 4 Response -- Enrollment in Private and Parochial Schools in SY17-18 to date https://osse.dc.gov/page/fy17-performance-oversight-questions

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Section 2: Best Practices for Enrollment Projections

Best Practices for Enrollment Projections

When projecting future enrollments, it is vital to track the number of live births, the amount of new housing activity, and the change in household composition. In addition, any of the following factors could cause a significant change in projected student enrollment:

- Boundary adjustments
- New school openings
- Changes / additions in program offerings
- Preschool programs
- Change in grade configuration
- Interest rates / unemployment shifts
- Intra- and inter-district transfer
- Magnet / charter / private school opening or closure
- Zoning changes
- Unplanned new housing activity
- Planned, but not built, housing
- School voucher programs
- School closures

Obviously, certain factors can be gauged and planned for far better than others. For instance, it may be relatively straightforward to gather housing data from local builders regarding the total number of lots in a planned subdivision and calculate the potential student yield. However, planning for changes in the unemployment rate, and how these may either boost or reduce public school enrollment, proves more difficult. In any case, it is essential to gather a wide variety of information in preparation for producing enrollment projections.

When looking ahead at a school district's enrollment over the next two, five, or ten years, it is helpful to approach the process from a global perspective. For example: How many new homes have been constructed each year? How many births have occurred each year in relation to the resident population? Is housing experiencing a turnover—if so, what is the composition of families moving in/out? Are more or fewer students attending private school or being home-schooled? What has the unemployment rate trend been over the past ten years? What new educational policies are in place that could affect student enrollment figures?

The cohort survival methodology is often used to answer these questions and is standard throughout the educational planning industry. The housing method is also a common methodology used to project enrollment in areas of high growth due to new housing development.

Traditionally, enrollment projections are developed at a district-wide or school level. Enrollment projections can also be developed based on where students live, if student data is available, including their address at the time of enrollment, by school year, historically. Enrollment projections based on where students attend, or the more traditional school-level enrollment projections, are useful for budgeting purposes and/or teacher and/or program placement. Enrollment projections based on where students live is useful for school districts that are planning school facilities or attendance boundaries.

Cohort Survival Method

The cohort survival methodology (sometimes referred to as the grade progression ratio method) is a widely used enrollment projection model that is used by many school districts and state and federal agencies to project K-12 enrollment.

A cohort is a group of persons [in this case, students]. The cohort survival enrollment projection methodology uses historic live birth data and historic student enrollment to "age" a known population or cohort throughout the school grades. For instance, a cohort begins when a group of kindergarteners enrolls in grade K and moves to first grade the following year, second grade the next year, and so on.

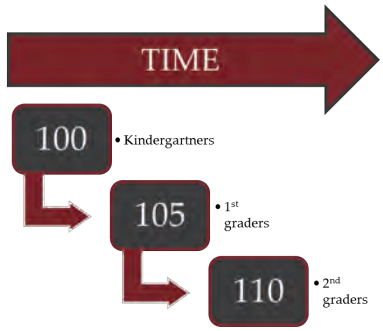


Figure 13 Cohort Survival Method

A "survival ratio" is developed to track how this group of students increased or decreased in number as they moved through the grade levels. By developing survival ratios for each grade transition [i.e. 2nd to 3rd grade] over a ten-year period, patterns emerge. A projection ratio for each grade transition is developed based on the analysis of the survival ratios. The projections are used as a multiplier in determining future enrollment.

For example, if student enrollment has consistently increased from the 8th to the 9th grade over the past ten years, the survival ratio would be greater than 100% and could be multiplied by the current 8th grade to develop a projection for next year's 9th grade. This methodology can be carried through to develop ten years of projection figures. Because there is not a grade cohort to follow for students coming into kindergarten, resident live birth counts are used to develop a birth-to-kindergarten survival ratio. Babies born five years previous to the kindergarten class are compared in number, and a ratio can be developed to project future kindergarten enrollments.

The cohort survival method is useful in areas where population is stable [relatively flat, growing steadily, or declining steadily], and where there have been no significant fluctuations in enrollment, births, and housing patterns from year to year. The cohort survival methodology inherently considers the net effects of factors such as migration, housing (new housing and housing turnover), dropouts, transfers to and from charter schools, open enrollment, and deaths. This methodology does not assume changes in policies, program offerings, or future changes in housing and migration patterns.

Housing Method

Enrollment projections can be determined by analyzing the housing data for the areas that make up a school district. Yield factors can be established by comparing the historic change in enrollment from year to year divided by the total number of building or occupancy permits issued. For example, if student enrollment has increased by approximately 100 students each year and approximately 200 building permits have been issued each year for the past ten years then the yield factor would be approximately 0.5 students per building permit.

Once yield factors are established, the number of new students per year can be estimated by multiplying the yield factor by the number of projected new housing units. This method is effective when the rate of student enrollment far exceeds the live birth rate.

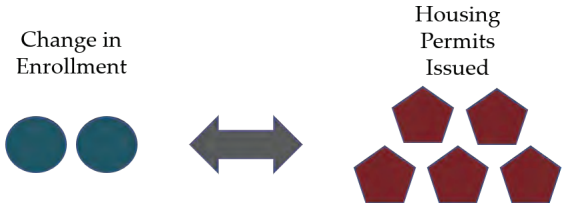


Figure 14 Housing and Enrollment Projections

If housing demolitions are occurring in a district, these must also be considered. For instance, if housing demolitions have increased rapidly over recent years while new housing starts have remained relatively constant over many years, the conclusion may be that some of the new housing starts will simply be replacements for the families displaced by the demolitions. Of course, housing value and household composition would need to be further analyzed to confirm that this is indeed the case. It is possible that enrollment may remain flat or even decline although there is new housing occurring in the area.

This methodology can be applied at the level of geography that building permit and student data is available. For example, if building permits are available at a district-wide level, this method can be applied to develop a district-wide projection. Enrollment projections by school or boundary could be developed if building permits and student data are available at those levels.

The housing method is useful in areas where population is growing primarily due to new housing in areas previously undeveloped [rural or industrial land]. The housing method does not inherently consider the net effects of factors such as migration, housing turnover, dropouts, transfers to and from charter schools, open enrollment, and deaths that the cohort survival method does. Like the cohort survival method, this methodology also does not assume changes in policies, program offerings, or future changes in housing and migration patterns.

Section 3: Processes & Methods in Comparable Cities

The District of Columbia is not alone in navigating the challenges of projecting enrollment. There are significant challenges in accurate and reliable projections because of demographic and housing change. But there are new education policies advanced in a school reform model that promotes school openings and closings, and school choice as central to school improvement that affects enrollment patterns. While all districts are subject to change based on child population demographics, many of the education policies that promote open enrollment create enrollment projection uncertainties distinct from school districts with more traditional residence-based student assignment policies.

In the Study, we sought to learn how other districts with robust choice policies were projecting their enrollments to learn whether there were any processes or methods that might be appropriately applied in the District of Columbia. Since the District of Columbia is both the State and the District, we also interviewed the state agencies where we had surveyed and interviewed school district planners.

Four school districts listed in the table below, all with substantial charter enrollments and student assignment policies where school choice is strongly supported, were surveyed and interviewed. Each district was asked to complete an online survey prior to a phone interview where additional questions regarding enrollment projection process and purpose were discussed to better understand how they are developed and used. The survey and interview questions can be found in Appendix B of this report.

2016-2017 Public School District and Charter Enrollment by School District

	District Public-School Enrollment SY16-17	Charter School Enrollment SY16-17	Total Public-School Enrollment SY16-17	% of Total Enrollment Attending Charter SY16-17
District of Columbia	48,510	41,491	90,001	46.1%
Columbus City Schools	50,405	18,080	68,485	26.4%
Denver Public Schools*	72,700	18,463	92,331	20.0%
Oakland Unified Schools	36,668	12,932	49,600	26.1%
The School District of Philadelphia	134,129	64,848	198,977	32.6%

*Estimate within City limits

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data(CCD), Private School Universe Survey (2015-16 SY), Urban Institute District Profile Report

The Office of the D.C. Auditor (ODCA) sent letters to representatives at each of these school districts requesting their participation in a virtual or in-person meeting to provide insights into how enrollment projections are developed in their respective districts as well as how common challenges are taken into account in the development of enrollment projections. In addition, similar requests were sent to the state agency corresponding to the school districts that agreed to participate.

The chart below provides a brief overview of the response to the primary questions asked, followed by a summary of each interview synthesized into four general parts of how each city creates its enrollment projections:

- Inputs and methods
- Process and adjustments
- Uses of enrollment projections

Education Agency	Conduct Enrollment Projection	Primary Purpose of Enrollment Projections	In-House or Consultant	Years of Enrollment Projected	Projection Level of Detail	Conduct a Projection Review Process	Public Release or internal Use	Projections Regulated by State Guidelines
Columbus Public Schools	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Denver Public Schools	Yes	Budgeting	In-House	1-year 5-year	By District By School By Grade	Yes	Public	No
Oakland Unified School District	Yes	Budgeting	Both	1-year	By District By School By Grade	Yes	Internal	No
The School District of Philadelphia	Yes	Budgeting	In-House	1-year	By District By School By Grade By Geographic region	Yes	Internal	No

Inputs and methods

Officials in Denver, Oakland and Philadelphia all use a cohort survival method to track historical enrollment trends forward into the future. Columbus was an outlier, in not doing projections. Officials in the other three comparable districts use similar school- and demographic-based inputs to formulate their enrollment projections. Denver and Philadelphia use official October enrollment counts, like the District of Columbia, while Oakland uses student counts from the 20th day of school. The three comparable districts also use surrounding area demographic information in making their enrollment projections, such as building permits, and measures of economic growth. They also look school choice patterns to inform potential demand in a given area.

Process and Adjustments

The three comparable districts, like DCPS, have a process for school-level adjustments and feedback on initial projections. Denver allows principals to challenge their initial projection and ask for a higher number, but if they fail to reach their new target, they must pay back the district for the difference. School leaders in Oakland can request changes to their preliminary projections with supporting documentation. Principals have the opportunity to provide feedback in Philadelphia as well.

Uses of Enrollment Projections

Much like the District of Columbia, the comparable cities (except Columbus) use next-year enrollment projections for budgeting purposes and multi-year projections for capital planning.

School District Interview Summary

Columbus Public Schools

Columbus Public Schools (CPS) operates under a policy of zero-based budgeting, and therefore does not conduct enrollment projections. Budget managers develop budgets for their respective areas. For example, school principals and department chiefs are budget managers and therefore develop the budget for their school or department. Once the budget is determined, the enrollment is dictated by the budget allocation. There are measures in place to ensure schools are not overcrowded and enrollment is limited. Budget managers consider key indicators such as historical enrollment and building capacity when developing school budget allocations.

Although CPS does not conduct enrollment projections internally, they do receive a by District, by School projection from the Ohio Facilities Construction Commission (OFCC). These projections are conducted when CPS undergoes a capital improvement program that is co-funded by the State of Ohio. These projections are for ten [10] years, and facility improvements (new construction, modernizations, etc.) are determined by the highest year of projected enrollment if expected to increase or the fifth year of projected enrollment if expected to decrease.

Denver Public Schools

The Denver Public Schools (DPS) enrollment projection processes and approach provide a best practice model which the District of Columbia can adapt. Denver's projection model is based primarily on the cohort-survival method, using the official October headcounts, which are finalized in November. Enrollment projections are produced by school, by grade for one year. These projections are then summed to determine a District-wide enrollment projection. This allows for consideration to be given to trends specific to individual schools such as school choice trends and physical facility capacities.

First, a base enrollment projection is developed looking at survival ratios and live birth counts by census block provided by the State Department of Health. District-wide kindergarten is projected by analyzing the birth data by boundary level and the ratio of births to kindergarten 5 years later. Sixth grade, and ninth grade enrollment projections are calculated by analyzing the ratio of total fifth and eighth graders in the boundary that are in sixth and ninth grade the following year. All other grades, by school are developed by analyzing the survival ratios at the school level to determine a projection ratio that is applied to current enrollment.

A preliminary enrollment projection is then determined by incorporating input from the choice managers who have knowledge of school choice trends, program placements, housing development, economic growth and decline, facility planning efforts, boundary changes, policy changes, and physical facility capacities. There is an abundance of data collected historically to support the adjustments made by the choice managers in the development of the preliminary enrollment projections. The preliminary enrollment projections are distributed to each school for feedback. Schools challenge the preliminary projections and a final enrollment projection is established. DPS implements a system of accountability where schools or administration are paid if the enrollment projections are off. For example, if the school challenged the preliminary enrollment projection for a higher projection and the actual enrollment for the projection year was lower than the projection, the school owes the administration the dollars for the difference in students. Conversely, if the administration issues an enrollment projection for a school that was lower than the actual enrollment, the administration pays the school the difference.

Enrollment projections for the DPS are developed by internal staff and are made publicly available upon request when they are finalized by DPS Planning in late January for the following school year. The primary purpose of the enrollment projections is for student-based budgeting purposes.

In addition to one-year enrollment projections, DPS develops a five-year forecast. Typically, the five-year forecast is produced in-house by internal staff. In 2017, however, the District outsourced this effort to local consultants for the first time to obtain an independent perspective. The District anticipates that these forecasts will be outsourced every three years with DPS staff developing them internally in between. The five-year forecasts are used to keep up with trends in growth and decline in areas of the District, determine program needs and placement, and facility needs. The forecasts are developed by Census block group, by grade group (i.e., K-5, 6-8, and 9-12), and then rolled up by sub-region and region. District-wide long-term enrollment forecasts are made publicly available in their annual Strategic Regional Analysis, which is published in early December each year on www.planning.dpsk12.org.

Oakland Unified School District

The Oakland Unified School District (OUSD) enrollment projection model is based primarily on the cohort survival method, using the 20-day student head counts. Enrollment projections are produced by school, by grade for one

year. These projections are then summed to determine a District-wide enrollment projection. This allows for consideration to be given to trends specific to individual schools such as school choice trends and physical facility capacities.

First, a base enrollment projection is developed looking at survival ratios and live birth counts. District-wide kindergarten, sixth grade, and ninth grade enrollment projections are calculated using the cohort survival methodology, and then a percentage of the total market share for a specific school is determined. The percentage of the total market share is multiplied by the District-wide projected enrollment to develop a kindergarten, sixth grade, or ninth grade projection by school. For example, if the district-wide sixth grade is projected to be 100, and a school historically has had 25% of the total sixth grade enrollment, the sixth-grade projection for that particular school would be 25. All other grades, by school are developed by analyzing the survival ratios at the school level to determine a projection ratio that is applied to current enrollment.

A preliminary enrollment projection is then determined by incorporating school choice trends, program placements, housing development, economic growth and decline, and physical facility capacities. The preliminary enrollment projections are distributed to each school for feedback. Schools can request changes to the preliminary projections if supporting documentation/data is provided. The supporting documentation/data is reviewed, and a final enrollment projection is established.

Enrollment projections for the OUSD are developed by internal staff and are not made public. The primary purpose of the enrollment projections is for budgeting purposes.

The School District of Philadelphia

The School District of Philadelphia (SDP) enrollment projection model is based primarily on the cohort survival method, completed by District staff in February of each school year using the official October enrollment. One-year enrollment projections are completed primarily for budgeting purposes. The District periodically conducts longer forecasted projections that are primarily used for capital planning purposes. SDP applies a weighted average to the cohort survival due to the dynamics of the city population, available options for school choice and the frequent opening and closing of schools across the District. The District also implements multiple strategies to project enrollment for different types of schools.

Neighborhood schools use live births by zip code or census tract (usually use census tract), for school year (September to August) as provided by the city. Students are geocoded using geographic information systems (GIS) by census block and grouped together into neighborhood grids (i.e. planning units) that can be rolled up into a District-wide summary. Kindergarten is not required in the State of Pennsylvania so, birth to first grade and kindergarten to first grade survival ratios are analyzed.

There has been significant growth of charter schools in Philadelphia. There are two [2] types of charter schools in the District: the traditional charter schools that do not have catchment areas and serve both neighborhood and city-wide students; the renaissance charter schools that have a defined catchment and feeder patterns identified. Projections are not completed for traditional charter schools as those schools fill based on their contract/charter agreements; however, modifications to public school projections are made based on from where each traditional charter school may attract students. Renaissance schools are required to take students from their neighborhood catchment and will only fill seats from outside the neighborhood if they have not fulfilled their charter allotment.

Projections for these schools are completed much like the public schools and are performed at the same time in February.

SDP also offers substantial city-wide (lottery) and special-admit (application, audition, etc.) schools. The data from the student selection process is critical when projecting enrollment for these schools. How many students apply and how many students are accepted determines an attrition rate. The average attrition rate is used to identify projections of how many students will typically show up for a starting grade. This is complicated by the fact that students will apply for the non-starting grade of a school. Therefore, modifications to survival ratios must be calculated by both applications and historical trends of grade-to-grade enrollments. Once again, like charters, it must be determined where in the city these students are coming from to determine modifications of the neighborhood school projections.

The review process for projections is multi-layered and documented to ensure that those who participated in the review process have knowledge regarding the conclusions of the projections. After projections are completed in February, an internal review by several departments, including assistant superintendents assigned to each network, provides feedback based on knowledge of program movement, student movement, and policy changes to determine where students should be added to or subtracted from a certain area. The projections are then reviewed by the principal of each school to apply a local knowledge element to the projections. Once these two steps are completed, a leveling process by school is completed to match a district-wide projection.

Enrollment projections for the SDP are developed by internal staff. There are 3 individuals, including a manager, who collectively develop enrollment projections as well as perform GIS and planning duties utilizing mainly GIS and database skills.

State Interview Summary

As part of this study, the state agency in which the districts are located were interviewed regarding projection processes at the state level. Representatives from California, Colorado, Ohio and Pennsylvania were interviewed. The following are brief summaries of the findings of these interviews.

California

Enrollment projections are completed by the Demographic Research Unit of the California Department of Finance (DOF). Student enrollment projections are completed at the county level by grade using a cohort survival methodology. The State projects enrollment based on Average Daily Attendance (ADA) utilizing historic ADA enrollment by grade. ADA is a measurement of enrollment. While it is slightly lower than the State's actual enrollment, it provides the steadiest measure of enrollment. Live birth data by county, as provided by the State Department of Health, is used to project kindergarten enrollment. Projections are completed for next budget year, then typically forecasted to the next 4 to 5 years; however, recently there have been legislative requests to complete projections for up to 10 years.

Projections are completed using a grade progression (cohort survival) methodology, but typically only apply the last year's ratio unless a trend indicates a modification to the survival ratio. County-level projections are available online for Districts to view, but there is little feedback received by the DOF for modifications. Enrollment projections are useful for planning but are not required to be used for any other purpose.

Colorado

Enrollment projections for the State of Colorado are conducted by the Colorado General Assembly legislative counsel staff. Projections are completed at the district level to project funding for the next school year providing estimates for student counts, free-lunch estimates, and property tax collections. Enrollment projections use the official October headcounts as the basis of data and apply a cohort survival methodology for projections. Because enrollment projections are used for school district funding, a process of "trueing up" is used to determine final budgets for State-level funding to school districts. Typically, the end of year enrollment is matched to the projections and funding is leveled for each district to "true up" the budget to the enrollment. Although this "true-up" occurs, there is little communication from the district to the State while developing projections before they are finalized. This process is currently being reviewed and modified to create a more accurate year-to-year projection.

Charter schools are also projected by the State, typically three to five years out to determine community needs and charter renewal applications. Data used to develop enrollment projections include community outreach, letters of intent, type of school model that is being projected, historical enrollment, and live birth data.

Ohio

Ohio does not complete enrollment projections at the State level for budgeting purposes. Enrollment projections are developed by the Ohio Facilities Construction Commission (OFCC) consultants for school districts entering facilities projects through the State's K-12 school renovation and building initiative. Ten-year enrollment projections are provided to districts at the district-wide level, by grade, by year. If school districts would like enrollment projections completed by school, OFCC will conduct a by school projection for the district upon request. The OFCC uses the cohort survival method to project enrollment for all school districts to which they provide enrollment projections.

Data used to project enrollment incudes:

- Live birth counts by place of residence of the mother, either by zip code or municipality
- Ten years of historical enrollment by grade, by year
- Ten years of open enrollment into and out of the district by grade, by year
- Ten years of charter enrollment by grade, by year
- Building permits
- Esri (Environmental Systems Research Institute) population estimates and projections

Pennsylvania

Ten-year enrollment projections for the State of Pennsylvania are developed by the Pennsylvania Department of Education (PDE) Office of Data Quality for budgeting purposes. PDE applies a cohort survival methodology utilizing 5 years of historical October 1st enrollment data, housing data (derived from the Tax Equalization Division), and live birth data. Modifications to survival ratios are made based on recent data trends or anomalies that would not typically exist. Projections are completed by grade, by district and are only conducted at the State level for charters and comprehensive career and technical centers. There is generally no review from local districts.

Section 4: Projection Processes & Methods in D.C.

Enrollment Projection Methodology

The District of Columbia produces two main types of enrollment projections: next-year and multi-year. Next-year enrollment projections are compiled by school, grade, and subgroup for DCPS and public charter schools. Multi-year projections, which are typically part of a Master Facilities Plan (MFP), are usually by grade and sometimes by sector, but not done at the school level. The District of Columbia Office of Planning (OP) produces age level population forecasts, which are useful in developing multi-year enrollment projections.

Next-year Projections

According to interviews with District officials, each of the District's 67 local education agencies (LEAs) projects its next-year enrollment as part of the city's annual budget cycle. LEAs submit their enrollment projections to the DME, which certifies their totals, and sends final projections to the Executive Office of the Mayor (EOM), which works with the Office of the Chief Financial Officer (OCFO), to present a proposed budget to the Council in March for the upcoming fiscal year beginning October 1st. Next-year projected enrollments submitted to the DME include enrollment projections by school, grade and subgroup for DCPS and public charter schools.

Multi-year Projections

Long-range enrollment projections typically have been part of a Master Facilities Plan (MFP). These have been produced at irregular intervals since the mid-1990's[1]. Past plans have used a variety of methods, geographies and periods of study to project future enrollment, making their findings difficult to evaluate against reality. While past projections also focused exclusively on projecting DCPS enrollment, the forthcoming 2018 MFP will include charter school enrollment projections as well.

Overall Population Forecasts

The District Office of Planning (OP) State Data Center forecasts population and, starting in 2012, estimates population by age in the city's 46 neighborhood clusters. OP forecasts do not link population estimates to school-level enrollment, instead highlighting neighborhoods that are likely to see an increased number of residents by age-level bands in the future[2].

Uses of Enrollment Projections

Enrollment projections are used for planning and budgeting at the City, Local Education Agency (LEA) and school-levels. The District uses next-year projections to determine its DCPS and public charter school operating budgets, and the charter school facilities allowance. Multi-year projections and overall population projections have informed DCPS educational facilities master planning and capital budgeting, and the Public Charter School Board's planning for school openings.

Setting the District's Operating Budget for Public Education

The District funds its DCPS schools based on the next-year projected October 5th enrollment. Public charter schools are funded in quarterly installments based on their projected October 5th enrollment (Q1), unverified October 5th enrollment (Q2 & Q3) and audited October 5th enrollment (Q4)[3]. The accuracy of DCPS's next year projections are important because currently there is not a process in place to adjust funding based on actual enrollment. The case of Kelly Miller Middle School in Ward 7 illustrates how school openings and closings can impact school-level budgets. In 2013 DCPS closed and consolidated Ron Brown Middle School into Kelly Miller, displacing about 200 students. Officials expected enrollment in Kelly Miller to grow by about 80 students that fall, but enrollment went up by 160 students, meaning the projection was about 80 students too low. Conversely, when three nearby charter schools expanded to include 6th grade in the fall of 2015, DCPS officials underestimated how much their expansion would affect Kelly Miller's enrollment. The school was projected to enroll 565 students in October 2015, but only enrolled 450 students. Without a process to adjust funding based on actual enrollment, schools can be over- or under-funded for their specific needs.

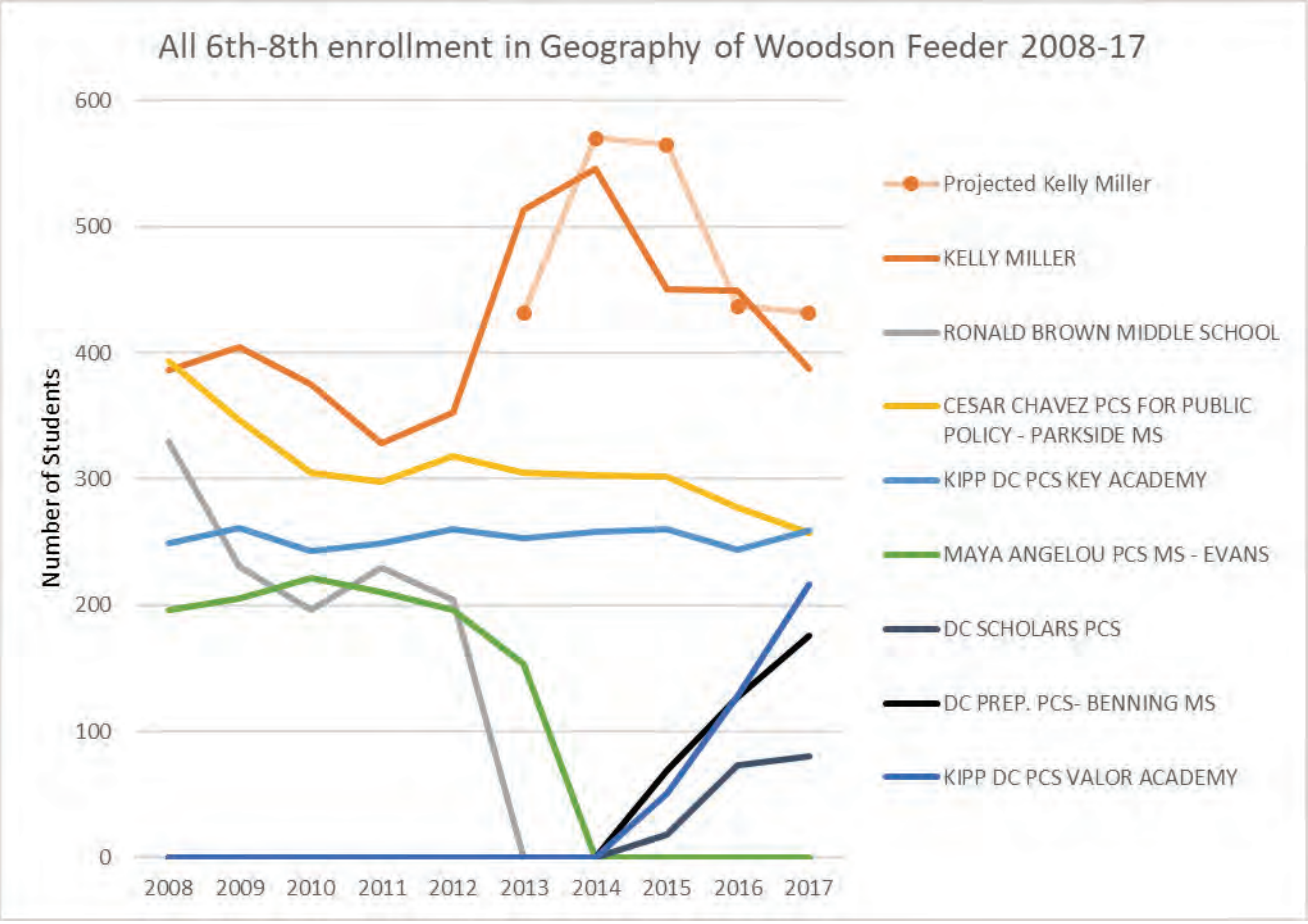


Figure 15 All 6th – 8th enrollment in Woodson Feeder Geography 2008 - 17

Even smaller fluctuations in enrollment bring significant budget implications. Each year the next year enrollment projections are used by DCPS schools to budget for their teachers and other staff, within the parameters of DCPS's staffing requirements.

Budgeting for weighted subgroups

The School Reform Act (SRA) requires OSSE to review the Uniform Per Student Funding Formula (UPSFF) basic foundation level of public education funding and the weights that adjust this foundation every two years[4]. The recommendations, usually from an OSSE committee on UPSFF, make recommendations to the Mayor which may be used in setting the UPSFF for the District's Public Education Budget which is approved by the Council as part of the annual budget process. Pupil weights are added to the foundation for these categories: per grade-level and subgroup populations, as outlined in D.C. Code § 38-290[5], and are listed below.[6]:

- Grade levels
- Special populations
  - Special Education
    - Students eligible for Level 1-4 special education services
    - Students covered under Blackman Jones compliance
    - Students that were eligible for Attorney's fees
  - English language learners
  - Residential
  - Extended year
  - At-risk students[7]

Charter Facility Allowances

In addition to receiving per-student allocations, public charter schools receive local funding for capital-related costs for facilities, including construction, major buildings improvements, and leasing or purchasing property through a Facilities Allowance. However, charter schools are not obligated to use their facilities allowance on capital-related facilities costs. The facilities allowance is part of their July 15th (1st quarter) UPSFF payment[8]. Each LEA's facilities allowance is set as a dollar figure "multiplied by the number of students estimated to attend each Public Charter School"[9]. If there are discrepancies between an LEA's projected, audited October 5th enrollments, OSSE adjusts the LEA's April 15th (4th quarter) payment to reconcile differences in the facilities allowance as well as the UPSFF funding.[10]

Educational Facility Master and Capital Planning

Multi-year enrollment projections should help the District align its public-school capacity with the needs of its population. Five- and ten-year projections completed as part of past MFPs are meant to inform DCPS's six-year capital improvements plan (CIP) process including estimated population growth or changes in student demand. Multi-year projections should also inform school boundaries for DCPS, but enrollment, capital planning, and boundary decisions have not been consistently aligned.

In the recent past in the absence of school boundary level data projections, decisions have been made without adequate information and in silos. Another example is Barnard ES. The Ward 4 school is extremely crowded, including portable classrooms with capacity for 176 students. Two nearby DCPS elementary schools, Clark ES and Rudolph ES became city-wide charters in SY 2010 and 2012, respectively. Sustaining one or both as DCPS elementary schools, based on the neighborhood population, could have relieved crowding at Barnard.

Without accurate five-year projections, District policymakers have supported a capital budget that has resulted in schools being constructed with inappropriate capacities. Another example is Deal MS, with 2017-18 enrollment of 1,475 students. The Ward 3 school was initially modernized in 2009 for an enrollment of 800 students - too small a capacity to serve the population of its 6 feeder schools. It had portable classrooms soon after modernization. A major addition in 2013 permitted the school to grow its permanent capacity to 1,370, still with portables for 200 students. MacFarland MS, currently undergoing modernization for 590 students, may similarly be over-crowded shortly after it reopens if only half of the 5th graders attending its 7 feeder schools chose to attend.

Estimating the Number of Lottery Seats

In March, LEAs submit to My School D.C. the number of seats, by school and by grade that they will make available in the My School D.C. lottery.

Seats Offered in Spring 2017 My School D.C. Lottery by Grade and Sector			
Grade levels	**DCPS**	**Charter**	**Total**
PK3	2,318	3,668	5,986
PK4	1,086	1,011	2,097
K	362	911	1,273
1st	226	491	717
2nd	218	525	743
3rd	201	398	599
4th	182	406	588
5th	133	664	797
6th	438	1,268	1,706
7th	216	488	704
8th	186	315	501
9th	1,525	1,605	3,130
10th	302	293	595
11th	140	118	258
12th	98	43	141
Total	**7,631**	**12,204**	**19,835**

The DCPS Planning Team leads the development of the lottery seat projections, which are driven by the enrollment projections. This year, lottery seats were finalized in mid-March, the deadline for LEAs to submit seats to My School D.C. This year the following factors were used when projecting lottery seats: average class size/cap, classroom/staff allocations, building capacity, and historical seat allocations and enrollment. Similar to enrollment projections, the DCPS Planning Office proposes seat projections to school leaders and gives them an opportunity to petition a change.

DCPS does not use estimates of school-level offer acceptance rates, defined as the percent of applications that ended up enrolling in the offer school, out of all applications that were offered[11], to decide how many seats to make available in the lottery. A school is obligated to make a seat available if it puts it into the lottery. However,

because a match in the lottery resulted in enrollment only 57% of the time in 2017-18, it is not uncommon for charters to place more seats into the lottery than they can manage, knowing that they may be somewhat crowded if the offer acceptance rate is unusually high, but can expect some attrition during the year. Additionally. some schools accept large cohorts of students in their early grades, but close off admission to their upper grades, thereby reducing the error in their enrollment projections process. DCPS neighborhood schools, however, must accept in-boundary students at all grades, making their enrollment projections process much more complicated. While lottery seats are not a direct input in the development of DCPS enrollment projections; contextually, they are used when making programmatic adjustments.

DCPS Enrollment Projection Methodology

The DCPS Office of Strategic School Planning and Enrollment projects October 5th audited enrollment for each DCPS school. DCPS projects enrollment using a cohort-survival method[12] with slightly different methods for entry grades and early childhood grades. Once school-level projections are ready, each school's principal and Local School Advisory Team (LSAT) can review and propose changes.

Data used in DCPS Preliminary Baseline Projections

DCPS uses OSSE student-level data from DCPS schools to produce their school by grade cohort history and preliminary baseline projections. The data includes their demographic, age, address, school, grade level, at risk, special education, and English language learner status. When OP does age level projections, they do a presentation to DCPS to help them understand how they may impact their enrollments.

Cohort Method

For each school's non-entry level grades (1st, 2nd, 3rd, 4th, 5th, 7th, 8th, 10th, 11th, and 12th) DCPS first averages the change of class sizes from one grade to the next over the past four years of October 5th enrollments[13]. This four-year average is called the "cohort survival ratio", meaning the average percentage of a school's grade-level cohort that stay enrolled for the next year's enrollment audit in October.

DCPS multiplies the number of students in the current cohort against the average cohort survival ratio to project next-year enrollment. If the resulting projection comes out as a fraction, the decision to round up or down is based on whether the most recent year's enrollment shows an upward or downward trend in cohort survival.

Entry Grades Enrollment Projections

For each school's entry level grades (Kindergarten, 6th and 9th), DCPS projects next-year enrollment using a combination of cohort survival method for Kindergarten, average feeder pattern retention, average number of new in-boundary students, and average number of out-of-boundary enrollments using a 3-year average. Sixth grade is not treated as an entry level grade in education campuses serving PK3 through 8th grade.

Early Childhood Enrollment Projections

DCPS generally projects to fill all available pre-kindergarten spaces. The number of PK3 seats made available is determined based on the availability of early childhood classrooms and the percent of PK3 seats accepted in the lottery over the past three years. Early childhood classrooms are required to be on the first floor and have

bathrooms adjacent or immediately in the classrooms[14]. Although District officials are proud of a near-universal pre-k program, there is no statutory requirement to serve *all* 3 and 4-year-olds or to provide PK3 and PK4 at a student's in-boundary elementary school and DCPS does not meet the current in-boundary student demand in some neighborhoods. As of March 30th, 2018, there were 772 PK3 applicants and 1,336 PK4 applicants that did not receive a match anywhere in the My School DC lottery including 419 PK3 applicants and 514 PK4 applicants waitlisted at their in-boundary DCPS school[15].

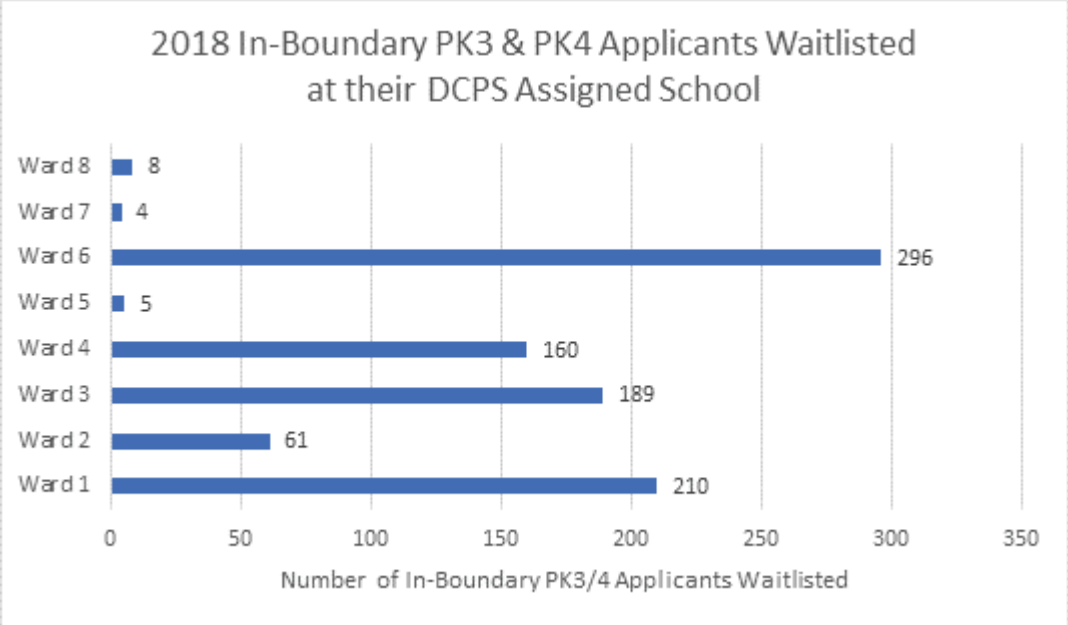


Figure 16 Data Source: My School DC Lottery as of 3/30/18

Through its Early Action program in SY2017/18, however, DCPS offered guaranteed PK access for families living in-boundary for nineteen elementary and education campuses in Wards 4, 5, 6, 7 and 8[16].

DCPS estimates their PK4 seats by assuming they will retain all PK3 students (if it was offered) and expands the PK3 enrollment based on the historic capture of PK4 students and the number of classrooms available.

Each school's early childhood education (PK3 and PK4) projections are bound by D.C. Municipal Regulations for eligible facility space and maximum class sizes based on national standards for high-quality pre-k programs[17]:

- PK3 classes may not exceed 16 students
- PK4 classes may not exceed 20 students
- Mixed-age classes (PK3 and PK4) may not exceed 17 students

Subgroup Projections

Enrollment of English Learner and Special Education subgroups are projected by DCPS at the same time as General-Education enrollment and shared with Principals and then finalized together with the by school, by grade General-Education projections. English Learner projections are created in conjunction with the DCPS Office of Strategic School Planning and the Language Acquisition Division. Special Education Levels are projected by the Division for Specialized Instruction.

Adjustments to Cohort Estimates

Historical cohort models will only accurately project at the school by grade level when enrollment is stable. Due to changes in demand and supply, at the school and grade levels, DCPS uses a system of central office and then school level review, including grade configuration subtotals, to improve the accuracy of its projections.

DCPS Central Office Review

After compiling grade-level and subgroup enrollment projections, the Office of Strategic School Planning and Enrollment reviews and adjusts projections based on several criteria outlined in the DCPS budget development guide, including:

- School specific programming changes
- Grade configuration changes
- New or expanded programming
- Temporary or permanent location changes
- Other place-based circumstances[18]

There are no written procedures for how DCPS central office staff make the adjustments to grade-level or subgroup enrollment projections. However, the DCPS Office of Strategic School Planning and Enrollment uses district-wide grade level totals to help evaluate the baseline projections of individual schools, which they adjust prior to posting in the web portal. Adjustments done before engaging the local schools may be related to facility capacity, such as adding enrollment if a new early childhood classroom is added or reducing enrollment if the school is being relocated into swing space which has lower capacity, or increasing enrollment following a school modernization that increased school size.

DCPS Principal Petitions

Principals review and propose changes to their school's revised enrollment projections through an online portal. In a recent improvement, the Local School Advisory Team (LSAT) chairpersons[19] can also view the school projected enrollments. In this web-based portal, the principals see their projection, as well as the historical trends, informing each grade-level's specific counts. Principals may petition to adjust their projections and must submit a written justification for their proposed changes. The DCPS Office of Strategic School Planning and Enrollment review the principal petitions and justifications and provides the final school-level projection, along with a central office response to any principal petitions, are included in the online portal. In considering the principal petitions, DCPS uses their district-wide grade level totals to help evaluate whether specific petitions should be granted or not.

After this review process, the DCPS Office of Strategic School Planning and Enrollment presents its final projections to the DME for certification.

Mid-Year Enrollment Adjustment

After the principal review process, the DCPS Office of Strategic School Planning and Enrollment presents its school-level projections to the DCPS Office of the Chief Business Officer (CBO). The enrollment projections for DCPS are developed based on the individual school, by grade, and by sub-groups. The District of Columbia's final UPSFF LEA

level projections typically includes a 2% increase because DCPS is the system of right in the District of Columbia. and, its enrollment typically goes up after the October 5th enrollment audit.[20]

DCPS DME Review

The Office of the Deputy Mayor for Education reviews DCPS projections and has the authority to adjust DCPS projections. After certifying the projections, the DME submits the DCPS enrollment projections to the Office of the City Administrator's Office of Budget and Performance Management for use in the fiscal year education budget.

Projecting Public Charter School Enrollment

D.C. Code requires that each public charter school Local Education Agency (LEA) submit preliminary projections for next-year enrollment to their chartering authority[21]. Each charter LEA develops separate projections for their next-year enrollment by school, by grade and sub-groups, which they submit to the D.C. Public Charter School Board (PCSB) by December of each year.

Data used in PCS Projections

The data provided by PCSB to PCS LEAs is OSSE audited school enrollment data at the school by grade level, which includes school by grade special population data, as well. Although the PCSB does not provide the PCS LEAs an estimate of their projected enrollment based on an historical cohort model, it does provide them with:

- current school year's final enrollment projection for each school
- actual enrollments from the previous two school years
- the "cohort attrition rate" representing the change in the number of students enrolled in the grade during the last finished academic year, as compared to one grade earlier the year before
- the "within-year attrition rate" meaning the change in enrollment during the last finished academic year for the group between the audit and the period

LEA Process

Public charter LEAs use a cohort-survival method to project their next-year enrollment, according to interviews with multiple charter LEA representatives. They adjust their projections based on program and grade changes, enrollment ceiling (schedule I) changes, building capacity, and wait-list size.

The PCSB reviews, adjusts, and compiles each charter LEA's next-year projections. Charter LEAs receive funding based on their current year enrollment and are funded for enrollment and added weights for sub groups (special education, at risk, or ELL students), if they have more than they projected for their October official count day.

PCSB Collection via the HUB

Each December, charter LEAs submit their next-year enrollment projections to PCSB using the HUB, an online portal for LEA data managers, managed by PCSB.

PCS DME Review

The Office of the Deputy Mayor for Education (DME), reviews the preliminary projections of the charter LEAs. The DME reviews each submitted projection and flags any LEAs that submit a projected October enrollment growth of 2% or more compared to their previous audited enrollment[22]. Flagged submissions receive additional scrutiny, and potentially revised projections, based on the following criteria:

- Enrollment ceiling
- History of meeting their projections
- School enrollment trends over the past 5 years
- Whether PCS LEAs are adding new schools, grades, new classrooms
- Moving locations/growing in capacity
- Wait-list data
- Historic attrition for each school's grade

LEAs may submit "final feedback"[23] before projections are finalized. Written procedures for adjusting enrollment projections are vague, but both the LEA and DME, while seeking accuracy, consider the charter projections a lower stakes projection than DCPS because the budgeting for the charters is adjusted based on actual October enrollment.

Certification of Enrollment Projections

The Deputy Mayor for Education certifies the next-year enrollment projections before they go to the Mayor's Office of Budget and Finance for use in building the District's budget. In a recent memo from the Deputy Mayor for Education, on DC PCS SY19-20 Enrollment Projections Timeline for FY20 Budget Development, the DME informed the DCPS and charter LEAs that the enrollment process is to be moved forward by nearly 6 weeks.[24]

While it appears that the processes described for DCPS and PCS LEAs constitute a degree of due diligence by LEAs, PCSB, and DME, to ensure accurate projections, there is no defined, published and accessible check list or criteria that are used to certify the work that has been done. The absence of written policies and procedures and the opaque nature of the oversight and approval process may be issues that District policymakers will want to address.

Council Review

The Council of the District of Columbia has final authority over the District's annual budget. Following the DME certification process, the Mayor submits all next-year enrollment projections in March as part of the proposed budget. The Council Committee on Education hears public testimony and may adjust next-year projections for DCPS or the public charter school sector. In the Fiscal Year 2018 budget, the Committee on Education reduced the projected number of students with disabilities in the public charter sector by 110 total students across all four levels of IEP: Level 1 was reduced by 11 students, Level 2 reduced by 27, Level 3 reduced by 36 students, and Level 4 was reduced by 36 students[25]. OCFO distributed these adjustments to the two largest charter LEAs, KIPP DC and Friendship public charter schools, for them to absorb.[26]

Key Findings

Currently the LEAs and the DME lack detailed documentation on formulas, adjustments, and certifications made in the enrollment projections process. While it is not recommended that certified enrollment projections be changed, if D.C. Council exercises the authority of post-certification changes, detailed documentation should be recorded. This information is important in improving enrollment projection accuracy and transparency over time.

The use of the projection portal by DCPS and the HUB by PCSB provide helpful and efficient communication between DCPS central office and local schools and charter LEAs. If the portal were expanded to include data inputs such as live birth data, housing data, historical and projection enrollments, and charter and DCPS enrollment and facility plans, then a catalogued longitudinal dataset could be shared between each LEA leading to an improved data driven and documented enrollment projections process.

Enrollment projections for 10 years by year, by grade provide a consistent platform that can be readily used for budgeting (next year projections) and facilities capital planning (5- and 10-year projections).

[1] Master Facility Plans were done in 1995, 1997, 2000, 2006, 2008, 2010, 2013, and DME is responsible for producing a 2018 plan by August 2018.
[2] D.C. Forecasts, Office of Planning State Data Center: https://planning.dc.gov/node/1212966
[3] DME Memo to Charter LEA Leaders, June 22, 2017: https://dme.dc.gov/sites/default/files/dc/sites/dme/publication/attachments/2017-18%20UPSFF%20Payment%20Letter.pdf
[4] D.C. Code § 38-2911 (c): https://code.dccouncil.us/dc/council/code/sections/38-2911.html
[5] D.C. Code § 38-2905: https://code.dccouncil.us/dc/council/code/sections/38-2905.html
[6] DCPS funded on projection, DC public charter schools Q1 on projected, Q2/3 unverified, Q4 on audited
[7] At Risk Defined in DC Code § 38-2901 (2A): https://code.dccouncil.us/dc/council/code/sections/38-2901.html
[8] D.C. Code § 38-2908 (c): https://code.dccouncil.us/dc/council/code/sections/38-2908.html
[9] D.C. Code § 38-2908 (2-3): https://code.dccouncil.us/dc/council/code/sections/38-2908.html
[10] June 22, 2017 Memo to Charter LEA Leaders from Jennie Niles, Deputy Mayor for Education: https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/2017-18%20UPSFF%20Payment%20Letter.pdf
[11] Yang, Rui, et al. "My School DC Lottery Program Evaluation of School Year 2017-18" American Institutes for Research. May 2018, page 16.
[12] DCPS FY19 School Budget Development Guide, pg. 7: http://www.dcpsschoolbudgetguide.com/fy19_budget_guide.pdf
[13] DCPS uses unaudited enrollment for the current school year because OSSE does not release verified audited enrollments for the current school year until the spring. Enrollments for the previous three years are audited.
[14] OSSE Regulations on Licensing of Child Development Facilities: https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Final%20Rulemaking%20for%20the%20Licensing%20of%20Child%20Development%20Facilities.pdf
[15] My School DC Common Lottery Results, March 30, 2018: http://enrolldcps.dc.gov/node/61
[16] https://enrolldcps.dc.gov/sites/dcpsenrollment/files/page_content/attachments/Generic%20Early%20Action%20Flyer%202017-18.pdf
[17] D.C. Municipal Regulations 5-A1 § 121: https://dcregs.dc.gov/Common/DCMR/RuleDetail.aspx?RuleId=R0020779
National Institute for Early Education Research www.nieer.org
[18] DCPS FY19 School Budget Development Guide, pg. 8: http://www.dcpsschoolbudgetguide.com/fy19_budget_guide.pdf
[19] LSAT chair people can see projections through the online portal but cannot make their own adjustments.
[20] Deputy Mayor for Education, "Responses to FY19 Budget Oversight Follow-up Questions", May 1, 2018.
[21] D.C. Code § 38-2906 (e): https://code.dccouncil.us/dc/council/code/sections/38-2906.html
[22] DME submitted documentation entitled "Public Charter Enrollment Projection Methodology".
[23] Ibid.
[24] Smith, Ahnna. "DC PCS SY19-20 Enrollment Projections Timeline for FY20 Budget Development". July 31, 2018.
[25] DC Council Committee on Education, "Report and Recommendations of the Committee on Education on the Fiscal Year 2018 Budget for Agencies under its Purview", May 18, 2017, pg. 65: http://dccouncil.us/files/user_uploads/budget/Marked-up_Committee_on_Education_FY18_Budget_Report.pdf
[26] Final FY18 PCS Projections by Campus and LEA – with Council adjustment explainer tab.

Section 5: Testing and Developing Methods for D.C.

The following studies were conducted to test and develop recommendations for an enrollment projection process and methodology for the District of Columbia.

- Accuracy of Current Projections – the accuracy of next year projections by school and grade developed using current processes and methods used for budgeting and staffing were evaluated
- Blind Study of Enrollment Projections - enrollment was projected using a traditional cohort survival method, and then compared the projections to actual enrollments by district, sector, grade-levels, and school
- Student Mobility in D.C. Public and Public Charter Schools - as a function of *gross* mobility was analyzed
- What Matters Most: Factors Affecting Projection Accuracy - how neighborhood and school characteristics correlated with the accuracy of 1-year enrollment projections conducted by a standard cohort projection model, for the case of District of Columbia public and charter schools for school year 2017-18.

Accuracy of Current Projections

One-Year Comparison of Audited to Projected Enrollment

The analysis of the accuracy of 1-year enrollment projections from DCPS utilizes two common statistical measures for comparing projected to actual (audited) enrollments – the Mean Absolute Percentage Error (MAPE) and the ratio of projection to enrollment (P/E). Each comparison summarizes each measure for analyses of aggregate totals, then by Ward, by year, by grade level, and by individual school. The comparison was completed for the school years 2013-2014 through 2017-2018; and PCS Schools for school years 2016-17 and 2017-18.

Key takeaways from the DCPS analysis include the following:

- The magnitude of projection errors varies by ward, year, and grade.

- The direction of projection errors (too low or too high) also varies by ward, year, and grade, in ways that often do not correspond to the magnitude of the errors.

This research also analyzes the accuracy of 1-year enrollment projections from PCS Schools for school years 2016-17 and 2017-18. Only one year of projections were compared as school-level data was only available for the 2016-17 school year.

Key takeaways from the PCS analysis include the following:

- PCS schools had about the same absolute projection errors across wards and showed reductions in projection error from the 2016-17 to the 2017-18 school years.

- PCS schools produced projections that skewed high in the 2017-18 school year.

Mean Absolute Percent Error (MAPE)

Basic Information

The Mean Absolute Percent Error (MAPE) is a standard measure of the accuracy of projections. Using terms for projected enrollment E_p and audited enrollment E_a., MAPE can be defined by the equation below:

$$MAPE = \left|\left(\frac{E_p - E_a}{E_a}\right) - 1\right| * 100\%$$

MAPE has the property of treating positive errors the same as negative errors – counting both equally as deviations from the desired outcome of a zero percent error. It is the standard used by the National Center for Education Statistics to evaluate the accuracy of its past enrollment projections (Hussar and Bailey 2017).

Results for DCPS Schools

For the total sample of all observed DCPS schools for SY 2013-14 through SY 2017-18, the MAPE has a value of 5.0%. In other words, for a given school at a given year, an average enrollment projection produced by the DCPS methods and process missed the audited projection by about 5% high or 5% low. Some schools had projections closer to the actual enrollments, and other schools had projections farther from the actual enrollments.

*Note that all statistical analysis results do not include CHOICE Academy at Emery and the Incarcerated Youth Program because of their small enrollments and unique characteristics, though their projection and enrollment characteristics are listed with other schools in Appendix C.

MAPE Results Overview

The top section of the following table summarizes values for the Mean Absolute Percent Error for 1-Year projections by DCPS for the school years SY 2013-14 to SY 2017-18.

The table below provides information about the numbers of observations in the samples, expressed in the number of schools observed times the number of years each school was observed. Five school years were assessed, but some sample sizes are not multiples of 5 because some schools did not have projection data and/or did not exist for all 5 years. MAPE values were weighted by the audited enrollments.

Mean Absolute Percent Error (MAPE) for DCPS Schools 2013-14 to 2017-18
By Ward, Year, Grade, and Grade Group

		School*Years Observed	Student*Years Observed	Mean Absolute Percent Error
Total DCPS		554	238,335	5
		School*Years	**Student*Years**	**MAPE**
By Ward	Ward 1	50	26,885	4.3
	Ward 2	40	14,760	4
	Ward 3	50	35,246	2.4
	Ward 4	76	37,005	4.7
	Ward 5	70	22,050	8.1
	Ward 6	93	35,694	3.8
	Ward 7	80	27,412	6
	Ward 8	95	39,283	7.2
		School*Years	**Student*Years**	**MAPE**
By Year	2013	109	46,358	5.4
	2014	109	47,515	5
	2015	110	47,911	5
	2016	113	48,457	5.1
	2017	113	48,094	4.6
		School*Years	**Student*Years**	**MAPE**
By Grade	Grade P3	339	11,456	9.1
	Grade P4	380	17,049	8.1
	Grade P5	380	20,849	10.8
	Grade 1	379	20,625	8.3
	Grade 2	378	19,749	7.8
	Grade 3	377	18,984	8.8
	Grade 4	376	17,758	8.5
	Grade 5	375	15,540	9.6
	Grade 6	146	11,121	13.6
	Grade 7	144	11,452	7.5
	Grade 8	143	11,715	7.4
	Grade 9	79	17,648	16.8
	Grade 10	78	12,662	13.3
	Grade 11	77	11,685	9.8
	Grade 12	76	10,647	8.2
		School*Years	**Student*Years**	**MAPE**
By Grade Group	Grade P3 - Grade 5	386	142,010	3.7
	Grade 6 - Grade 8	148	34,288	7
	Grade 9 - Grade 12	79	52,642	7
	Adult	9	5,337	20.7

Summary of Results for DCPS (MAPE)

Results by Ward

The values of MAPE were highest for Wards 5, 8, and 7 (8.1%, 7.2%, and 6.0% respectively) and lowest for Ward 3 (2.4%) – meaning projections deviated more from actual enrollments Wards 5, 7, and 8 and less in Ward 3. Differences in the accuracy of projections can depend on a number of factors, such as migration rates, variability in movement between public and public charter schools, and/or the effectiveness of school principals and other officials at negotiating accurate enrollment projections during the projection process. This descriptive analysis cannot determine the relative importance of those processes, but our later analysis of projection errors in the blind study revisits this issue and provides evidence that student mobility from school to school is an important part of the explanation.

Results by Year

Values of MAPE were highest in 2013-14 (5.4%) and lowest in 2017-18 (4.6%). In other words, the results of the DCPS method and process have been improving in recent years, at least by this statistical measure. This analysis is not able to establish why such an improvement might be occurring. The improvement could reflect migration patterns or school choice patterns in 2017 being approximately the same as the average of previous years, or possibly an improvement in the projection process itself.

Results by Grade

Values of MAPE were highest in grades 9, 6, 10, and Kindergarten (16.8%, 13.6%, 13.3%, and 10.8% respectively). Errors in enrollment projections tend to be largest at the grade levels where students typically transition into high school, into middle school, and into elementary school. Another important result is that the errors at any given grade level tend to exceed the errors for entire schools, as a percent of enrollment. MAPEs by grade level range from 7.4% to 16.8%, but overall MAPEs at the school level average only 5.0%. This result suggests that error processes are somewhat independent for adjacent grades – that the factors governing deviations in enrollment for one grade may be somewhat different from factors affecting adjacent grades at the same school.

Results by Grade Group

Many DCPS schools have all their grade levels in one of these groups. Other schools, including schools with education campuses, may have enrollments in several of these categories. Values of MAPE are by far highest for adult enrollments (20.7% with a very small sample) and lowest for elementary enrollments (3.7%)

These results correspond roughly to historical average MAPE values for standard cohort-component projection methods, as estimated by the NCES for D.C. public school enrollments dating back to SY 1984-85. (6.6% for high school, 4.3% for Pre-Kindergarten to 8th grade). This comparison to NCES data is useful in that it can provide a sense of the relative unpredictability of D.C. enrollments to public school enrollments in other states. NCES results show that projections of D.C. public school enrollment historically have far higher error rates than projections for other states. Hence, projections for individual schools can only be so accurate if projections for all of DCPS typically have large errors, because of the District of Columbia's unique demographic, economic, and political circumstances.

Projection to Enrollment Ratios (P/E)

Background

Compared to the Mean Absolute Percent Error (MAPE), the ratio of Projection to Enrollment is a simple measure, but one that provides more information. The ratio of Projection to Enrollment is shown in the equation below:

$$P/E = \frac{E_p}{E_a}$$

Where MAPE has the property of treating positive errors the same as negative errors, P/E allows the reader to distinguish between errors where the projection was too low (P/E < 1) and errors where the projection was too high (P/E > 1).

The ability to discern high errors from low errors has practical significance for the DCPS projection process. If a school's resource allocation is based on enrollment projections, an error where the projection is too low means that school receives fewer resources than it requires for its actual enrollment. Conversely, if the projection is too high, such an error is innocuous or may even be beneficial if the school doesn't have to reimburse the extra money. Such asymmetrical consequences of projection error show that projection methodologies should be considered not only for the total magnitude of errors in enrollment projection, but also for the relative frequency of errors that miss high or low.

The table below provides a simple guide for easy interpretation of P/E ratios. Yellow represents errors of consequence to the school – errors where the projection is lower than the audited enrollment, so a school supposedly receives fewer resources than it requires. Gray represents enrollment projections that are essentially correct, and blue represents errors where the projection is higher than the audited enrollment, which implies that a better projection would have shifted some resources to other schools in the District. As a general rule for visualizing the magnitude of projection errors, we chose to divide projection/enrollment ratios into seven categories to correspond to the number of students under- or over-projected per classroom of 25 students.

Guide to interpreting Ratios of Projected to Audited Enrollments
With impact presented in Units of Students per Class

Projection / Enrollment Ratio	Impact per 25-Student Class Size
0.899 or less	Projection too low by 3 or more students per class
0.900 – 0.939	Projection too low by 2 students per class
0.940 – 0.979	Projection too low by 1 student per class
0.980 – 1.019	Same projected as enrolled
1.020 – 1.059	Projection too high by 1 student per class
1.060 – 1.099	Projection too high by 2 students per class
1.100 or more	Projection too high by 3 or more students per class

Figure 17 Guide to Interpreting Ratios of Projected to Audited Enrollments

Summary of Results DCPS (P/E)

The figure below shows the distribution of projection to enrollment ratios for 1-Year projections by DCPS for the school years 2013-14 to 2017-18. The result that stands out is that cases where the projection is too high for the enrollment (blue) have outnumbered cases where the projection is too low for the enrollment (yellow). This asymmetrical pattern suggests that few schools are shortchanged by under-projections but that the allocation of resources might be somewhat inefficient overall as a result. The available data do not provide clear indications of why such asymmetry is occurring. Possibly some of the asymmetry could be coming from the existing cohort survival methodology, school- and district-level enrollment trends moving slightly but systematically away from the trends of the previous few years. It is also possible that some of the asymmetry could arise during the stages at which adjustments are made to the cohort survival projections, if those projection adjustments tend to occur more frequently in one direction than the other. Whatever the source, the fact of asymmetry in enrollment projection in a few historical years does not prove that asymmetry would continue in the future. Hence, policy makers are encouraged to be cognizant of problems both with the magnitude and the direction of projections errors, but recommend a primary focus on efforts to reduce the magnitude of projection error. Statistical processes leading to the magnitude of error are fairly well studied, so efforts to improve methodologies by reducing the overall magnitude of projection error are likely to be more robust than efforts to address recent asymmetry in projection error. Furthermore, if the overall magnitude of projection error can be decreased, the magnitude of any asymmetry will also be decreased.

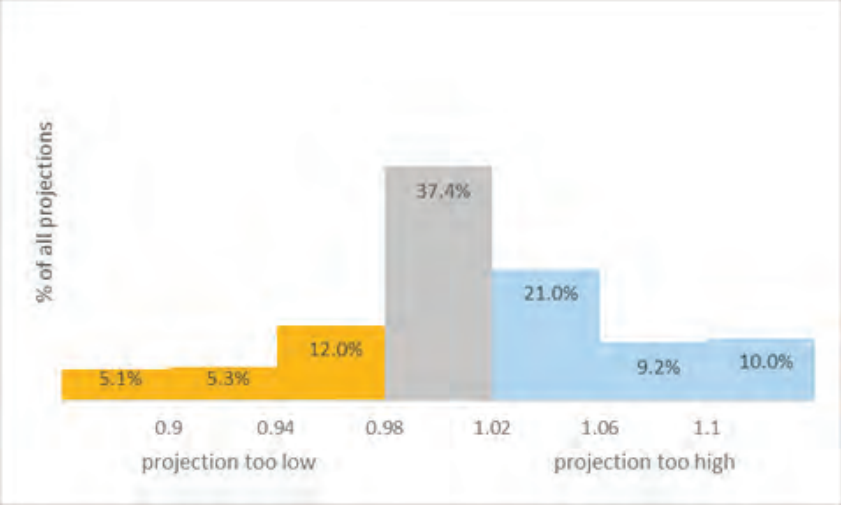


Figure 18 Ratios of Projected to Audited Enrollments for DCPSs Schools 2013-14 to 2017-18

Results by Ward

Wards 2, 1, and 3 had the highest percentage of projections that matched audited enrollments (54.3%, 46.8%, and 46.4% respectively). Wards 5, 8, and 7 had the lowest percentage (20%, 21.3%, and 28.6% respectively).

The distribution of low and high projection errors also varied by ward:

- Ward 4 had more projection errors that were too low than too high, but in all other wards the high projection errors outnumbered the low ones.
- In Ward 5 a full 22.7% of projections exceeded the audited enrollments by a ratio of 1.1 or greater, an equivalent to three students more projected than enrolled per 25-student class.

- Ward 3 was notable in that while a significant share of its enrollment projections had some error, the errors were small, almost never exceeding one student too high or too low per 25-student class.

A major finding is that wards differ not only in the absolute magnitude of their enrollment errors, but also in the symmetry of those errors.

See Appendix C: Figures 2A through 2H show projection to enrollment ratios calculated separately for each Ward.

Results by Year

Results by year ratios of projected to audited enrollments show a trend toward projection errors being consistently on the high side. 49.6% of projected school enrollments for SY2017/18 exceeded the actual enrollments by a ratio of 1.02 or greater.

See Appendix C: Figures 3A through 3E

Results by Grade

In grades kindergarten, 11, and 12, the projection errors are skewed low overall. Conversely, in grades 9 and 10, the projection errors were particularly likely to skew high, resulting in projections that significantly exceeded actual enrollments.

These results suggest additional concerns to consider in developing models and processes for enrollment projections. The MAPE statistics demonstrated the enrollment projections are subject to uncertainty at school transition years like grades 6 and 9, but the P/E statistics also suggest that the cohort survival method and/or the adjustment process has been producing higher than expected projections through the high school years.

See Appendix C: Figures 4A through 4O show the projection to enrollment ratios calculated separately for each grade level.

Results by Grade Group

The tendency for projection errors to skew high is evident at the elementary (PK3 to 5), middle school (6 to 8), and high school (9 to 12) levels. Adult enrollment projections skewed low in the very small numbers of cases observed.

See Appendix C: Figures 5A through 5D shows projection to enrollment ratios calculated for groups of grades.

Findings for Charter Schools

The table below shows mean absolute percent error (MAPE) for PCS schools, by ward, year, grade, and grade group of projections and enrollments of Public Charter Schools for the school years 2016-17 and 2017-18 only. For other years, projection data for PCS schools were available at the LEA level but not the school level.

Mean Absolute Percent Error (MAPE) for PCS Schools 2016-17 to 2017-18

		School*Years	Student*Years	Mean Absolute Percent Error	Equivalent DCPS MAPE
Total PCS		238	84,884	5.1	5.1
		Schools	**Students**	**PCS MAPE**	**DCPS MAPE**
By Ward	Ward 1	21	11,040	4	4.3
	Ward 2	6	2,565	6.7	4
	Ward 3	0	0	0	2.4
	Ward 4	39	11,696	3.6	4.7
	Ward 5	60	21,228	6.9	8.1
	Ward 6	32	9,374	4.6	3.8
	Ward 7	40	13,275	4.1	6
	Ward 8	40	15,706	5.6	7.2
		Schools	**Students**	**PCS MAPE**	**DCPS MAPE**
By Year	2016	118	41,491	6	5.1
	2017	120	43,393	4.3	4.6
		Schools	**Students**	**PCS MAPE**	**DCPS MAPE**
By Grade	Grade P3	115	6,541	14.1	9.1
	Grade P4	120	7,088	11.4	8.1
	Grade P5	113	6,600	12.5	10.8
	Grade 1	109	6,067	8.7	8.3
	Grade 2	108	5,679	9.2	7.8
	Grade 3	105	5,233	8.1	8.8
	Grade 4	94	4,730	8.6	8.5
	Grade 5	96	4,803	11.1	9.6
	Grade 6	94	5,572	11.7	13.6
	Grade 7	91	4,992	9.4	7.5
	Grade 8	87	4,487	9.8	7.4
	Grade 9	46	4,969	25.3	16.8
	Grade 10	41	3,412	12.9	13.3
	Grade 11	38	2,777	9.1	9.8
	Grade 12	37	2,385	11.8	8.2
		Schools	**Students**	**PCS MAPE**	**DCPS MAPE**
By Grade Group	Grade P3 – 5	167	46,323	5.7	3.7
	Grade 6 - 8	96	15,051	7.7	7
	Grade 9 – 12	46	13,543	7.9	7
	Adult	10	7,482	4.1	20.7

PCS Findings for Mean Absolute Percent Error (MAPE)

Across the two-year comparison, the MAPE values for PCS schools were comparable in that the same grades that had high levels of uncertainty in their absolute errors in DCPS schools also had high levels of uncertainty in those grades in PCS schools. Unlike DCPS schools, PCS schools had about the same absolute projection errors across wards. PCS schools showed very strong reductions in projection error from the 2016-17 to the 2017-18 school years.

Findings for Projection/Enrollment Ratios (P/E)

The figure below shows distributions of projection to enrollment ratios (P/E) for PCS schools. One point of interest is that PCS schools are much like DCPS schools in producing projections that are more likely to skew high (blue color) than low (yellow color).

See Appendix C - Figure 7, 8, and 9 in by Ward, by Grade group, and by Year, respectively

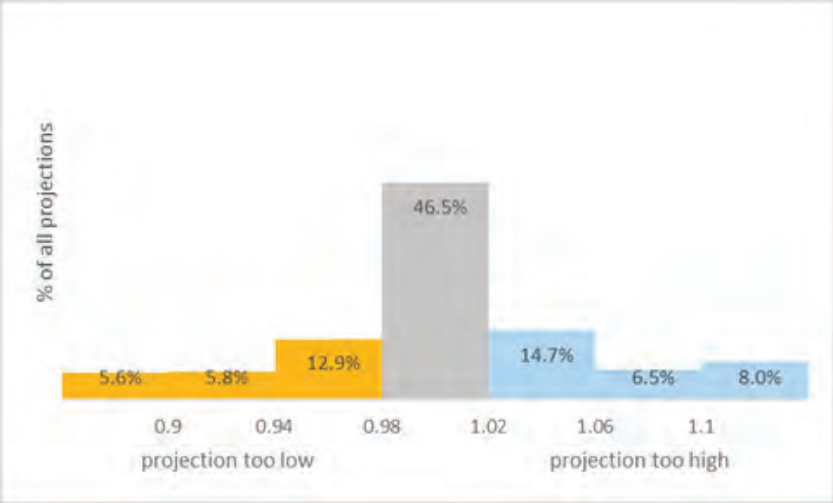


Figure 19 Ratios of Projected to Audited Enrollments for PSC Schools 2016-17 to 2017-18

Results for by Year and for Individual Schools

See Appendix C - Table 4 is a table of projection to enrollment ratios for each DCPS school in each year, for reference purposes.

See Appendix C - Table 5 is a table of projection to enrollment ratios for each PCS school in 2016-17 and in 2017-18, for reference purposes.

Blind Study of Enrollment Projections

Cooperative Strategies conducted a series of blind study enrollment projections to evaluate the accuracy based on the application of different projection ratios within the cohort survival model. The question posed in the blind study is, "How accurate are next year enrollment projections when using only the simple mathematical model that applies a standard set of projection ratios based on historic DCPS and PCS school-level data and survival ratios?"

A survival ratio is defined as the percentage of students that progress from grade to grade, year to year. A projection ratio is the factor that is applied to the historical enrollment to calculate projected enrollment. In this study, projection ratios were calculated by applying different averages of historical survival ratios.

This exercise was conducted using two different time periods of historical enrollment data, 2008-09 through 2015-16 and 2008-09 through 2016-17. Due to extensive boundary changes implemented in the 2014-15 school year, the projection ratios used in the blind study were limited to two and three years of historical survival ratios.

The projection ratios used in the blind studies are described below.

Projection Ratios Used	**Description**
2-Year Simple Average	Simple average of the most recent two years of survival ratios by school by grade.
2-Year Weighted Average	Weighted average of the last two years of survival ratios, by school by grade. The previous years' ratio will have higher influence on the projection ratio. Weights exponentially decay from 1 (at the most recent year of available data) to 0.05 (at the first year of available data or one years before the most recent year of data, whichever is larger).
3-Year Simple Average	Simple average of the most recent three years of survival ratios by school by grade.
3-Year Weighted Average	Weighted average of the last three years of survival ratios by school by grade. The last years' ratio will have the highest influence on the projection ratio, then the next year prior, and so on. Weights exponentially decay from 1 (at the most recent year of available data) to 0.05 (at the first year of available data or two years before the most recent year of data, whichever is larger).

The intent of this exercise was to compare the output from each set of enrollment projections to the actual audited enrollment to determine which projection ratios yields the greatest number of schools most accurately. It should be noted that one single approach regarding which projection ratios to use may not be the best application for each school and may fluctuate from year to year. For example, if a boundary change occurs 2 years prior to the development of enrollment projections, using projection ratios for more than 2 years would not likely be appropriate. In this case, a 2 year simple average or 2 year weighted average would likely be more appropriate.

For all blind study projections, all schools were projected assuming their most recent grade configuration in the historical data used. For example, if in 2016-17 a school had a grade configuration of kindergarten through 4th, the projection would reflect kindergarten through 4th, but the actual enrollment for comparison may reflect kindergarten through 5th.

The charts below compare each of the projections for DCPS and PCS schools independently. The numbers and bars in each chart correspond to the number of schools projected that were closest to the actual audited enrollment for each projection type. This shows that for DCPS, the 3-year simple average resulted in more schools (35) closer to the actual audited enrollment than all other projections. For PCS, the 2-year weighted resulted in more schools (36) closer to the actual audited enrollment than all other projections.

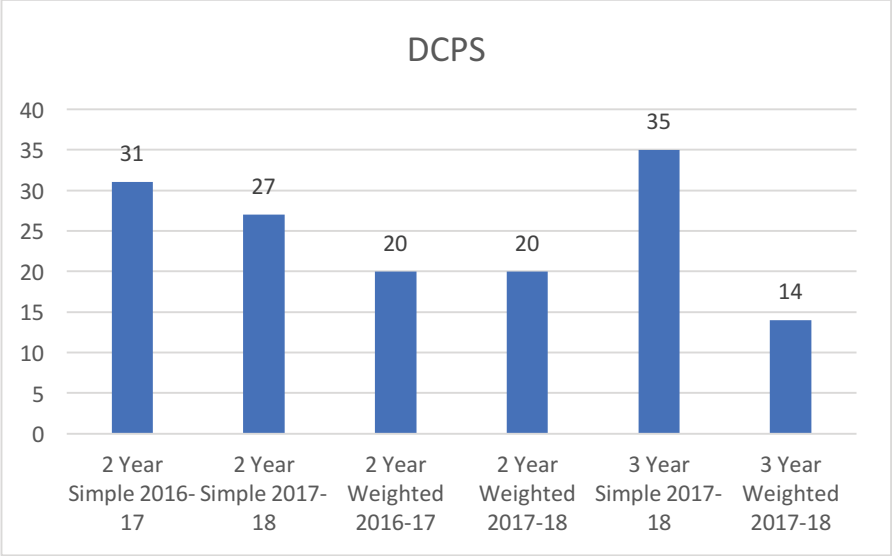


Figure 20 Number of DCPS Schools Projected Closest to the Actual Audited Enrollment for Each Projection Type

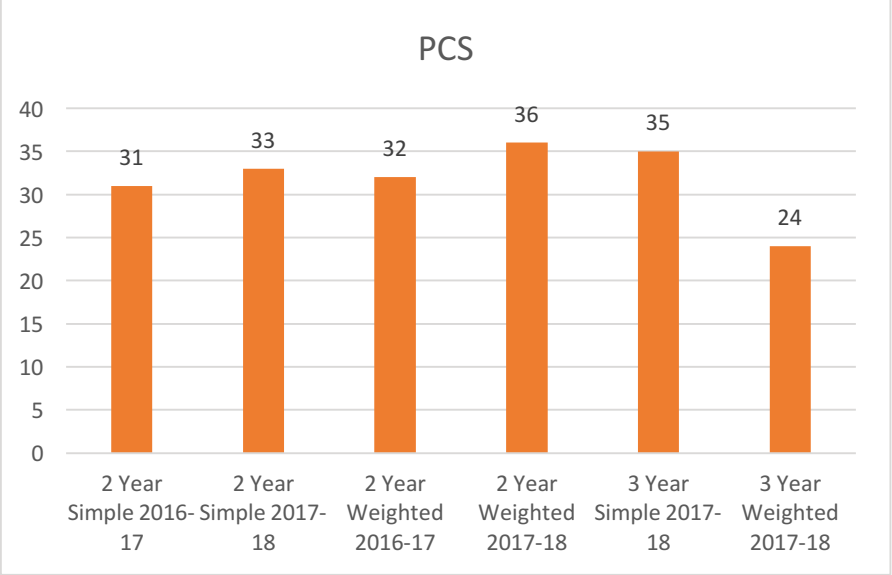


Figure 21 Number of PCS Schools Projected Closest to the Actual Audited Enrollment for Each Projection Type

Because PCS schools yielded a similar number of schools more accurate with 36 using the 2-year weighted and 35 using the 3 year simple, a deeper analysis of the net and absolute error of all schools projects that the 2-year weighted projection yields less error. The table below illustrates the percent error for the two models for PCS schools.

PCS Error Analysis		
Projection Model	**Net Projection Error**	**Absolute Projection Error**
2 Year Weighted Average	-4%	12%
3 Year Simple Average	7%	22%

Based on this information, the baseline projections developed for DCPS schools are based on the 3-year simple average of survival ratios and the projections for PCS schools are based on the 2-year weighted average of survival ratios.

Student Mobility in D.C. Public and Public Charter Schools

Along with neighborhood characteristics ("demand" factors) and school characteristics ("supply" factors), student mobility is an additional characteristic of a school that can affect how well projection methods match projected to actual enrollment.

Standard cohort survival models of enrollment incorporate *net* student mobility. The grade to grade survival ratio that is used for enrollment projections is a function that includes the students who moved into a school for a given grade, minus the students who moved out of the school after the previous grade. The survival ratio inherently captures in aggregate the net effects of student dropout, students being held back, and students skipping over a grade.

We define student mobility as a function of *gross* mobility, which can be thought of as the extent to which the individuals within student population change from year to year, even if overall enrollment remains steady. This form of student mobility would be expected to have some relationship to the amount of uncertainty in enrollment projections. If a school has been experiencing "churn" in the past, then future enrollments could be likely to depart from the trajectory of past enrollments, subject to changes in the rate that students are moving in, the rate that they are moving out, or both. In contrast, a school with smaller levels of student mobility can be expected to have future enrollments that are more stable and easily predicted by cohort survival models, even if the schools have had similar progression ratios in the past.

We define student mobility as a property of a school in *the transition between adjacent grades*, not of the grades themselves. As such, student mobility is a function of three values:

- S, the number of students enrolled in the school at grade X in year Y, who *stay* enrolled in the same school at grade X+1 in year Y+1.
- I, the number of students not enrolled in the school at grade X in year Y, but who move *in* to the school for enrollment in grade X + 1 in year Y + 1.
- O, the number of students enrolled in the school at grade X in year Y, but who move *out* of the school and are not enrolled in grade X + 1 in year Y + 1.

In our definition, a student's movement in or out can occur as a result of residential mobility, school choice, dropping out, or any other factor that determines enrollment. We propose the following equation to define student mobility M from grade X to X+1 in year Y to Y+1:

$$M = (O_{(X,Y)} + I_{(X+1,\,Y+1)}) \;/\; (S_{(X+1,\,Y+1)} + O_{(X,Y)} + I_{(X+1,\,Y+1)})$$

Under this definition, movement out and movement in are defined as positive values, so values of M can range from 0 to 1, with 0 meaning no turnover (all the students are stayers) and 1 meaning complete turnover (all the students are movers in or movers out).

Two transitions of concern are the transition from elementary to middle school from grade 5 to 6, and the transition from middle to high school from grade 8 to 9. To calculate mobility for these grade transitions, we use DCPS records of official feeder patterns from elementary to middle and from middle to high school. PCS information on feeder schools was not available. In light of this data difficulty and of the potential uniqueness of student mobility at these transitions, we have produced and analyzed all mobility information under multiple inclusion criteria: all grades PK3 – 12, grades K – 12, and grades PK3 – 12 excluding transitions from grades 5 – 6 and 8 – 9.

We developed separate information on "out" and "in" movement, of which the sum of those two values was the total measurement of churn (on the condition that "out" is measured at one grade level and "in" is measured at the following grade level). After comparing results for these and other measures, we determined that the overall churn was a crucial determinant of the magnitude of projection error, and that, furthermore, high levels of "churn" were almost invariably a combination of high levels of students moving "in" AND high levels of students moving "out". Sensitivity models that examined separately schools that were experiencing rapid changes in enrollment (Where "in" was much higher or lower than "out") confirmed that our story about overall churn was robust to selection to remove such cases

The table below shows results for summary statistics on student mobility, by grade transition, by year, by ward, and by type of school. We note three significant findings about student mobility in the District of Columbia schools.

1. Student mobility has been decreasing over the last three years.
2. Student mobility is highest in Wards 7 and 8, and lowest in Ward 3.
3. Student mobility is higher for PCS schools than for DCPS schools, on average.

Mobility Index for Individual Schools

See Appendix C - Tables 6,7, and 8 are tables of mobility Indices for each school in each year (2014 – 2016), for reference purposes.

Summary Statistics for Student Mobility in D.C. Schools, SY2014 to SY2017

	Stay	Move out	Move in	Mobility
Grade P3 – P4	12,493	4,607	8,789	0.517
Grade P4 – K	13,940	6,976	7,998	0.518
Grade K – 1	15,221	6,508	5,835	0.448
Grade 1 – 2	16,327	4,562	3,874	0.341
Grade 2 – 3	15,836	4,218	3,652	0.332
Grade 3 – 4	13,774	4,972	4,456	0.406
Grade 4 – 5	12,001	5,191	4,869	0.456
Grade 5 - 6	3,830	11,088	11,003	0.852
Grade 6 – 7	11,375	2,856	2,704	0.328
Grade 7- 8	11,225	2,351	2,234	0.29
Grade 8 – 9	2,122	10,643	13,356	0.919
Grade 9 – 10	9,930	5,910	2,632	0.462
Grade 10 – 11	8,970	3,268	2,718	0.4
Grade 11 – 12	8,698	2,701	2,186	0.36
Total*	149,790	54,120	51,947	0.415
SY14 to SY15*	46,690	19,043	17,778	0.441
SY15 to SY16*	50,483	17,149	17,101	0.404
SY16 to SY17*	52,617	17,928	17,068	0.399
Ward1 *	13,426	3,935	3,702	0.363
Ward2 *	2,926	961	892	0.388
Ward3 *	9,749	1,754	2,866	0.322
Ward4 *	24,636	6,625	6,669	0.35
Ward5 *	20,362	7,493	6,863	0.414
Ward6 *	14,863	5,017	4,479	0.39
Ward7 *	27,888	11,402	10,479	0.44
Ward8 *	32,934	15,030	13,520	0.464
PCS*	61,890	26,349	23,489	0.446
DCPS*	87,809	27,257	28,458	0.388

*Note: Due to incomplete data on feeder schools for the PCS system, total values exclude mobility from grade 5 to 6 and from grade 8 to 9.

What Matters Most: Factors Affecting Projection Accuracy

The research on "what matters most" analyzes how neighborhood and school characteristics correlated with the accuracy of 1-year enrollment projections conducted by a standard cohort projection model, for the case of District of Columbia public and charter schools for school year 2017-18.

The objective of this research was to determine how the information might be used to inform the process DCPS and PCS use to produce 1-year enrollment projections. The methodology described for assessing how neighborhood and school characteristics were associated with results of a "blind" study compared historical enrollments to the enrollments that would have been projected based on a cohort survival model using previous years' data.

Key findings from this analysis include the following:

- For DCPS schools, the single most important characteristic that predicted projection error was the school's student *mobility,* or how many students entered and left the school from year to year.
- For DCPS schools, some other neighborhood and school characteristics were associated with projection errors, probably by influencing student mobility.
- For PCS schools, the completion in the previous year of construction that resulted in a shift in stated school capacity, was associated with projection error. In other words, *a recent sudden shift* in stated school capacity was associated with projection error – in other words, a cohort survival model alone cannot anticipate future effects of recent changes in school capacity.

This research concludes by discussing how these findings might be incorporated into the existing process for developing enrollment projections.

Objectives of this Analysis

This study identifies neighborhood and school characteristics that make a standard cohort survival model particularly susceptible to projection errors. There are two ways such an analysis could be used to improve projection methodologies and procedures.

1.) Identify additional variables to incorporate in a statistical methodology for enrollment projections
2.) Identify characteristics to guide and justify decisions for the human process of adjusting enrollment projections after the initial statistical methodology is used

We see this study as being primarily of use for the second objective. DCPS and other school systems use a standard cohort survival method (described elsewhere in this project) to produce baseline sets of enrollment projections.

Methods of this Analysis

This analysis includes the following data for each DCPS and PCS school:

- The outcome of interest is the difference between actual enrollment in 2017-18 and the enrollment a basic cohort survival model would have projected, as described in *Blind Study of Enrollment Projections* portion of this report.
- The associations between blind study projection errors, and characteristics of the neighborhoods in the high school catchment area of that school were explored. This information comes from the *Demand and Supply Factors Affecting Enrollment Projections* section of the report
- The associations between blind study projection errors and the timing of changes in school characteristics such as gross square footage, student capacity, and recent completion of renovation, in cases where such information is available. This information comes from *Demand and Supply Factors Affecting Enrollment Projections* section of this report
- The association between blind study projection error and the student mobility into and out of each grade. For each grade, "stayers" are defined as students who attended the school (or its feeder schools) in the previous grade in the previous year and who attend the school in the current grade in the current year. "In" students moved into the school in the current year, and "out" students moved out of the school from the previous year, either by changing schools or by leaving school. This information comes from *Student Mobility in D.C. Public and Public Charter Schools* section of the report
- The relationship between blind study projection error and the schools' racial and ethnic diversity as defined by the percent Black/African American, percent white and percent Hispanic at each school was examined. This information was based on the student data files provided by OSSE.
- The relationship between blind study projection error and the school's frequency of being a first choice in the online school choice application and lottery (plus a control variable for PCS schools that do not participate in the lottery) was examined. This data was provided by My School D.C.

The main analysis is a series of simple ordinary least squares regressions at the school level, performed one at a time for each potential explanatory variable and including controls for whether the school serves elementary, middle, or high school students.

$$Ln(\text{projected enrollment} / \text{actual enrollment}) =$$

$$b_0 + b_1(\text{one neighborhood or school characteristic}) + b_2(\text{school serves middle school students}) + b_3(\text{school serves high school students})$$

In addition to the results shown here, sets of sensitivity analyses were run for a number of alternative model specifications and sampling frames, such as the following:

- Models of other grade groups than the PK3 – 12 used in the main analysis: K – 12 only and grades 1 – 5, 7 – 8, and 10 -12 only (no feeder schools).
- Enrollment projections based on average and weighted averages of survival ratios for the most recent 2 and 3 years
- Alternative specifications for the dependent and independent variables in the analysis.
- Multivariate models that include groups of the independent variables estimated together in the same model.
- A combined model for DCPS and PCS schools estimated together.

These analyses showed no substantive difference from the findings that follow.

Findings

The table below shows summaries of the coefficients from models for the associations between 2017-18 projection error as measured in the blind study and the 3-year average values for the neighborhood and school characteristics that might have a relationship with projection error. The analyses include results for DCPS schools (sample size = 113) and PCS schools (sample size = 110). Rather than present the results in their original coefficients, standard errors, and significance values, we have provided a description of the nature of the result for coefficients that were statistically significant.

Average Neighborhood and School Characteristics Associated with Projection Error in SY2017
Based on 3-Year Averages from 2014-2016

For DCPS Schools		
	Association with Magnitude of Projection Errors	**Association with Direction of Projection Errors**
Characteristics of High School Catchment Area		
Small total population	**Greater error**	**(Some) upward error**
Lower % of Adults who are College Graduates	**Greater error**	**(Some) upward error**
Low median home sale prices	**Greater error**	**(Some) upward error**
Number of Building Permits Issued	**- - -**	**- - -**
School and Other Characteristics		
Student Mobility (Into AND Out of School)	**Greater error**	**(Some) upward error**
Few or No Selections as First Lottery Choice	**Greater error**	**- - -**
Proportion of Black/African American Students	**Greater error**	**(Some) upward error**
Proportion of Hispanic/Latino Students	**- - -**	**- - -**
For Public Charter Schools		
Characteristics of High School Catchment Area	**- - -**	**- - -**
Small total population	**- - -**	**- - -**
Lower % of Adults who are College Graduates	**- - -**	**- - -**
Low median home sale prices	**- - -**	**- - -**
Number of Building Permits Issued	**- - -**	**- - -**
School and Other Characteristics		
Student Mobility (Into AND Out of School)	**Greater error**	**(Some) upward error**
Few or No Selections as First Lottery Choice	**- - -**	**- - -**
Proportion of Black/African American Students	**- - -**	**- - -**
Proportion of Hispanic/Latino Students	**- - -**	**- - -**

For the DCPS schools, three of the neighborhood characteristics were associated with lower projection errors, at least when considered separately.

- A larger population in the high school catchment area
- Higher proportion of college graduates in the adult population
- Higher median home sale values

All were associated with "improved" performance by the blind study, in the sense that errors had smaller magnitude and projections were less likely to exceed actual enrollments. (On average, the blind study for DCPS in 2017 projected enrollments that were slightly higher than the actual enrollments.) Conversely, neighborhoods with smaller populations, lower education levels, and lower median home sale values were not as well served by the basic cohort survival model.

For the DCPS schools, the following additional characteristics were also associated with projection errors.

- Higher levels of student mobility and a higher percentage of Black/African American students in the student body were associated with a larger magnitude of error in enrollment projection, and in projections that exceeded actual enrollments.
- Being frequently picked as a first choice in the student lottery was associated with a smaller magnitude of projection error.

These results for projection error in our blind study – in particular, our results for student mobility and race - might help us understand some of the patterns in projection error that have been observed in *actual* DCPS projections. In the analysis from the blind study, the large magnitude of error observed for schools with a high proportion of Black/African American students is largely explained by the fact that DCPS schools with high proportions of Black/African American students also experience high levels of churn. It makes sense that substantial mobility in and out of schools from each grade level to the next would lead to more difficulty in making accurate enrollment projections. Differences in student mobility across schools might also explain why past DCPS projections have shown differences in the magnitude of projection error across Wards, with more significant errors in predominantly African-American Wards 5, 7 and 8. Differences in student mobility across schools might also explain why past DCPS projections have shown differences in the magnitude of projection error across Wards.

Please note that these findings come from an analysis of projection error in the blind study of hypothetical projections, so their implications for actual DCPS projections are not proven. Some of the school-level differences in errors in the actual DCPS projections could be caused by differences in the adjustment process that occurs after the initial cohort-component projections are completed. For example, if schools differ systematically in how frequently adjustments are requested, in how frequently adjustments are granted, and/or in how frequently the granted adjustments are accurate, none of those processes would be detectable in our analysis based on data from the blind study.

The bottom half of the table above shows the results of the same models estimated for PCS schools. As is the case for DCPS schools, higher levels of student mobility were associated with a larger magnitude of error and projections that exceeded actual enrollments in the PCS schools. Other neighborhood and school characteristics, however, showed no clear associations with projection error.

The table below shows results from an additional set of analyses. The variables tested for associations with projection error were NOT the average values from 2016 but were instead the amount that the 2016 values deviated from the 2014-2016 average. These analyses were designed in response to concerns that the standard cohort survival model, by using averaged enrollment information from earlier years, might be too late to respond to sudden recent changes in the enrollment environment.

The results from the table below suggest that sudden changes in school and neighborhood characteristics are not "missed" by a cohort survival model, with one possible exception. In the models for PCS schools, a change in student capacity in 2016 predicted a change in enrollment in 2017 that was NOT anticipated by the cohort survival model. The "change in student capacity" variable in the DCPS model had similar signs, but the coefficients were smaller than the threshold for statistical significance. There was also a statistically significant coefficient for a sudden increase in student mobility for the PCS schools only, but a clear explanation for this result was not found.

Previous-Year Shifts in Neighborhood and School Characteristics Associated with Projection Error in SY2017
Based on 2016 Values Compared to 3-Year Averages from 2014-2016

For DCPS Schools		
	Association with Magnitude of Projection Errors	**Association with Direction of Projection Errors**
Characteristics of High School Catchment Area		
Small Total Population	- - -	- - -
Lower % of Adults who are College Graduates	- - -	- - -
Low median home sale prices	- - -	- - -
Number of Building Permits Issued	- - -	- - -
School and Other Characteristics		
Student Mobility (Into AND Out of School)	- - -	- - -
Few or No Selections as First Lottery Choice	- - -	- - -
Proportion of Black/African American Students	- - -	- - -
Proportion of Hispanic/Latino Students	- - -	- - -
Gross Square Footage	- - -	- - -
Completion of Building Renovation	- - -	- - -
School Capacity		
For Public Charter Schools		
Characteristics of High School Catchment Area		
Small Total Population	- - -	- - -
Lower % of Adults who are College Graduates	- - -	- - -
Low median home sale prices	- - -	- - -
Number of Building Permits Issued	- - -	- - -
School and Other Characteristics		
Student Mobility (Into AND Out of School)	**Less error**	- - -
Few or No Selections as First Lottery Choice	- - -	- - -
Proportion of Black/African American Students	- - -	- - -
Proportion of Hispanic/Latino Students	- - -	- - -
Gross Square Footage	- - -	- - -
Completion of Building Renovation	- - -	- - -
School Capacity	**Greater error**	**Downward error**

The results indicate that for DCPS schools, several neighborhood, school, and other characteristics might be used to identify schools for which a baseline cohort survival model is more subject to error. However, these results are estimated for each variable separately, so it is not clear how many or which of these variables should be used to identify a school as a candidate for projection adjustment.

To turn these results into a set of potential recommendations for persons involved in the enrollment projection process, we looked for empirical or practical evidence for focusing on one variable. Normally, multivariable regression could be used as one source of evidence, but our multivariate models with all the variables together

contained too many unknowns for clear interpretations of the results (that is, the standard errors expanded until nothing was statistically significant anymore.) As an alternative approach, we examined possible associations between the neighborhood and school characteristics that might suggest whether one variable is mediating the others.

We focused on the student mobility variable, the characteristic with the clearest potential mechanism for making projections less accurate. If there are a lot of students moving into and out of a school from year to year, then there are two dimensions of uncertainty that could make projections less accurate – variability in how many students move into the school, and variability in how many students move out. The hypothesis is that increased mobility is the reason that other neighborhood and school characteristics are associated with less accurate projections.

For example, a school in a neighborhood with low median home sale values might experience higher than average "churn" from year to year, which tends to result in less accurate enrollment projections. If so, then a projection adjustment based on student mobility alone would be sufficient, and an additional adjustment for low median home values would be an incorrect over-adjustment.

The table below shows correlation coefficients between student mobility and the other variables that showed a significant relationship with projection errors. Simple correlation results cannot be conclusive, but these results show a nearly perfect correspondence. Each DCPS variable that is significantly associated with projection error is also moderately correlated with student mobility, and in the predicted direction. Similarly, for PCS schools, student mobility is a significant predictor of projection error, but none of the other variables are, and those variables are also not clearly correlated with student mobility, except for a correlation between percent black and mobility that is substantial but still smaller than the same correlation in DCPS schools.

Correlations Between Student Mobility and Other Key Variables
Characteristics Associated with Projection Error in DCPS Schools are all Correlated with Student Mobility

For DCPS Schools		
	Correlation with Student Mobility	**Association with Projection Error in Table Above**
Small Total Population	**-0.19**	**Significant, Negative**
Lower % of Adults who are College Graduates	**-0.25**	**Significant, Negative**
Low Median Home Sale Prices	**-0.28**	**Significant, Negative**
Proportion of Black or African American Students	**0.49**	**Significant, Positive**
For Public Charter Schools		
Small Total Population	**0.19**	**No Significant Association**
Lower % of Adults who are College Graduates	**0.12**	**No Significant Association**
Low Median Home Sale Prices	**-0.02**	**No Significant Association**
Proportion of Black/ African American Students	**0.32**	**No Significant Association**

How these findings might be used

Based on the findings outlined, we suggest that there could be value in gathering, sharing, and using information about student mobility to assist in the process of adjusting enrollment projections following the initial baseline projections developed using the cohort survival method. Schools with higher mobility should be analyzed more closely while schools with low mobility should be left alone unless there is a compelling reason to adjust.

Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School:

Based on this study it is recommended that the District of Columbia should develop baseline enrollment projections based on the cohort survival method with a documented review and approval process including clear documentation of any adjustments made to the baseline enrollment projections. Further, an audit of the enrollment projection process should be conducted every three years by an outside entity.

Today, the Office of the Deputy Mayor for Education has sufficient authority to oversee the schedule, policies, and procedures to be used by OSSE and LEAs in this process. While elements of the process are centralized, there are other steps that must be undertaken by the appropriate agency or agencies based on expertise and authority. The recommendations presented here are intended to make the overall process more timely, efficient, transparent, and accurate. A centralized data management system allows for the creation of a public portal establishing transparent access to relevant data. Longitudinal datasets used in this study include:

- Historical audited enrollment data for 10 years by DCPS and charter school, by grade, and by special population
- Student demographic and special population data with addresses for 5 years, including school and grade
- Live birth counts by address or aggregated to elementary boundaries
- DCPS feeder pattern information
- Gross square footage of school facilities (DCPS and PCS)
- Capacity of facilities (DCPS and PCS)
- Enrollment caps of charter schools
- Facility condition of DCPS
- Previous enrollment projections

The following are suggested strategies for streamlining data management:

1. OSSE, as an entity independent from DCPS and PCSB, should collect, maintain, and provide to LEAs and private schools information on enrollment of all D.C. residents.
2. LEAs should use one student information system housed in a central organization. It is recommended that OSSE house the central student information system because it currently houses and maintains all enrollment data used in this study.
3. All D.C. agencies should use a longitudinally consistent nomenclature for school names, school IDs, grades, grade assignment, race/ethnicity, and should implement a SPED designation across LEAs and private schools.
4. All D.C. agencies, as detailed below, should maintain longitudinal datasets of demand and supply factors that may affect future enrollment through data agreements and protocols with other D.C. agencies, including:
    - D.C. Department of Health – live birth counts by residence (address of mother)
    - D.C. Office of Planning - population and housing data (including age level population projections and projected residential growth)
    - D.C. Department of General Services - Facilities Condition Reports for data on DCPS school siting, size, condition, enrollment capacity and capital plans, using standard definitions.

- Public Charter School Board - enrollment ceilings of charter LEAs
- Charter LEAs - data and information about programs, and services provided, as well as data on school siting, facility size, condition, enrollment capacity and capital plans, using standard definitions

The following is a recommended process for the District of Columbia to follow in the development of enrollment projections:

Step 1: Maintain the most recent 10 years of historical enrollment data, including race, ethnicity, gender, special education, language, address, in a longitudinal database and compile it by school, LEA, grade, and subgroups using OSSE designated school numbers and names. Responsible agency: OSSE

Historical enrollment data used should be final audited enrollment by school, by grade, as provided by OSSE. It is important that this data comes from the same point in time each year and it is important to note that the projections will project to that same point in time for each year. A minimum of 5 years of historical data should be analyzed; however, 10 years of historical data is ideal. This data is used to calculate survival ratios from grade to grade, year to year, to analyze trends for projecting future enrollment.

Step 2: Collect the most recent 15 years of birth data by the address of the mother from the Department of Health and aggregate the data by elementary attendance boundary. Responsible agency: OSSE

Resident live birth counts, by the address of the mother, should be obtained from the Department of Health to the smallest geography available. In this study, the data was available by address and aggregated to the elementary attendance boundary level. The first year of birth data collected should be 5 years prior to the first year of historical enrollment data used. The birth data should be as current as possible. This data is used to project PK3, PK4, and kindergarten enrollment by calculating the percentage of students that appear at a school 3, 4, and 5 years after the birth year.

In this study, live birth counts were available through 2016 and projected kindergarten enrollment through 2021-22. For projected kindergarten enrollment after 2021-22, an average of the last three years of live birth counts was used. If *projected* live birth counts are available based on the latest year of actual live birth counts in the future, we recommend that data be used in lieu of a 3-year average of live birth counts to project PK3, PK4, and kindergarten enrollment.

Step 3: Identify geographic feeder patterns that define the assignment of students from school to school. Responsible agency: OSSE

To the extent possible, feeder assignments should be used in calculating survival ratios of transition grades (i.e. 5^{th} to 6^{th} grade). In cases where there is no assigned feeder, a system-wide total feeder should be applied. While most DCPS schools have geographic feeders that are clean, meaning for example, 100% of an elementary school's geographic feeder assignment is to one middle school, the reality is that not necessarily 100% of the students will actually attend their geographically assigned middle school. They may attend a PCS school, an "out-of-boundary" DCPS middle school, or a private school for middle school. This is not unusual in school systems that have robust school choice offerings. The actual observed deviations from the geographical feeder assignments are naturally captured in the historical survival ratios.

Step 4: Calculate a cohort survival ratio of students from birth to kindergarten and grade to grade, year to year for the 10 years of historical data. Responsible agency: OSSE

After compiling historical enrollment, live birth counts, and feeder patterns, survival ratios are calculated and analyzed.

Step 5: Apply the projection ratios to each grade, by school, by year for ten years, producing the baseline next year, five-year, and ten-year enrollment projections by school. Responsible agency: OSSE

A projection ratio for each grade should be developed to be applied to actual enrollment to calculate the projected enrollment at each school, by grade, by year. In this study, the last 3 years of survival ratios were averaged and used as the projection ratio for DCPS schools; and the weighted average of the last 2 years was used as the projection ratio for PCS schools. This is based on the results of the *Blind Study of Enrollment Projections* section of this report. However, what is the best approach for determining projection ratios one year, may not be the best approach the following year. Some factors that should be considered when determining projection ratios may include when boundary changes occur, new facilities are opened, school closures, program changes, etc.

In the *Baseline Enrollment Projections by School* section provided in this study, PK3 and PK4 enrollment by school were kept flat at the current enrollment due to PK specific classroom space limitations.

Step 6: Using student-level data, calculate the mobility index of students in, students out and students staying. Responsible agency: OSSE

Step 7: Each year, make available on OSSE website and provide each LEA with next year and five-year baseline enrollment projections for every school, along with historic enrollment data, survival ratios, live birth counts, supply data (including but not limited to capacity, square footage, facility condition, enrollment ceiling/caps, school location, program offerings, grade configuration, planned school/program closings and openings, and boundary changes), demand factors (including but not limited to residential building permits, lottery data), and mobility index in an interactive web-portal like the DCPS portal currently in use. Responsible agencies: OSSE, DCPS, and PCSB

Step 8: Develop system-wide enrollment projections (DCPS and PCS schools combined) by grade, by year, for ten years to be used internally, to align post-baseline adjusted enrollment projections. Responsible agency: OSSE

A larger sample size (i.e., system-wide) enrollment projections will yield more accurate results than a smaller sample size (i.e., by-school) enrollment projections. Therefore, in addition to baseline enrollment projections at the school level, a system-wide enrollment projection should be made for the total student enrollment (DCPS and PCS students). It should be noted that the sum of school-level projections will never be 100% equal to a separate enrollment projection done for the total student population.

In the *System-wide Enrollment Projections* section provided in this study, PK3 and PK4 enrollment were projected based on the last year of birth to PK3 and birth to PK4 survival ratios providing a target PK enrollment number to guide by-school post-baseline adjustments.

Step 9: Using the interactive web portal described in Step 7, DCPS and PCSB reviews OSSE's baseline projection by school by grade and subgroup and adjusts the *next year* by grade and by school level baseline projections based on a review of information provided in the web portal; with DCPS and PCSB documenting the reasons for all requested adjustments on the web portal. Responsible agencies: DCPS and PCSB

DCPS and other school systems use variants on a standard cohort survival method to produce 5- and 10- year enrollment projections in Master Facilities Plans, and as a baseline step in the process of producing 1-year enrollment projections. There is a general understanding that although the cohort survival method has no clear substitute as a foundation for enrollment projections, adjustments to the baseline enrollment projections may be necessary to improve those projections. However, for the types of information commonly used for projection adjustments, the standard cohort survival method already has some of this information "baked in" the methodology, which would make further adjustment inappropriate.

Knowing what factors might predict high levels of error in the baseline enrollment projections, i.e., where adjustments were likely to be needed, was explored. The baseline enrollment projections provide no information about which schools it is projecting with precision, and which schools it is projecting with a higher degree of uncertainty. In response to these concerns, the following recommendations for identifying appropriate adjustments to make and appropriate circumstances in which to make those adjustments.

Recommended adjustment #1*: Identify schools for projection adjustments based on student mobility and changes in school physical and administrative structure.*

> The analysis of neighborhood ("demand"), school ("supply"), student mobility, and lottery information has led us to recommend a small set of outside factors that indicate it is likely to be appropriate to make expert adjustments to the baseline cohort survival method-based enrollment projections. The clearest indicator that a baseline cohort survival method-based enrollment projection may be insufficient, is the student mobility of a given school. Schools with high student mobility have a lot of different students from one grade to the next, even if the survival ratio of enrollments is fairly constant. In the analyses, a simple cohort survival model provided consistently accurate enrollment projections for low mobility schools but tended to have more error for high mobility schools.
>
> As described in the *Student Mobility in D.C. Public and Public Charter Schools* section of this report, levels that constitute "high" or "low mobility" can be evaluated based on the distribution of observed student mobility. In this study, mobility is generally defined for a given grade by counting "In" (students moving in for that grade), "Out" (students moving out after the previous grade), and "Stay" (students who stay from one grade to the next). If mobility is calculated as ("In" + "Out") /("In" + "Out" + "Stay"), then in general, a school with an overall student mobility above 0.5 (not counting the transition grades from feeder schools) might be considered a high mobility school, and a school with an overall student mobility below 0.3 might be considered a low mobility school.

Schools with high mobility should receive careful analysis and should be considered for adjustment. A basic cohort survival method-based enrollment projection may be more susceptible to error for such schools. Additionally, the uncertainty of long-term enrollment projections may be increased for high-mobility schools, so adjustments to improve the stability of these projections are recommended. If a school has high mobility one year, it may not in the future or vice versa which is why we note, as Step 6, calculating the mobility index on an annual basis and providing the information in the portal.

Conversely, schools with low mobility should only have adjustments made to the baseline cohort survival method-based enrollment projections in cases where there is a compelling case for such an adjustment. For such schools, levels and changes in school and neighborhood characteristics are usually captured adequately by the cohort survival method, and subsequent adjustments are likely to "double count" factors that affect enrollment – once in the cohort method, then again in a subsequent adjustment.

Additional recommendations for adjustments are as follows.

- School closings, consolidations, and openings, as well as planned or recently completed changes in school capacity, for structural or administrative reasons, are appropriate factors for projection adjustments, as the future effects of these changes appear not to be adequately captured in a standard baseline cohort survival model.
- Differences in neighborhood or population characteristics such as home values or the educational attainment of the population in the school catchment area, should not be used for projection adjustments under most circumstances. There is some evidence that any relationship to projection error for such characteristics is largely mediated through student mobility so that adjustment decisions guided by student mobility are sufficient. Similarly, differences in parents' lottery preferences for schools appear to be associated with student mobility.
- There is no evidence, based on the factors of this study, that expected or recent changes in neighborhood or population characteristics indicate a need for projection adjustments. (Typically, when neighborhoods turn over or new construction occurs, the impact on student enrollment is somewhat gradual and tends to be captured in a cohort survival method. Since we are recommending that enrollment projections for 10 years be produced annually and reviewed annually, growth or decline due to changes in neighborhood or population characteristics will likely be captured thereby.) Additional data collection and/or analysis of very long-term projections could possibly uncover a relationship that has not yet been demonstrated.

Recommended adjustment #2*: PK3, PK4, Adult, UG, and SPED UG.*

The baseline enrollment projections provided in this study, projected PK3, PK4, Adult, UG, and SPED UG enrollments, do not follow the cohort survival method but reflects the actual 2017-18 enrollments. Adjustments should be made if data is available to support them. For example, if there is a planned increase in PK offerings at particular schools, adjustments should be made to increase PK enrollment.

Step 10: DCPS and PCSB share their preliminary adjusted projection (baseline plus adjustments and documented rationale) with the DCPS local schools and charter LEAs, who will be able to review the preliminary projections along with all data provided on the interactive web portal, including, but not limited to historic enrollment data, survival ratios, live birth counts, supply data (including but not limited to capacity, square footage, facility condition, enrollment ceiling/caps, school location, program offerings, grade configuration, planned school/program closings and openings, and boundary changes), demand factors (including but not limited to residential building permits, lottery data), and mobility index and baseline enrollment projection of their school and either propose documented adjustments to the preliminary adjusted enrollment projection of DCPS and PCSB or accept the preliminary adjusted enrollment projection from their LEA central office. Responsible agencies: DCPS, PCSB, DCPS schools, Charter LEAs

Step 11: Following the back and forth between DCPS and local schools and PCSB and LEAs, DCPS and PCSB submit their final next year and five-year projections to the ODME. Responsible agencies: DCPS and PCSB

Step 12: ODME rolls up the DCPS and PCSB projections from the final school and DCPS/PCSB approved projections (Step 11) and compares them to OSSE's baseline (Step 5) and OSSE's system-wide enrollment projections (Step 8). Responsible agency: ODME

Step 13: ODME works with DCPS and PCSB to reconcile the projections by grade, with the internal system-wide enrollment projections (Step 8)—making sure they align with the system-wide enrollment projections by grade, and by subgroup, by grade developed in Step 8 as much as reasonably possible. Responsible agencies: ODME, DCPS, and PCSB

The following is an example of where the post-baseline enrollment projections roll-up by school, by grade may deviate from the system-wide enrollment projections:

PK classroom capacity should be a key consideration in justifying any adjustments to PK enrollment projections. If changes in PK policy and/or PK capacity occur and are accounted for in the by-school post-baseline enrollment projections, the total PK enrollment projections roll-up may exceed the system-wide PK enrollment projections and should be documented as such.

The table below illustrates a system-wide (DCPS and PCS students) enrollment projection based on a 3-year simple average of survival ratios.

Projected Enrollment - 3 Year Simple Average - System-wide

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	5,716	5,885	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761
PK4	7,226	7,269	7,484	7,326	7,326	7,326	7,326	7,326	7,326	7,326
K	7,435	7,636	7,682	7,909	7,742	7,742	7,742	7,742	7,742	7,742
1	7,205	7,180	7,374	7,418	7,638	7,477	7,477	7,477	7,477	7,477
2	6,924	6,926	6,902	7,089	7,131	7,342	7,187	7,187	7,187	7,187
3	6,575	6,696	6,698	6,675	6,855	6,897	7,100	6,951	6,951	6,951
4	6,354	6,366	6,483	6,485	6,463	6,637	6,677	6,875	6,730	6,730
5	6,178	6,235	6,247	6,362	6,364	6,342	6,513	6,552	6,746	6,604
6	5,830	5,902	5,957	5,968	6,078	6,080	6,059	6,222	6,259	6,445
7	5,134	5,753	5,824	5,878	5,889	5,998	5,999	5,979	6,140	6,177
8	4,830	5,058	5,668	5,738	5,791	5,802	5,909	5,911	5,890	6,049
9	5,859	6,305	6,603	7,399	7,490	7,559	7,573	7,713	7,715	7,688
10	4,297	4,313	4,641	4,860	5,446	5,513	5,564	5,575	5,677	5,679
11	4,289	4,040	4,055	4,364	4,570	5,120	5,184	5,232	5,241	5,338
12	3,888	4,056	3,821	3,835	4,127	4,321	4,842	4,902	4,947	4,957
Adult	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
UG	141	141	141	141	141	141	141	141	141	141
SPED UG	384	384	384	384	384	384	384	384	384	384
Grand Total	**93,216**	**95,096**	**96,676**	**98,543**	**100,147**	**101,393**	**102,389**	**102,881**	**103,265**	**103,587**

Source: Cooperative Strategies

Projected Enrollment - 3 Year Simple Average - System-wide

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,942	13,154	13,245	13,087	13,087	13,087	13,087	13,087	13,087	13,087
K - 5	40,671	41,039	41,386	41,938	42,193	42,437	42,696	42,784	42,833	42,691
6 - 8	15,794	16,713	17,449	17,584	17,758	17,880	17,967	18,112	18,289	18,671
9 - 12	18,333	18,714	19,120	20,458	21,633	22,513	23,163	23,422	23,580	23,662
Other	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476
K - 12	**74,798**	**76,466**	**77,955**	**79,980**	**81,584**	**82,830**	**83,826**	**84,318**	**84,702**	**85,024**
Grand Total	**93,216**	**95,096**	**96,676**	**98,543**	**100,147**	**101,393**	**102,389**	**102,881**	**103,265**	**103,587**

Source: Cooperative Strategies

Step 14: ODME certifies the next year projection and provides comments on the five-year projection. Responsible agency: ODME

Upon completion of the baseline and post-baseline enrollment projections, a documented review and approval process should be conducted by the DME. All assumptions and adjustments should be fully documented by any parties producing baseline enrollment projections or making school level adjustments and are available to any requesting entity upon request. The roll-up of the post-baseline enrollment projections by school, by grade is the final enrollment projection to be certified. It is important to note that while these should align to the system-wide enrollment projections developed in Step 8 as much as reasonably possible, there are instances as described in Step 13 that may justify deviations from the system-wide enrollment projections and should be clearly documented.

Step 15: Annual enrollment projection review. Enrollment projections should be compared with the actual audited enrollment system-wide by grade; and by school, by grade; as well as for special populations. This is important in the continued improvement of the enrollment projection process. As discrepancies are found, it is good practice to try to determine the root of the error so that it may be considered in subsequent updates. Responsible agency: OSSE

Use of Enrollment Projections:

Enrollment projections are important administrative responsibilities associated with district, LEA and school budgeting, staffing, and facility planning, including for school openings, closings and consolidations—within LEAs and across sectors. Enrollment projections based on school of attendance are useful for budget development, staff planning, and determining the number of available lottery seats each year. Knowing how many students per grade at a school provides guidance on determining how many teachers per grade level may be needed. Enrollment projections based on boundary of residence are useful for planning school facilities and/or attendance boundaries. Knowing if the student population in a boundary is increasing or decreasing provides guidance for capital planning.

DCPS and PCS will benefit from the recommendations outlined above and especially centralized data management. A defined process of projecting and reviewing enrollment should allow for improved efficiencies that should expedite the process for finalizing enrollment projections for purposes budgeting, staffing, and identifying the number of available lottery seats available.

Even as projections are essential tools for planning and budgeting, it is important to note, that in the highly dynamic and complicated system in the District of Columbia, enrollment projections do not capture the complexity of enrollment or attendance patterns. It is also the case that there is no simple demand and supply relationship. The enrollment projections reflect historic public policies that govern and regulate the supply of schools. This was true with segregation and then desegregation; with the policies that introduced DCPS "out-of-boundary" choice in the 1970s; for school choice expanded to privately operated charters; and with the expansion of early childhood education. Each of these policy actions has had a dramatic effect on the enrollment of the public schools in the District of Columbia.

Section 7: Historical / Projected Enrollment

Historical Enrollment

Historical enrollment in the District of Columbia (DCPS and PCS schools), based on the official audited enrollment, increased 20,840 students, or approximately 29.5 percent, from the 2008-09 to the 2017-18 school year.

Historical Enrollment - System-wide

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK3	2,561	3,135	3,985	4,515	4,929	5,131	5,382	5,333	5,591	5,682
PK4	4,506	5,076	5,596	6,263	6,499	6,724	6,658	6,976	6,938	7,036
K	5,064	5,188	5,939	6,292	6,980	7,163	7,264	7,309	7,561	7,461
1	4,971	5,020	5,240	5,757	6,163	6,773	7,019	7,043	7,126	7,203
2	5,072	4,908	4,915	5,054	5,629	5,990	6,642	6,764	6,804	6,799
3	5,049	4,993	4,873	4,791	4,991	5,453	5,819	6,427	6,555	6,563
4	4,540	4,891	4,877	4,629	4,631	4,804	5,257	5,655	6,248	6,296
5	4,633	4,513	4,825	4,754	4,575	4,629	4,784	5,199	5,531	6,103
6	4,453	4,516	4,391	4,550	4,627	4,433	4,593	4,637	4,970	5,203
7	4,526	4,394	4,439	4,236	4,559	4,596	4,404	4,528	4,581	4,903
8	4,477	4,451	4,307	4,310	4,202	4,397	4,515	4,351	4,473	4,489
9	6,251	6,179	5,849	5,823	6,253	5,615	5,818	5,785	5,785	5,838
10	4,280	4,430	4,495	4,179	4,210	4,104	3,976	4,012	4,224	4,562
11	3,664	3,682	3,841	3,580	3,739	3,488	3,619	3,645	3,734	4,111
12	3,389	3,300	3,404	3,101	3,315	2,980	3,177	3,274	3,370	3,763
Adult	2,816	3,067	3,712	3,810	4,151	4,768	4,488	4,545	4,692	4,951
UG	396	449	246	1,049	729	1,884	1,592	1,451	1,388	141
SPED UG	NA	NA	NA	NA	NA	NA	368	376	382	384
Grand Total	**70,648**	**72,192**	**74,934**	**76,693**	**80,182**	**82,932**	**85,375**	**87,310**	**89,953**	**91,488**

Source: OSSE Audited Enrollment

Historical Enrollment - System-wide

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	7,067	8,211	9,581	10,778	11,428	11,855	12,040	12,309	12,529	12,718
K - 5	29,329	29,513	30,669	31,277	32,969	34,812	36,785	38,397	39,825	40,425
6 - 8	13,456	13,361	13,137	13,096	13,388	13,426	13,512	13,516	14,024	14,595
9 - 12	17,584	17,591	17,589	16,683	17,517	16,187	16,590	16,716	17,113	18,274
Other	3,212	3,516	3,958	4,859	4,880	6,652	6,448	6,372	6,462	5,476
K - 12	**60,369**	**60,465**	**61,395**	**61,056**	**63,874**	**64,425**	**66,887**	**68,629**	**70,962**	**73,294**
Grand Total	**70,648**	**72,192**	**74,934**	**76,693**	**80,182**	**82,932**	**85,375**	**87,310**	**89,953**	**91,488**

Source: OSSE Audited Enrollment

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.[1]

Historical enrollment in the DCPS schools, based on the official audited enrollment, increased 2,698 students, or approximately 6 percent, from the 2008-09 to the 2017-18 school year.

Historical Enrollment - DCPS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK3	1,498	1,712	2,121	2,105	2,161	2,197	2,276	2,310	2,362	2,374
PK4	2,749	2,895	3,114	3,291	3,409	3,368	3,339	3,522	3,467	3,423
K	3,355	3,277	3,732	3,790	4,123	4,179	4,108	4,208	4,224	4,201
1	3,471	3,299	3,256	3,687	3,741	4,109	4,141	4,163	4,181	4,093
2	3,582	3,389	3,235	3,205	3,546	3,682	4,098	4,107	3,995	3,939
3	3,654	3,481	3,373	3,233	3,182	3,450	3,618	4,078	4,040	3,855
4	3,247	3,458	3,275	3,162	3,082	3,050	3,341	3,590	3,951	3,878
5	3,155	2,932	3,160	3,016	2,799	2,843	2,781	3,097	3,259	3,586
6	2,405	2,512	2,314	2,348	2,279	2,237	2,233	2,070	2,310	2,306
7	2,344	2,295	2,389	2,203	2,338	2,355	2,304	2,274	2,144	2,362
8	2,459	2,375	2,347	2,357	2,194	2,396	2,509	2,311	2,324	2,169
9	4,292	4,007	3,654	3,706	3,972	3,654	3,855	3,767	3,273	3,347
10	2,881	2,864	2,900	2,682	2,558	2,444	2,438	2,558	2,580	2,760
11	2,624	2,490	2,639	2,424	2,355	2,235	2,249	2,316	2,435	2,602
12	2,538	2,370	2,383	2,114	2,028	1,869	2,046	2,130	2,223	2,514
Adult	972	979	1,430	1,394	1,378	1,428	1,393	1,253	1,079	408
UG	171	224	246	414	363	871	675	526	484	141
SPED UG	NA	NA	NA	NA	NA	NA	116	125	131	137
Grand Total	**45,397**	**44,559**	**45,568**	**45,131**	**45,508**	**46,367**	**47,520**	**48,405**	**48,462**	**48,095**

Source: OSSE Audited Enrollment

Historical Enrollment - DCPS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	4,247	4,607	5,235	5,396	5,570	5,565	5,615	5,832	5,829	5,797
K - 5	20,464	19,836	20,031	20,093	20,473	21,313	22,087	23,243	23,650	23,552
6 - 8	7,208	7,182	7,050	6,908	6,811	6,988	7,046	6,655	6,778	6,837
9 - 12	12,335	11,731	11,576	10,926	10,913	10,202	10,588	10,771	10,511	11,223
Other	1,143	1,203	1,676	1,808	1,741	2,299	2,184	1,904	1,694	686
K - 12	**40,007**	**38,749**	**38,657**	**37,927**	**38,197**	**38,503**	**39,721**	**40,669**	**40,939**	**41,612**
Grand Total	**45,397**	**44,559**	**45,568**	**45,131**	**45,508**	**46,367**	**47,520**	**48,405**	**48,462**	**48,095**

Source: OSSE Audited Enrollment

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.[1]

Historical enrollment in the PCS schools, based on the official audited enrollment, increased 18,142 students, or approximately 72 percent, from the 2008-09 to the 2017-18 school year.

Historical Enrollment - PCS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK3	1,063	1,423	1,864	2,410	2,768	2,934	3,106	3,023	3,229	3,308
PK4	1,757	2,181	2,482	2,972	3,090	3,356	3,319	3,454	3,471	3,613
K	1,709	1,911	2,207	2,502	2,857	2,984	3,156	3,101	3,337	3,260
1	1,500	1,721	1,984	2,070	2,422	2,664	2,878	2,880	2,945	3,110
2	1,490	1,519	1,680	1,849	2,083	2,308	2,544	2,657	2,809	2,860
3	1,395	1,512	1,500	1,558	1,809	2,003	2,201	2,349	2,515	2,708
4	1,293	1,433	1,602	1,467	1,549	1,754	1,916	2,065	2,297	2,418
5	1,478	1,581	1,665	1,738	1,776	1,786	2,003	2,102	2,272	2,517
6	2,048	2,004	2,077	2,202	2,348	2,196	2,360	2,567	2,660	2,897
7	2,182	2,099	2,050	2,033	2,221	2,241	2,100	2,254	2,437	2,541
8	2,018	2,076	1,960	1,953	2,008	2,001	2,006	2,040	2,149	2,320
9	1,959	2,172	2,195	2,117	2,281	1,961	1,963	2,018	2,512	2,491
10	1,399	1,566	1,595	1,497	1,652	1,660	1,538	1,454	1,644	1,802
11	1,040	1,192	1,202	1,156	1,384	1,253	1,370	1,329	1,299	1,509
12	851	930	1,021	987	1,287	1,111	1,131	1,144	1,147	1,249
Adult	1,844	2,088	2,282	2,416	2,773	3,340	3,095	3,292	3,613	4,543
UG	225	225	NA	635	366	1,013	917	925	904	NA
SPED UG	NA	NA	NA	NA	NA	NA	252	251	251	247
Grand Total	**25,251**	**27,633**	**29,366**	**31,562**	**34,674**	**36,565**	**37,855**	**38,905**	**41,491**	**43,393**

Source: OSSE Audited Enrollment

Historical Enrollment - PCS

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PK	2,820	3,604	4,346	5,382	5,858	6,290	6,425	6,477	6,700	6,921
K - 5	8,865	9,677	10,638	11,184	12,496	13,499	14,698	15,154	16,175	16,873
6 - 8	6,248	6,179	6,087	6,188	6,577	6,438	6,466	6,861	7,246	7,758
9 - 12	5,249	5,860	6,013	5,757	6,604	5,985	6,002	5,945	6,602	7,051
Other	2,069	2,313	2,282	3,051	3,139	4,353	4,264	4,468	4,768	4,790
K - 12	**20,362**	**21,716**	**22,738**	**23,129**	**25,677**	**25,922**	**27,166**	**27,960**	**30,023**	**31,682**
Grand Total	**25,251**	**27,633**	**29,366**	**31,562**	**34,674**	**36,565**	**37,855**	**38,905**	**41,491**	**43,393**

Source: OSSE Audited Enrollment

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.[1]

Summary of Enrollment Projections

The following enrollment projections were developed as part of this study for the District of Columbia:

- Baseline enrollment projections by school *(Step 5 of Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School)*
- System-wide enrollment projections *(Step 8 of Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School)*
- Enrollment projections based on residence

It should be noted that the overall historical enrollment between the baseline by school and elementary boundary (residence) projections differ (due to being different data sets) and therefore the enrollment projections presented also differ. In addition, aggregating the data differently will yield different results.

Baseline Enrollment Projections by School

Enrollment projections based on school of attendance are useful for budget development and staff planning. Knowing how many students per grade at a school provides guidance on determining how many teachers per grade level may be needed. *These enrollment projections relate to Step 5 of Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School*

Feeder Patterns

Geographic feeder patterns were incorporated based on data available on the DCPS website for school years 2014-15 through 2018-19 (https://dcps.dc.gov/boundaries). In a few cases, a different feeder pattern was applied based on a review of geocoded students and where they attended the following year. These cases, if applicable, are noted in the enrollment projections by school profiles.

Birth Data

Resident live birth counts by address were provided by the District of Columbia Department of Health, aggregated by elementary boundary, and used to project kindergarten enrollment for schools assigned to those boundaries. In the cases of PCS elementary schools and DCPS elementary schools with no assigned boundary, city-wide live birth counts were used to project kindergarten enrollment. It should be noted that actual live birth counts are available through 2016 and project kindergarten enrollment through 2021-22. To project kindergarten through 2027-28, an average number of live births for the 3 most recent years of available data was used.

Enrollment Projection Methodology

Projected PK3, PK4, Adult, UG, and SPED UG enrollments do not follow the cohort survival method but reflect the actual 2017-18 enrollments.

Based on the findings of the blind study described previously in this report, the baseline enrollment projections were developed using the cohort survival method using a 3-year simple average of survival ratios for DCPS schools and a 2-year weighted average of survival ratios for PCS schools. Additional adjustments beyond these and what is noted in the enrollment projections by school profiles were not applied. We recommend that DCPS and PCS

continue the practice of obtaining feedback from school principals, Local School Advisory Teams, LEAs, etc. to make appropriate adjustments, if necessary.

Survival Ratios

The chart below demonstrates the ten-year changes in enrollment as students move through the system. Percentages greater than 100 indicate that there are more students than there were in the previous grade the previous year. In other words, there was an increase in student population where new students were added to the system. Percentages less than 100 indicate that there was a decline or students left the system. If the exact number of students in 1st grade during the 2010-11 school year were present in 2nd grade for the 2011-12 school year, the survival ratio would be 100 percent.

Birth-to-Kindergarten and Birth-to-First Grade: This ratio indicates the number of children born in the area who attend kindergarten and first grade in D.C. (DCPS and PCS) five and six years later.

Grades 8 to 9: The higher than usual percentage often is a result of school district promotion policies. Often in school districts, students are promoted from 8th to 9th grade and after one year in 9th grade do not have sufficient credits to be classified as a 10th grader and are counted again as 9th graders the following year. There may also be students who are attending private schools or are home-schooled through grade 9 and then attend public schools for high school education.

The following table illustrates the historical survival ratios in D.C. (DCPS and PCS) over the past ten years by grade level. What is important to note is the trend in survival ratios, not necessarily the actual number

Survival Ratios - District-wide

from	to	Birth to K	K to 1	Birth to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
2008	2009	65.35%	99.13%	65.91%	98.73%	98.44%	96.87%	99.41%	97.47%	98.68%	98.34%	138.02%	70.87%	86.03%	90.07%
2009	2010	74.71%	101.00%	66.00%	97.91%	99.29%	97.68%	98.65%	97.30%	98.29%	98.02%	131.41%	72.75%	86.70%	92.45%
2010	2011	73.82%	96.94%	72.42%	96.45%	97.48%	94.99%	97.48%	94.30%	96.47%	97.09%	135.20%	71.45%	79.64%	80.73%
2011	2012	78.69%	97.95%	72.30%	97.78%	98.75%	96.66%	98.83%	97.33%	100.20%	99.20%	145.08%	72.30%	89.47%	92.60%
2012	2013	78.42%	97.03%	76.36%	97.19%	96.87%	96.25%	99.96%	96.90%	99.33%	96.45%	133.63%	65.63%	82.85%	79.70%
2013	2014	80.65%	97.99%	76.84%	98.07%	97.15%	96.41%	99.58%	99.22%	99.35%	98.24%	132.32%	70.81%	88.18%	91.08%
2014	2015	79.83%	96.96%	78.19%	96.37%	96.76%	97.18%	98.90%	96.93%	98.58%	98.80%	128.13%	68.96%	91.68%	90.47%
2015	2016	81.40%	97.50%	77.83%	96.61%	96.91%	97.21%	97.81%	95.60%	98.79%	98.79%	132.96%	73.02%	93.07%	92.46%
2016	2017	79.55%	95.27%	77.54%	95.41%	96.46%	96.05%	97.68%	94.07%	98.65%	97.99%	130.52%	78.86%	97.32%	100.78%
mean simple all years		**76.93%**	**97.75%**	**73.71%**	**97.17%**	**97.57%**	**96.59%**	**98.70%**	**96.57%**	**98.70%**	**98.10%**	**134.14%**	**71.63%**	**88.33%**	**90.04%**
std. dev. simple all years		**5.04%**	**1.61%**	**4.90%**	**1.04%**	**1.01%**	**0.79%**	**0.88%**	**1.64%**	**1.01%**	**0.87%**	**4.97%**	**3.54%**	**5.35%**	**6.41%**
mean simple 5 years		**79.97%**	**96.95%**	**77.35%**	**96.73%**	**96.83%**	**96.62%**	**98.78%**	**96.54%**	**98.94%**	**98.05%**	**131.51%**	**71.46%**	**90.62%**	**90.90%**
std. dev. simple 5 years		**1.13%**	**1.03%**	**0.74%**	**0.99%**	**0.25%**	**0.54%**	**1.02%**	**1.90%**	**0.37%**	**0.96%**	**2.22%**	**4.94%**	**5.44%**	**7.51%**
mean simple 3 years		**80.26%**	**96.57%**	**77.86%**	**96.13%**	**96.71%**	**96.82%**	**98.13%**	**95.53%**	**98.68%**	**98.52%**	**130.53%**	**73.61%**	**94.02%**	**94.57%**
std. dev. simple 3 years		**1.00%**	**1.16%**	**0.33%**	**0.63%**	**0.23%**	**0.66%**	**0.67%**	**1.43%**	**0.11%**	**0.46%**	**2.41%**	**4.98%**	**2.94%**	**5.47%**
mean simple 2 years		**80.47%**	**96.38%**	**77.69%**	**96.01%**	**96.68%**	**96.63%**	**97.74%**	**94.83%**	**98.72%**	**98.39%**	**131.74%**	**75.94%**	**95.20%**	**96.62%**
std. dev. simple 2 years		**1.31%**	**1.58%**	**0.20%**	**0.85%**	**0.32%**	**0.82%**	**0.09%**	**1.08%**	**0.10%**	**0.56%**	**1.73%**	**4.13%**	**3.01%**	**5.88%**
mean weighted all years		**79.46%**	**96.82%**	**76.65%**	**96.50%**	**96.96%**	**96.58%**	**98.36%**	**95.89%**	**98.79%**	**98.24%**	**132.14%**	**73.39%**	**92.08%**	**93.34%**
std. dev. weighted all years		**2.59%**	**1.34%**	**2.81%**	**1.00%**	**0.69%**	**0.64%**	**0.86%**	**1.77%**	**0.63%**	**0.72%**	**3.80%**	**4.51%**	**5.17%**	**6.62%**
mean weighted 5 years		**80.09%**	**96.24%**	**77.62%**	**96.03%**	**96.66%**	**96.51%**	**98.03%**	**95.17%**	**98.74%**	**98.26%**	**131.04%**	**75.36%**	**94.64%**	**96.29%**
std. dev. weighted 5 years		**0.93%**	**1.21%**	**0.41%**	**0.85%**	**0.26%**	**0.61%**	**0.71%**	**1.62%**	**0.22%**	**0.54%**	**1.73%**	**4.57%**	**3.83%**	**5.88%**
mean weighted 3 years		**79.89%**	**95.72%**	**77.62%**	**95.66%**	**96.55%**	**96.30%**	**97.75%**	**94.45%**	**98.67%**	**98.16%**	**130.85%**	**77.44%**	**96.36%**	**98.91%**
std. dev. weighted 3 years		**0.86%**	**1.08%**	**0.19%**	**0.58%**	**0.22%**	**0.58%**	**0.29%**	**0.94%**	**0.07%**	**0.40%**	**1.32%**	**3.43%**	**2.29%**	**4.39%**
mean weighted 2 years		**79.64%**	**95.37%**	**77.56%**	**95.47%**	**96.48%**	**96.10%**	**97.69%**	**94.14%**	**98.66%**	**98.03%**	**130.63%**	**78.58%**	**97.12%**	**100.38%**
std. dev. weighted 2 years		**0.56%**	**0.67%**	**0.09%**	**0.36%**	**0.14%**	**0.35%**	**0.04%**	**0.46%**	**0.04%**	**0.24%**	**0.74%**	**1.76%**	**1.28%**	**2.51%**

The following table illustrates the historical survival ratios in DCPS over the past ten years by grade level.

Survival Ratios - DCPS

from	to	Birth to K	K to 1	Birth to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
2008	2009	41.28%	98.33%	43.32%	97.64%	97.18%	94.64%	90.30%	79.62%	95.43%	101.32%	162.95%	66.73%	86.43%	90.32%
2009	2010	46.95%	99.36%	41.01%	98.06%	99.53%	94.08%	91.38%	78.92%	95.10%	102.27%	153.85%	72.37%	92.14%	95.70%
2010	2011	44.46%	98.79%	46.38%	98.43%	99.94%	93.74%	92.09%	74.30%	95.20%	98.66%	157.90%	73.40%	83.59%	80.11%
2011	2012	46.48%	98.71%	43.89%	96.18%	99.28%	95.33%	88.52%	75.56%	99.57%	99.59%	168.52%	69.02%	87.81%	83.66%
2012	2013	45.75%	99.66%	46.32%	98.42%	97.29%	95.85%	92.25%	79.92%	103.33%	102.48%	166.55%	61.53%	87.37%	79.36%
2013	2014	45.61%	99.09%	45.34%	99.73%	98.26%	96.84%	91.18%	78.54%	103.00%	106.54%	160.89%	66.72%	92.02%	91.54%
2014	2015	45.96%	101.34%	46.22%	99.18%	99.51%	99.23%	92.70%	74.43%	101.84%	100.30%	150.14%	66.36%	95.00%	94.71%
2015	2016	45.47%	99.36%	45.66%	95.96%	98.37%	96.89%	90.78%	74.59%	103.57%	102.20%	141.63%	68.49%	95.19%	95.98%
2016	2017	44.79%	96.90%	44.06%	94.21%	96.50%	95.99%	90.76%	70.76%	102.25%	101.17%	144.02%	84.33%	100.85%	103.24%
mean simple all years		**45.20%**	**99.06%**	**44.69%**	**97.54%**	**98.43%**	**95.84%**	**91.11%**	**76.29%**	**99.92%**	**101.61%**	**156.27%**	**69.88%**	**91.16%**	**90.52%**
std. dev. simple all years		**1.66%**	**1.18%**	**1.79%**	**1.76%**	**1.23%**	**1.69%**	**1.25%**	**3.12%**	**3.70%**	**2.25%**	**9.57%**	**6.44%**	**5.38%**	**8.04%**
mean simple 5 years		**45.52%**	**99.27%**	**45.52%**	**97.50%**	**97.99%**	**96.96%**	**91.53%**	**75.65%**	**102.80%**	**102.54%**	**152.64%**	**69.48%**	**94.09%**	**92.97%**
std. dev. simple 5 years		**0.44%**	**1.59%**	**0.91%**	**2.34%**	**1.15%**	**1.35%**	**0.89%**	**3.65%**	**0.73%**	**2.40%**	**10.76%**	**8.69%**	**4.93%**	**8.73%**
mean simple 3 years		**45.41%**	**99.20%**	**45.32%**	**96.45%**	**98.13%**	**97.37%**	**91.41%**	**73.26%**	**102.55%**	**101.22%**	**145.26%**	**73.06%**	**97.01%**	**97.98%**
std. dev. simple 3 years		**0.59%**	**2.22%**	**1.12%**	**2.52%**	**1.52%**	**1.67%**	**1.11%**	**2.17%**	**0.91%**	**0.95%**	**4.39%**	**9.82%**	**3.33%**	**4.60%**
mean simple 2 years		**45.13%**	**98.13%**	**44.86%**	**95.09%**	**97.43%**	**96.44%**	**90.77%**	**72.67%**	**102.91%**	**101.68%**	**142.82%**	**76.41%**	**98.02%**	**99.61%**
std. dev. simple 2 years		**0.48%**	**1.74%**	**1.13%**	**1.24%**	**1.32%**	**0.63%**	**0.01%**	**2.71%**	**0.94%**	**0.73%**	**1.69%**	**11.20%**	**4.00%**	**5.13%**
mean weighted all years		**45.34%**	**98.79%**	**45.03%**	**96.63%**	**97.96%**	**96.59%**	**91.15%**	**74.35%**	**101.99%**	**101.79%**	**150.06%**	**72.85%**	**95.12%**	**95.21%**
std. dev. weighted all years		**0.82%**	**1.61%**	**1.21%**	**2.23%**	**1.27%**	**1.43%**	**1.02%**	**3.23%**	**2.25%**	**1.98%**	**9.59%**	**8.74%**	**5.26%**	**7.90%**
mean weighted 5 years		**45.18%**	**98.26%**	**44.87%**	**95.69%**	**97.46%**	**96.65%**	**91.06%**	**72.87%**	**102.61%**	**101.67%**	**145.72%**	**76.49%**	**97.83%**	**99.05%**
std. dev. weighted 5 years		**0.49%**	**1.78%**	**1.00%**	**2.18%**	**1.25%**	**1.16%**	**0.73%**	**2.88%**	**0.71%**	**1.50%**	**6.43%**	**9.58%**	**3.96%**	**5.90%**
mean weighted 3 years		**44.96%**	**97.50%**	**44.43%**	**94.71%**	**96.94%**	**96.27%**	**90.84%**	**71.57%**	**102.47%**	**101.31%**	**143.84%**	**80.84%**	**99.63%**	**101.63%**
std. dev. weighted 3 years		**0.40%**	**1.48%**	**0.87%**	**1.37%**	**1.08%**	**0.84%**	**0.46%**	**1.91%**	**0.63%**	**0.54%**	**1.91%**	**8.18%**	**2.87%**	**3.78%**
mean weighted 2 years		**44.82%**	**97.02%**	**44.14%**	**94.30%**	**96.58%**	**96.03%**	**90.76%**	**70.94%**	**102.31%**	**101.22%**	**143.91%**	**83.57%**	**100.58%**	**102.90%**
std. dev. weighted 2 years		**0.21%**	**0.74%**	**0.48%**	**0.53%**	**0.56%**	**0.27%**	**0.01%**	**1.15%**	**0.40%**	**0.31%**	**0.72%**	**4.77%**	**1.70%**	**2.19%**

The following table illustrates the historical survival ratios in PCS over the past ten years by grade level.

Survival Ratios - PCS

from	to	Birth to K	K to 1	Birth to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
2008	2009	24.07%	100.70%	22.60%	101.27%	101.48%	102.72%	122.27%	135.59%	102.49%	95.14%	107.63%	79.94%	85.20%	89.42%
2009	2010	27.76%	103.82%	24.99%	97.62%	98.75%	105.95%	116.19%	131.37%	102.30%	93.38%	105.73%	73.43%	76.76%	85.65%
2010	2011	29.35%	93.79%	26.04%	93.20%	92.74%	97.80%	108.49%	132.25%	97.88%	95.27%	108.01%	68.20%	72.48%	82.11%
2011	2012	32.21%	96.80%	28.41%	100.63%	97.84%	99.42%	121.06%	135.10%	100.86%	98.77%	116.79%	78.03%	92.45%	111.33%
2012	2013	32.67%	93.24%	30.03%	95.29%	96.16%	96.96%	115.30%	123.65%	95.44%	90.09%	97.66%	72.78%	75.85%	80.27%
2013	2014	35.04%	96.45%	31.51%	95.50%	95.36%	95.66%	114.20%	132.14%	95.63%	89.51%	98.10%	78.43%	82.53%	90.26%
2014	2015	33.87%	91.25%	31.98%	92.32%	92.33%	93.82%	109.71%	128.16%	95.51%	97.14%	100.60%	74.07%	86.41%	83.50%
2015	2016	35.92%	94.97%	32.16%	97.53%	94.66%	97.79%	110.02%	126.55%	94.94%	95.34%	123.14%	81.47%	89.34%	86.31%
2016	2017	34.76%	93.20%	33.48%	97.11%	96.40%	96.14%	109.58%	127.51%	95.53%	95.20%	115.91%	71.74%	91.79%	96.15%
mean simple all years		**31.74%**	**96.03%**	**29.02%**	**96.72%**	**96.19%**	**98.47%**	**114.09%**	**130.26%**	**97.84%**	**94.43%**	**108.18%**	**75.34%**	**83.64%**	**89.45%**
std. dev. simple all years		**3.93%**	**4.00%**	**3.75%**	**3.02%**	**2.90%**	**3.76%**	**5.11%**	**4.03%**	**3.17%**	**3.02%**	**8.90%**	**4.35%**	**7.25%**	**9.50%**
mean simple 5 years		**34.45%**	**93.82%**	**31.83%**	**95.55%**	**94.98%**	**96.07%**	**111.76%**	**127.60%**	**95.41%**	**93.46%**	**107.08%**	**75.70%**	**85.18%**	**87.30%**
std. dev. simple 5 years		**1.24%**	**1.97%**	**1.24%**	**2.05%**	**1.63%**	**1.50%**	**2.76%**	**3.07%**	**0.27%**	**3.43%**	**11.70%**	**4.11%**	**6.26%**	**6.16%**
mean simple 3 years		**34.85%**	**93.14%**	**32.54%**	**95.66%**	**94.46%**	**95.92%**	**109.77%**	**127.40%**	**95.32%**	**95.89%**	**113.22%**	**75.76%**	**89.18%**	**88.65%**
std. dev. simple 3 years		**1.03%**	**1.86%**	**0.82%**	**2.90%**	**2.04%**	**1.99%**	**0.23%**	**0.81%**	**0.34%**	**1.08%**	**11.51%**	**5.08%**	**2.69%**	**6.64%**
mean simple 2 years		**35.34%**	**94.08%**	**32.82%**	**97.32%**	**95.53%**	**96.96%**	**109.80%**	**127.03%**	**95.23%**	**95.27%**	**119.53%**	**76.60%**	**90.56%**	**91.23%**
std. dev. simple 2 years		**0.82%**	**1.25%**	**0.93%**	**0.30%**	**1.24%**	**1.16%**	**0.32%**	**0.68%**	**0.42%**	**0.10%**	**5.11%**	**6.88%**	**1.73%**	**6.96%**
mean weighted all years		**34.11%**	**94.21%**	**31.62%**	**96.29%**	**95.35%**	**96.72%**	**111.49%**	**128.36%**	**96.01%**	**94.70%**	**111.38%**	**75.40%**	**87.21%**	**90.18%**
std. dev. weighted all years		**2.29%**	**2.51%**	**2.45%**	**2.33%**	**1.93%**	**2.31%**	**3.55%**	**2.98%**	**1.93%**	**2.67%**	**10.07%**	**4.35%**	**5.90%**	**7.78%**
mean weighted 5 years		**34.91%**	**93.60%**	**32.76%**	**96.50%**	**95.40%**	**96.28%**	**110.13%**	**127.50%**	**95.38%**	**95.01%**	**114.40%**	**74.91%**	**89.56%**	**91.35%**
std. dev. weighted 5 years		**0.82%**	**1.46%**	**0.96%**	**1.83%**	**1.51%**	**1.30%**	**1.52%**	**1.55%**	**0.29%**	**1.93%**	**9.11%**	**4.65%**	**3.84%**	**6.10%**
mean weighted 3 years		**34.93%**	**93.43%**	**33.19%**	**97.00%**	**95.94%**	**96.34%**	**109.66%**	**127.37%**	**95.42%**	**95.30%**	**116.58%**	**73.54%**	**91.15%**	**93.93%**
std. dev. weighted 3 years		**0.60%**	**0.98%**	**0.68%**	**1.17%**	**1.21%**	**0.98%**	**0.21%**	**0.49%**	**0.27%**	**0.46%**	**5.19%**	**4.52%**	**1.63%**	**5.25%**
mean weighted 2 years		**34.81%**	**93.28%**	**33.42%**	**97.13%**	**96.32%**	**96.22%**	**109.60%**	**127.46%**	**95.50%**	**95.21%**	**116.26%**	**72.20%**	**91.67%**	**95.68%**
std. dev. weighted 2 years		**0.35%**	**0.53%**	**0.40%**	**0.13%**	**0.53%**	**0.49%**	**0.13%**	**0.29%**	**0.18%**	**0.04%**	**2.18%**	**2.93%**	**0.74%**	**2.97%**

Enrollment Projections

Baseline enrollment projections by school were developed for the DCPS and PCS schools in the District of Columbia using the official audited enrollment by school, by grade from 2008-09 through 2017-18 provided by OSSE (https://osse.dc.gov/enrollment). The enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used to project DCPS school enrollment and a 2-year weighted average of survival ratios was used to project PCs school enrollment. Live birth counts were used to project kindergarten enrollment; PK, Adult, UG, and SPED UG were kept flat at the current 2017-18 enrollment.

Projected Enrollment - System-wide (Baseline)

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	5,682	5,682	5,682	5,682	5,682	5,682	5,682	5,682	5,682	5,682
PK4	7,036	7,036	7,036	7,036	7,036	7,036	7,036	7,036	7,036	7,036
K	7,447	7,624	7,663	7,880	7,717	7,717	7,717	7,717	7,717	7,717
1	7,170	7,165	7,329	7,356	7,565	7,414	7,414	7,414	7,414	7,414
2	6,877	6,846	6,844	6,998	7,020	7,230	7,084	7,084	7,084	7,084
3	6,611	6,684	6,657	6,647	6,796	6,809	7,023	6,879	6,879	6,879
4	6,218	6,268	6,329	6,283	6,271	6,418	6,426	6,635	6,492	6,492
5	6,038	5,906	5,953	5,995	5,935	5,942	6,079	6,082	6,295	6,149
6	5,612	5,475	5,415	5,447	5,495	5,438	5,433	5,567	5,560	5,768
7	5,070	5,452	5,330	5,276	5,310	5,360	5,318	5,315	5,451	5,439
8	4,766	4,958	5,322	5,211	5,173	5,209	5,286	5,247	5,240	5,378
9	5,916	6,451	6,675	6,908	6,732	6,724	6,762	6,846	6,870	6,877
10	4,068	4,161	4,572	4,704	4,861	4,735	4,737	4,765	4,828	4,853
11	4,125	3,663	3,765	4,148	4,273	4,387	4,273	4,281	4,304	4,359
12	3,826	3,872	3,444	3,528	3,899	4,023	4,114	4,010	4,015	4,039
Adult	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
UG	363	363	363	363	363	363	363	363	363	363
SPED UG	384	384	384	384	384	384	384	384	384	384
Grand Total	**92,160**	**92,941**	**93,714**	**94,797**	**95,463**	**95,822**	**96,082**	**96,258**	**96,565**	**96,864**

Source: Cooperative Strategies

Projected Enrollment - System-wide (Baseline)

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718	12,718
K - 5	40,361	40,493	40,775	41,159	41,304	41,530	41,743	41,811	41,881	41,735
6 - 8	15,448	15,885	16,067	15,934	15,978	16,007	16,037	16,129	16,251	16,585
9 - 12	17,935	18,147	18,456	19,288	19,765	19,869	19,886	19,902	20,017	20,128
Other	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698	5,698
K - 12	**73,744**	**74,525**	**75,298**	**76,381**	**77,047**	**77,406**	**77,666**	**77,842**	**78,149**	**78,448**
Grand Total	**92,160**	**92,941**	**93,714**	**94,797**	**95,463**	**95,822**	**96,082**	**96,258**	**96,565**	**96,864**

Source: Cooperative Strategies

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.

Projected Enrollment - DCPS

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374
PK4	3,423	3,423	3,423	3,423	3,423	3,423	3,423	3,423	3,423	3,423
K	4,222	4,310	4,325	4,449	4,360	4,360	4,360	4,360	4,360	4,360
1	4,190	4,205	4,291	4,300	4,425	4,339	4,339	4,339	4,339	4,339
2	3,948	4,039	4,058	4,139	4,147	4,271	4,187	4,187	4,187	4,187
3	3,870	3,888	3,983	3,996	4,074	4,074	4,203	4,116	4,116	4,116
4	3,766	3,783	3,809	3,894	3,901	3,983	3,979	4,117	4,027	4,027
5	3,554	3,450	3,466	3,507	3,570	3,590	3,667	3,663	3,799	3,707
6	2,446	2,343	2,365	2,376	2,412	2,487	2,488	2,551	2,537	2,646
7	2,390	2,525	2,427	2,452	2,463	2,498	2,580	2,583	2,653	2,635
8	2,432	2,469	2,592	2,501	2,532	2,543	2,583	2,668	2,669	2,742
9	3,521	3,952	4,065	4,099	3,977	3,991	4,011	4,062	4,106	4,114
10	2,374	2,517	2,822	2,900	2,932	2,846	2,862	2,877	2,917	2,953
11	2,675	2,293	2,434	2,731	2,815	2,829	2,748	2,764	2,779	2,814
12	2,473	2,543	2,188	2,314	2,604	2,689	2,690	2,613	2,629	2,643
Adult	408	408	408	408	408	408	408	408	408	408
UG	193	193	193	193	193	193	193	193	193	193
SPED UG	137	137	137	137	137	137	137	137	137	137
Grand Total	**48,396**	**48,852**	**49,360**	**50,193**	**50,747**	**51,035**	**51,232**	**51,435**	**51,653**	**51,818**

Source: Cooperative Strategies

Projected Enrollment - DCPS

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	5,797	5,797	5,797	5,797	5,797	5,797	5,797	5,797	5,797	5,797
K - 5	23,550	23,675	23,932	24,285	24,477	24,617	24,735	24,782	24,828	24,736
6 - 8	7,268	7,337	7,384	7,329	7,407	7,528	7,651	7,802	7,859	8,023
9 - 12	11,043	11,305	11,509	12,044	12,328	12,355	12,311	12,316	12,431	12,524
Other	738	738	738	738	738	738	738	738	738	738
K - 12	**41,861**	**42,317**	**42,825**	**43,658**	**44,212**	**44,500**	**44,697**	**44,900**	**45,118**	**45,283**
Grand Total	**48,396**	**48,852**	**49,360**	**50,193**	**50,747**	**51,035**	**51,232**	**51,435**	**51,653**	**51,818**

Source: Cooperative Strategies

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.

Projected Enrollment - PCS

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308
PK4	3,613	3,613	3,613	3,613	3,613	3,613	3,613	3,613	3,613	3,613
K	3,225	3,314	3,338	3,431	3,357	3,357	3,357	3,357	3,357	3,357
1	2,980	2,960	3,038	3,056	3,140	3,075	3,075	3,075	3,075	3,075
2	2,929	2,807	2,786	2,859	2,873	2,959	2,897	2,897	2,897	2,897
3	2,741	2,796	2,674	2,651	2,722	2,735	2,820	2,763	2,763	2,763
4	2,452	2,485	2,520	2,389	2,370	2,435	2,447	2,518	2,465	2,465
5	2,484	2,456	2,487	2,488	2,365	2,352	2,412	2,419	2,496	2,442
6	3,166	3,132	3,050	3,071	3,083	2,951	2,945	3,016	3,023	3,122
7	2,680	2,927	2,903	2,824	2,847	2,862	2,738	2,732	2,798	2,804
8	2,334	2,489	2,730	2,710	2,641	2,666	2,703	2,579	2,571	2,636
9	2,395	2,499	2,610	2,809	2,755	2,733	2,751	2,784	2,764	2,763
10	1,694	1,644	1,750	1,804	1,929	1,889	1,875	1,888	1,911	1,900
11	1,450	1,370	1,331	1,417	1,458	1,558	1,525	1,517	1,525	1,545
12	1,353	1,329	1,256	1,214	1,295	1,334	1,424	1,397	1,386	1,396
Adult	4,543	4,543	4,543	4,543	4,543	4,543	4,543	4,543	4,543	4,543
UG	170	170	170	170	170	170	170	170	170	170
SPED UG	247	247	247	247	247	247	247	247	247	247
Grand Total	**43,764**	**44,089**	**44,354**	**44,604**	**44,716**	**44,787**	**44,850**	**44,823**	**44,912**	**45,046**

Source: Cooperative Strategies

Projected Enrollment - PCS

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	6,921	6,921	6,921	6,921	6,921	6,921	6,921	6,921	6,921	6,921
K - 5	16,811	16,818	16,843	16,874	16,827	16,913	17,008	17,029	17,053	16,999
6 - 8	8,180	8,548	8,683	8,605	8,571	8,479	8,386	8,327	8,392	8,562
9 - 12	6,892	6,842	6,947	7,244	7,437	7,514	7,575	7,586	7,586	7,604
Other	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960
K - 12	**31,883**	**32,208**	**32,473**	**32,723**	**32,835**	**32,906**	**32,969**	**32,942**	**33,031**	**33,165**
Grand Total	**43,764**	**44,089**	**44,354**	**44,604**	**44,716**	**44,787**	**44,850**	**44,823**	**44,912**	**45,046**

Source: Cooperative Strategies

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.

System-wide Enrollment Projections

Based on the system-wide enrollment projections, using the total student population, it is anticipated that enrollment will continue to increase over the next ten years by approximately 12,099 students, a majority of that growth anticipated in the first five [5] years. The system-wide enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used. Live birth counts were used to project PK and kindergarten enrollment; Adult, UG, and SPED UG were kept flat at the current 2017-18 enrollment. These are the projections that the post-baseline enrollment projection by school roll-up should be reconciled to. *These enrollment projections relate to Step 8 of Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School*

Projected Enrollment - 3 Year Simple Average - System-wide

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	5,716	5,885	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761
PK4	7,226	7,269	7,484	7,326	7,326	7,326	7,326	7,326	7,326	7,326
K	7,435	7,636	7,682	7,909	7,742	7,742	7,742	7,742	7,742	7,742
1	7,205	7,180	7,374	7,418	7,638	7,477	7,477	7,477	7,477	7,477
2	6,924	6,926	6,902	7,089	7,131	7,342	7,187	7,187	7,187	7,187
3	6,575	6,696	6,698	6,675	6,855	6,897	7,100	6,951	6,951	6,951
4	6,354	6,366	6,483	6,485	6,463	6,637	6,677	6,875	6,730	6,730
5	6,178	6,235	6,247	6,362	6,364	6,342	6,513	6,552	6,746	6,604
6	5,830	5,902	5,957	5,968	6,078	6,080	6,059	6,222	6,259	6,445
7	5,134	5,753	5,824	5,878	5,889	5,998	5,999	5,979	6,140	6,177
8	4,830	5,058	5,668	5,738	5,791	5,802	5,909	5,911	5,890	6,049
9	5,859	6,305	6,603	7,399	7,490	7,559	7,573	7,713	7,715	7,688
10	4,297	4,313	4,641	4,860	5,446	5,513	5,564	5,575	5,677	5,679
11	4,289	4,040	4,055	4,364	4,570	5,120	5,184	5,232	5,241	5,338
12	3,888	4,056	3,821	3,835	4,127	4,321	4,842	4,902	4,947	4,957
Adult	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
UG	141	141	141	141	141	141	141	141	141	141
SPED UG	384	384	384	384	384	384	384	384	384	384
Grand Total	**93,216**	**95,096**	**96,676**	**98,543**	**100,147**	**101,393**	**102,389**	**102,881**	**103,265**	**103,587**

Source: Cooperative Strategies

Projected Enrollment - 3 Year Simple Average - System-wide

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,942	13,154	13,245	13,087	13,087	13,087	13,087	13,087	13,087	13,087
K - 5	40,671	41,039	41,386	41,938	42,193	42,437	42,696	42,784	42,833	42,691
6 - 8	15,794	16,713	17,449	17,584	17,758	17,880	17,967	18,112	18,289	18,671
9 - 12	18,333	18,714	19,120	20,458	21,633	22,513	23,163	23,422	23,580	23,662
Other	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476	5,476
K - 12	**74,798**	**76,466**	**77,955**	**79,980**	**81,584**	**82,830**	**83,826**	**84,318**	**84,702**	**85,024**
Grand Total	**93,216**	**95,096**	**96,676**	**98,543**	**100,147**	**101,393**	**102,389**	**102,881**	**103,265**	**103,587**

Source: Cooperative Strategies

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.

Enrollment Projections Based on Residence

Enrollment projections based on boundary of residence are useful for planning school facilities and/or attendance boundaries. Knowing if the student population in a boundary is increasing or decreasing provides guidance for capital planning. While this enrollment projection is not germane to the process recommendations in *Section 6: Proposed Process and Methodology for Developing Enrollment Projections by School*, these enrollment projections can be extremely useful in facility and boundary planning.

Historical Enrollment

Student data by address points for school years 2013-14 through 2017-18, provided by OSSE, were geocoded and aggregated to the DCPS elementary boundaries. Historical enrollment in the District of Columbia (DCPS and PCS schools), based on the student data, increased 9,194 students, or approximately 11 percent, from the 2013-14 to the 2017-18 school year. It should be noted that the overall historical enrollment between the baseline by school and elementary boundary (residence) projections differ (due to being different data sets) and therefore the enrollment projections presented also differ. In addition, aggregating the data differently will yield different results.

Historical Enrollment - System-wide (based on Residence)

Grade	2013-14	2014-15	2015-16	2016-17	2017-18
PK3	5,133	5,495	5,333	5,608	5,686
PK4	6,734	6,801	6,983	6,949	7,041
K	7,174	7,268	7,319	7,578	7,465
1	6,787	7,036	7,056	7,139	7,222
2	6,005	6,659	6,789	6,827	6,820
3	5,479	5,848	6,464	6,594	6,602
4	4,826	5,294	5,701	6,293	6,339
5	4,648	4,830	5,250	5,601	6,159
6	4,452	4,649	4,703	5,036	5,270
7	4,617	4,468	4,603	4,665	4,972
8	4,425	4,604	4,429	4,566	4,567
9	6,085	6,510	6,499	6,552	6,066
10	4,370	4,284	4,350	4,610	4,687
11	3,786	3,916	4,034	4,115	4,220
12	3,267	3,415	3,702	3,629	3,862
Adult	4,788	4,234	4,176	4,971	4,951
UG	159	940	509	NA	NA
Grand Total	**82,735**	**86,251**	**87,900**	**90,733**	**91,929**

Source: OSSE Student Data

Historical Enrollment - System-wide (based on Residence)

Grade	2013-14	2014-15	2015-16	2016-17	2017-18
PK	11,867	12,296	12,316	12,557	12,727
K - 5	34,919	36,935	38,579	40,032	40,607
6 - 8	13,494	13,721	13,735	14,267	14,809
9 - 12	17,508	18,125	18,585	18,906	18,835
Other	4,947	5,174	4,685	4,971	4,951
K - 12	**65,921**	**68,781**	**70,899**	**73,205**	**74,251**
Grand Total	**82,735**	**86,251**	**87,900**	**90,733**	**91,929**

Source: OSSE Student Data

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.[1]

Birth Data

Resident live birth counts by address were provided by the District of Columbia Department of Health, aggregated by elementary boundary, and used to project kindergarten enrollment of students living within each elementary boundary. It should be noted that actual live birth counts are available through 2016 and project kindergarten enrollment through 2021-22. To project kindergarten through 2027-28, an average number of live births for the 3 most recent years of available data was used.

Survival Ratios

The following table illustrates the historical survival ratios in D.C. (based on the student data) over the past ten years by grade level.

Survival Ratios - System-wide (based on Residence)

from	to	Birth to K	K to 1	Birth to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
2013	2014	80.69%	98.08%	77.03%	98.11%	97.39%	96.62%	100.08%	100.02%	100.36%	99.72%	147.12%	70.40%	89.61%	90.20%
2014	2015	79.94%	97.08%	78.34%	96.49%	97.07%	97.49%	99.17%	97.37%	99.01%	99.13%	141.16%	66.82%	94.16%	94.54%
2015	2016	81.58%	97.54%	77.97%	96.75%	97.13%	97.35%	98.25%	95.92%	99.19%	99.20%	147.93%	70.93%	94.60%	89.96%
2016	2017	79.59%	95.30%	77.75%	95.53%	96.70%	96.13%	97.87%	94.09%	98.73%	97.90%	132.85%	71.54%	91.54%	93.85%

Enrollment Projections

Enrollment projections were developed based on the residence of where students (DCPS and PCS) live within DCPS elementary boundaries. The enrollment projections were developed using the cohort survival methodology. A 3-year simple average of survival ratios was used. Live birth counts were used to project kindergarten enrollment; PK and Adult were kept flat at the current 2017-18 enrollment.

Projected Enrollment - System-wide (based on Residence)

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK3	5,686	5,686	5,686	5,686	5,686	5,686	5,686	5,686	5,686	5,686
PK4	7,041	7,041	7,041	7,041	7,041	7,041	7,041	7,041	7,041	7,041
K	7,530	7,736	7,824	8,095	7,885	7,885	7,885	7,885	7,885	7,885
1	7,263	7,337	7,519	7,616	7,879	7,674	7,674	7,674	7,674	7,674
2	6,998	7,027	7,098	7,284	7,374	7,638	7,432	7,432	7,432	7,432
3	6,663	6,842	6,879	6,952	7,124	7,220	7,484	7,276	7,276	7,276
4	6,440	6,493	6,677	6,715	6,799	6,966	7,054	7,317	7,116	7,116
5	6,285	6,374	6,443	6,625	6,659	6,750	6,918	7,010	7,281	7,074
6	5,929	6,053	6,120	6,186	6,394	6,407	6,508	6,672	6,768	7,039
7	5,244	5,893	6,022	6,090	6,157	6,372	6,381	6,483	6,650	6,741
8	4,944	5,219	5,859	5,988	6,049	6,119	6,324	6,339	6,442	6,598
9	6,497	6,989	7,359	8,290	8,454	8,541	8,616	8,912	8,915	9,076
10	4,266	4,569	4,929	5,193	5,855	5,978	6,044	6,105	6,327	6,336
11	4,412	4,017	4,302	4,638	4,890	5,517	5,621	5,704	5,756	5,969
12	3,944	4,124	3,752	4,018	4,335	4,576	5,158	5,258	5,335	5,385
Adult	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
Grand Total	**94,093**	**96,351**	**98,461**	**101,368**	**103,532**	**105,321**	**106,777**	**107,745**	**108,535**	**109,279**

Source: Cooperative Strategies

Projected Enrollment - System-wide (based on Residence)

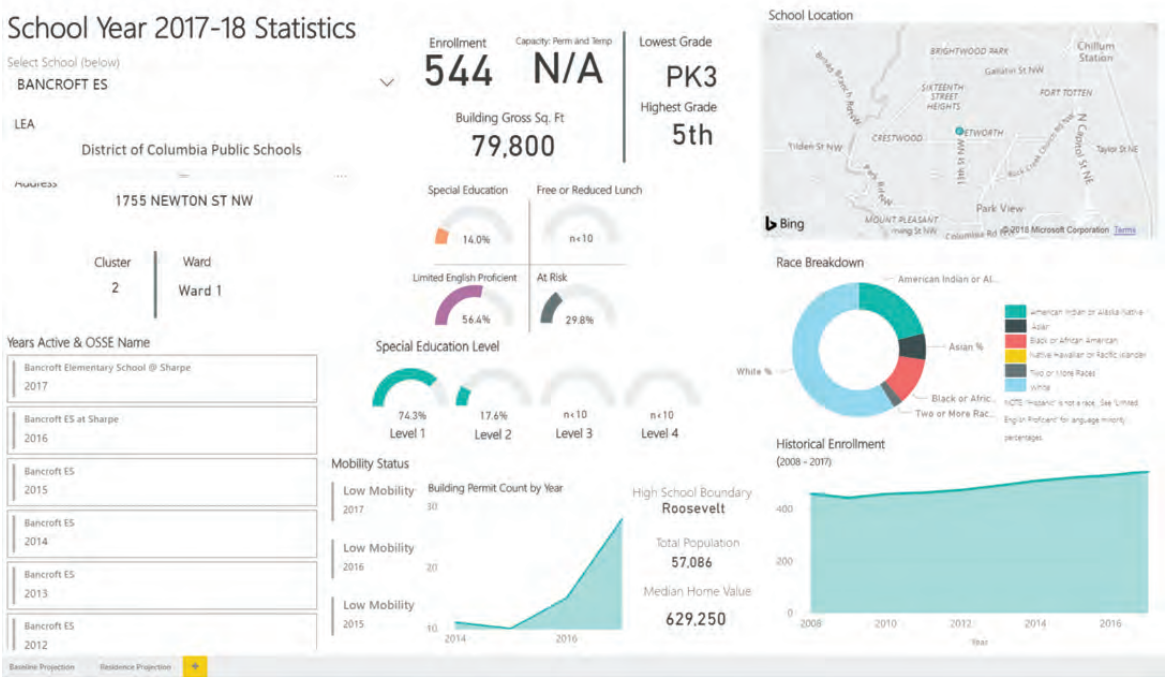
Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727	12,727
K - 5	41,179	41,809	42,440	43,287	43,720	44,133	44,447	44,594	44,664	44,457
6 - 8	16,117	17,165	18,001	18,264	18,600	18,898	19,213	19,494	19,860	20,378
9 - 12	19,119	19,699	20,342	22,139	23,534	24,612	25,439	25,979	26,333	26,766
Other	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951	4,951
K - 12	**76,415**	**78,673**	**80,783**	**83,690**	**85,854**	**87,643**	**89,099**	**90,067**	**90,857**	**91,601**
Grand Total	**94,093**	**96,351**	**98,461**	**101,368**	**103,532**	**105,321**	**106,777**	**107,745**	**108,535**	**109,279**

Source: Cooperative Strategies

The darker shades of blue represent smaller cohorts while the darker shades of red represent larger cohorts in comparison to the historical, and all of the projected district-wide enrollment.

Interactive Dashboard

All information used in this process has been placed in an interactive dashboard, which is available at *dcauditor.org*. Due to FERPA privacy requirements, any subgroup information that is representative of less than 10 students or encompasses all students may have been suppressed.



School-level data available on the dashboard includes:

Background Data Sheet

- LEA
- Address
- School location map (includes program locations over the past 10 years)
- Cluster
- Ward
- Years open
- Total enrollment (2017-18)
- Historical enrollment (2008-2017)
- Capacity (permanent and temporary)
- Building square footage
- Racial makeup
- Special education percentage*
    - Levels 1-4*
- Free or reduced lunch percentage*
- Limited English proficiency (LEP) percentage*
- At risk percentage*
- Mobility status
    - 2015-2017

- High school boundary
    - Building permit counts by year
    - Total population (2017)
    - Median home value (2017)

Baseline Projection Sheet

- Feeder pattern information
- Birth data (2009-2017)
- Historical enrollment (2008-2017)
- Survival ratios
- Baseline projected enrollment (2018-19 – 2027-28)

Residence Projection Sheet

- Historical and projected enrollment (2013 -14 – 2027-28)
- Births by boundary (2003-2016)
- Survival ratios

*Denotes data that is subject to suppression due to FERPA requirements.

[1] The following schools are not included in the historical enrollment analyzed in this study but are included in the total OSSE Audited Enrollment Report:

- Non-Public
- General Education Residential Students
- Inspiring Youth Program (Incarcerated)
- Maya Angelou Academy at New Beginnings
- Headstart Phase 2
- Headstart Spanish Development

Conclusion

Predicting future public-school enrollment, particularly in a dynamic school choice environment like the District of Columbia, is challenging. Potential changes in the regional economy, school openings and closings, and changing perceptions of school quality all interact in ways that require ongoing collection and analysis of data by people with local knowledge and with technical skills. Even with sound processes for capturing local knowledge and using technical support, there is no crystal ball for projecting enrollment.

The Study Team approached the research to focus on improving the accuracy of enrollment projections in the District of Columbia. In each study effort, the question of impact on accuracy was raised. In Section 1: Dynamic City and Schools, the question was "what factors appeared to affect the school supply and parental demand and what information is needed to make accurate projections?" In Section 2 and 3: Best Practices and Practices in Comparable Cities the question was, "can we find processes or methods from other cities and states that will improve the accuracy of DC's enrollment projections?" In Section 4: Process and Methods, the questions were "what processes and methods are used by the agencies?" and "do they lead to accurate projections?" In Section 5: Testing and Developing Methods, we compared the projections done by DCPS and PCS to actual enrollments to understand what might be required to improve the methods; and we tested a standard projection methodology in a blind study to determine whether it was possible to achieve accurate projections using established industry planning standard methods, and finally, we tested a hypothesis that high levels of student mobility would strongly correlate to high levels of projection error.

The primary concern through the study was how to improve projections by school since the impact of errors at the school level can significantly affect resource equity for local school budgets. Errors in school level projections can affect whether a neighborhood will have access to adequate capacity in a school being planned and designed. Errors in school level projections can affect whether a charter enrollment cap is appropriate, or whether a new charter is authorized. It is clear from the study that getting accurate projections by school by grade is extremely difficult.

While the data and information collection and compilation was onerous, the Team found much good process and methodology used by the District. If the District adopts the proposed recommendations, there would be a much clearer path to short and long-term enrollment projections and increased accuracy at the District by grade level. By using a well-managed set of at least ten years of longitudinal student and school-level data and applying a cohort survival ratio to births and grade to grade change, the District should be able to reliably project its next year budget requirements by grade and sub-group and support long-term enrollment projections and planning.

However, there are intrinsic challenges to accurate projections in mobile populations that are small, as so many D.C. public schools are. Because of the inherent challenges to this, the study may raise some other questions.

We hope this study will open up dialogue in the city on school planning and budgeting. Officials and citizens alike can use the findings and questions raised by this study to explore improvements to public education planning and budgeting processes, to the benefit of the public schools for the families and communities in the District of Columbia, not just for the moment, but for generations to come.

Acknowledgements

On behalf of Cooperative Strategies in partnership with the 21st Century School Fund and the Urban Institute, we would like to extend our appreciation to the Office of the D.C. Auditor for the opportunity to provide this Study of Enrollment in D.C. Public Schools Including Current Methodology and Future Projections. In addition, we would like to thank the agencies that provided the data analyzed in this study.

They include:

- Association of Independent Schools of Greater Washington
- D.C. Health, Center for Policy Planning & Evaluation
- D.C. Office of Planning (OP)
- D.C. Public Charter School Board (PCSB)
- Department of General Services (DGS)
- District of Columbia Public Schools (DCPS)
- My School D.C.
- Office of the Deputy Mayor of Education (DME)
- Office of the Chief Financial Officer (OCFO)
- Office of the Chief Technology Officer (OCTO)
- Office of the State Superintendent of Education (OSSE)
- Public Charter Schools (PCS)

Cooperative Strategies
3325 Hilliard Rome Rd., Hilliard OH, 43026
www.coopstrategies.com
Tracy Richter, President, Partner
Scott Leopold, Partner
David Sturtz, Partner
Ann Hoffsis, Senior Director
Alex Boyer, Associate Director

Thurgood Marshall Center
1816 12th Street NW Washington, DC 20009
www.21csf.org
Mary Filardo, Executive Director
Nancy Huvendick, DC Program Director
Will Perkins, Research and Policy Associate

Urban Institute
2100 M Street NW, Washington, DC 20037
https://www.urban.org
Steven Martin, Senior Research Associate
Megan Gallagher, Senior Research Associate
Yipeng Su, Research Analyst
Constance Lindsay, Research Associate
Peter Tatian, Senior Fellow and Research Director for Urban-Greater DC
Graham MacDonald, Chief Data Scientist

Agency Comments

Office of the Deputy Mayor for Education

September 14, 2018

Kathleen Patterson
District of Columbia Auditor
717 14th Street NW, Suite 900
Washington, DC 20005

Dear Ms. Patterson:

The Deputy Mayor for Education (DME) and District education agencies appreciate the opportunity to review and respond to your comprehensive and informative report, *Study of Enrollment in D.C. Public Schools*, researched and written by Cooperative Strategies, the Urban Institute, and the 21st Century School Fund.

As the authors' found, the next year enrollment projection process is complex and challenging due to Washington, DC's high choice school system and our growing population. Even recognizing this, total general education enrollment projections of District of Columbia Public Schools (DCPS) and the public charter local education agencies (LEAs), under DME's management, have been quite accurate and we are already implementing many of the gold standard approaches recommended.

The District's population started growing after 2000 and is now over 700,000 residents. Our child population has also increased by approximately 23,600 children between 2010 and 2017. Families have more confidence in our schools, as evidenced by the growing public school enrollment and the growing share of all Washington, DC students choosing to enroll in the public school system instead of private schools.

Washington, DC's educational system is also dynamic, as the report accurately noted. All families – regardless of economic status – deserve options, which include DCPS schools of right; DCPS out of boundary, selective, and citywide schools; and public charter schools. Our enrollment policies support school choice as opposed to assigning students to just one school option based on geography. DCPS and the DC Public Charter School Board have opened and closed schools over the last decade, and public charter school locations have changed depending on facility availability and replication and expansion of programs. The District has made historic investments in DCPS school modernizations over the last 10 years. We have also increased the public charter school facility allotment recently and committed to doing so for three additional fiscal years.

DME is committed to ensuring that the DCPS and public charter next-year enrollment projections are as accurate as possible so that schools have the funds they need and the city has the appropriate amount of money budgeted. The projections are critical to ensure that LEAs receive sufficient funding to operate their schools, in both the DCPS and charter school sectors. Accurate budgeting also ensures that the city does not have to face a budget shortfall: if the projections are too low, the District must find contingency funds after the budget has already been approved and committed.

Currently, DME manages the enrollment projection process and submits the final Uniform per Student Funding Formula (UPSFF) grade and special need enrollment projections to the Office of Budget and Performance to be considered by the Mayor and included in her budget. The DCPS sector-wide UPSFF enrollment projections take into account mid-year enrollment, since DCPS is the system of right in the District of Columbia and they tend to gain net two percent in enrollment during the course of the school year. DCPS's total general enrollment projections have been between 97% and 99% accurate compared to DCPS's highest enrollment for FY14 through FY17.

We found a number of the study's findings informative. First, it was helpful to learn about other enrollment project practices from comparable school districts and states. DCPS has been implementing what is considered the gold standard for the past 10 years, the cohort survival method and adjustment of projections based on expert on-the-ground knowledge through a centralized portal. Second, the authors' analysis of the accuracy of the DCPS and public charter school projections was also informative, as they showed that the accuracy of DCPS enrollment projections has improved over time. The study provided information about how close the projections were and in which direction they were off – some wards' projections were quite accurate (particularly Ward 3) while others wards (particularly Wards 5, 7, and 8) were less accurate than the average. We found it very interesting that student mobility contributes to inaccuracies when just the cohort survival method (without the expert adjustments that are implemented by DCPS and the public charter LEAs) is compared to the audited enrollments.

We had hoped that the authors would have analyzed how accurate the DCPS district-wide grade-band projections (e.g., early childhood, elementary, middle, and high school grades) were compared to the October audited enrollment instead of just at the school level. DCPS adjusts funding and resources to individual schools if the schools are identified as being under projected. DCPS will continue to analyze how close its grade band projections are to actual enrollment.

The authors identified the need to do long-term five or 10 year enrollment projections at the individual school level for facility planning purposes, separate from enrollment projections as a next year budgeting exercise. DME agrees and recognizes the importance of long-term projections; five and 10 year school-level enrollment projections were included in the 2018 Master Facilities Plan scope of work commissioned in February 2018. These longer-term enrollment projections are critical to inform more immediate modernization efforts as well future capital plans. The findings from this study, in addition to the analysis provided in the forthcoming 2018 Master Facilities Plan, will help inform how we address five and 10 enrollment projections in the future.

The authors recommend that the administration compile longitudinal information, at the school, facility, and neighborhood levels, to help assist with both the one-year enrollment projections for budgeting and longer-term facility enrollment projection processes. The DC Cross Sector Collaboration Task Force, commissioned by Mayor Bowser and co-chaired by the Deputy Mayor for Education, came to the same conclusion. The forthcoming report from this Task Force will recommend

that such data and information be compiled by DME to help support the decisions made around opening and siting of schools and programs. This effort will also benefit the enrollment projection (short and long term) process as well. There is substantial overlap in the specific metrics recommended by the study authors and the Task Force, and the DME will consider incorporating the additional data metrics the authors recommended.

While the majority of the report was informative, there are sections that we believe are inaccurate. The authors did not clarify that the DCPS projections process involves two internal steps resulting in the overall DCPS LEA-level projections. The report fails to include how the DCPS Office of Strategic School Planning and Enrollment provides the DCPS Office of the Chief Business Officer the school-level projections. The Office of the Chief Business Officer then develops DCPS's LEA UPSFF projections, which include the additional 2% for mid-year mobility. DME itself does not add the 2% to DCPS' enrollment projections. Additionally, the Office of the Chief Business Officer provides the LEA-level DCPS UPSFF enrollment projections to DME, not directly to the Office of the Chief Financial Officer, as stated in the report.

Further, the report did not accurately or comprehensively describe the factors that the DCPS Office of Strategic School Planning and Enrollment uses when developing the school-level projections. The office does not take facility capacities into account for kindergarten through 12th grade projections; however, it does flag for DCPS internal review when projections exceed facility capacities. In the entry grade section of the report, the DCPS team also relies on cohort survival for its estimations for kindergarten and education campuses (pre-K through 8th grade). In addition, the DCPS Office of Strategic School Planning and Enrollment relies on district-wide grade band totals to monitor trends at the school level and district level, not just during the principal petition process.

Finally, we want to clarify that while the report stated that public charter schools do not use estimates of their conversion rate to set their number of seats in the lottery, we know that some charters do set lottery seats and enrollment targets based on past conversion or capture from the lottery.

We also must object to some recommendations. The authors recommend that the Office of the State Superintendent for Education (OSSE) take responsibility of the processes that LEAs are already performing well. This recommendation fundamentally intrudes on the Mayor's prerogative to assign tasks to different agencies and offices – such as the DME or OSSE. Recommending that OSSE own responsibility to run individual school-level cohort analysis will not necessarily increase the accuracy of an admittedly difficult task. Legislating how LEAs and the District as a whole conduct their enrollment methodologies in such a dynamic and changing environment could potentially introduce more error. More importantly, shifting the responsibility of working with the LEAs away from DME to OSSE misses the critical role that DME plays in the development of the Mayor's budget. Additionally, while we agree that conducting long-term enrollment projections are critical for facility planning, we do not believe it needs to be conducted simultaneously during the budget development. The budgetary enrollment projection process happens in a relatively short time period. DME believes the long-term projections should be coordinated with the Master Facilities Plan process, including the information provided annually.

In sum, we appreciate this substantial piece of work that will inform not only our projections, but other aspects of research and planning, within the government and by others. We also look forward to working with our schools, school communities, and agencies to continue to improve upon our processes and help plan for the future.

Sincerely,

Ahnna Smith, Interim Deputy Mayor for Education

Appendices

Appendix A - Section 1: Dynamic City and Schools

First Choice Schools 2014-2016

Top 10 Schools Listed as First Choice Schools in My School DC Lottery

Top 10 Schools listed as a first choice in the 2014-2015 lottery

School Name	Count of First Choice
School Without Walls High School	623
Washington Latin PCS – Middle School	537
Mundo Verde Bilingual PCS	485
Two Rivers PCS	485
Oyster-Adams Bilingual School	444
Brent Elementary School	396
Duke Ellington School of the Arts	382
KIPP DC – LEAP Academy PCS	357
McKinley Technology High School	348
Capital City PCS – Lower School	329

Source: Urban Institute tabulation of My School DC Lottery Data

Top 10 Schools listed as a first choice in the 2015-2016 lottery

School Name	Count of First Choice
School Without Walls High School	594
Washington Latin PCS – Middle School	486
Mundo Verde Bilingual PCS	459
Two Rivers PCS	452
Washington Yu Ying PCS	433
Oyster-Adams Bilingual School	408
Duke Ellington School of the Arts	392
KIPP DC – LEAP Academy PCS	346
Brent Elementary School	345
KIPP DC – College Preparatory PCS	329

Source: Urban Institute tabulation of My School DC Lottery Data

Top 10 schools listed as a first choice in the 2016-2017 lottery

School Name	Count of First Choice
Washington Latin PCS – Middle School	602
School Without Walls High School	570
Mundo Verde Bilingual PCS	469
Rocketship DC PCS	419
School-Within-School	404
Creative Minds International PCS	397
Washington Yu Ying PCS	386
Two Rivers PCS at 4th Street	362
Brent Elementary School	353
Oyster-Adams Bilingual School (Oyster)	350

Source: Urban Institute tabulation of My School DC Lottery Data

Top 10 Schools listed as a first choice in 2016-2017 lottery, by grade level

School Name	Sector	Count of First Choice	PK3	PK4	K	1	2	3	4	5	6	7	8	9	10	11	12
Washington Latin PCS – Middle School	PCS	602	-	-	-	-	-	-	-	295	152	93	62	-	-	-	-
School Without Walls High School	DCPS	570	-	-	-	-	-	-	-	-	-	-	-	456	69	38	7
Mundo Verde Bilingual PCS	PCS	469	198	98	73	35	30	17	13	5	-	-	-	-	-	-	-
Rocketship DC PCS	PCS	419	94	66	113	83	63	-	-	-	-	-	-	-	-	-	-
School-Within-School	DCPS	404	156	88	59	34	26	18	16	7	-	-	-	-	-	-	-
Creative Minds International PCS	PCS	397	161	65	53	43	28	18	13	8	8	-	-	-	-	-	-
Washington Yu Ying PCS	PCS	386	163	85	70	42	26	-	-	-	-	-	-	-	-	-	-
Two Rivers PCS at 4th Street	PCS	362	81	33	35	27	21	34	39	33	32	19	8	-	-	-	-
Brent Elementary School	DCPS	353	94	84	43	40	30	26	18	18	-	-	-	-	-	-	-
Oyster-Adams Bilingual School (Oyster)	DCPS	350	-	150	74	53	43	30	-	-	-	-	-	-	-	-	-

Top 10 schools listed as a first choice for PK3 in 2016-2017

School Name	Sector	Count of First Choice
Mundo Verde Bilingual PCS	PCS	198
KIPP DC – LEAP Academy PCS	PCS	168
Washington Yu Ying PCS	PCS	163
Creative Minds International PCS	PCS	161
Ross Elementary School	DCPS	158
School-Within-School	DCPS	156
KIPP DC – Discover Academy PCS	PCS	129
Peabody Elementary School	DCPS	114
Hyde-Addison Elementary School	DCPS	105
DC Bilingual PCS	PCS	101

Top 10 schools listed as a first choice for 6th Grade in 2016-2017

School Name	Sector	Count of First Choice
Washington Latin PCS – Middle School	PCS	152
Deal Middle School	DCPS	121
District of Columbia International School (Spanish Language Program)	PCS	102
BASIS DC PCS	PCS	71
MacFarland Middle School Dual Language Program	DCPS	55
KIPP DC – KEY Academy PCS	PCS	53
Howard University Middle School of Mathematics and Science PCS	PCS	52
Stuart-Hobson Middle School	DCPS	52
KIPP DC – AIM Academy PCS	PCS	45
District of Columbia International School (Chinese Language Program)	PCS	44

Top 10 schools listed as a first choice for 9th Grade in 2016-2017

School Name	Sector	Count of First Choice
School Without Walls High School	DCPS	456
KIPP DC – College Preparatory PCS	PCS	271
Duke Ellington School of the Arts	DCPS	261
Benjamin Banneker High School	DCPS	226
McKinley Technology High School	DCPS	201
Wilson High School	DCPS	140
Washington Leadership Academy PCS	PCS	137
Columbia Heights Education Campus 9-12 (CHEC)	DCPS	135
Washington Latin PCS – Upper School	PCS	100
Empowering Males High School	DCPS	84

Master Longitudinal Data Set

See attached excel sheet “MasterLongitudinalDataSet.xlsx” for more information.

65 Independent and Religious Private Schools

DC PRIVATE SCHOOL	School Type	AISGW; DCOSP; AIMS	Address	Zip	Ward
Academia De La Recta Porta Christian Day School	Independent Private Schools	DCOSP	7614 Georgia Avenue NW	20012	4
Academy for Ideal Education	Independent Private Schools	DCOSP	4501 Dix Street NE	20019	5
Aidan Montessori School	Independent Private Schools	AISGW/DCOSP	2700 27th Street, NW	20008	3
Annunication School	Archdiocese of Washington	AISGW/DCOSP	3810 Massachusetts Ave., NW	20016	3
Archbishop Carroll HS	Archdiocese of Washington	AISGW/DCOSP	4300 Harewood Road NE	20017	5
Beauvoir, The National Cathedral Elem. School	Independent Private Schools	AISGW/DCOSP	500 Woodley Road, NW	20016	3
Blessed Sacrament	Archdiocese of Washington	AISGW/DCOSP	5841 Chevy Chase Parkway	20015	3
Blythe Templeton Academy	Independent Private Schools	DCOSP	921 Pennsylvania Avenue, SE	2003	6
Calvary Christian Academy	Independent Private Schools	DCOSP	806 Rhode Island Avenue NE	20018	5
Capitol Hill Day School	Independent Private Schools	AISGW	210 South Carolina Avenue, SE	20003	6
Christian Family Montessori School	Independent Private Schools	DCOSP	201 Allison Street NW, Suite B	20011	4
Cornerstone School	Independent Private Schools	AIMS/DCOSP	3742 Ely Place SE	20019	7
Dupont Park Adventist School (Alabama Ave.)	Independent Private Schools	DCOSP	3942 Alabama Avenue SE	20020	7
Dupont Park Adventist School (Mass. Ave.)	Independent Private Schools	DCOSP	3985 Massachusetts Avenue SE	20020	7
Edmund Burke School	Independent Private Schools	AISGW/DCOSP/AIM	4101 Connecticut Avenue, NW	20008	3
Emerson Prepartory School	Independent Private Schools	AIMS/DCOSP	1816 12th St, NW	20009	4
Georgetown Day School (High School)	Independent Private Schools	AISGW/DCOSP	4200 Davenport Street NW	20016	3
Georgetown Day School (Lower/Mid. School)	Independent Private Schools	AISGW/DCOSP	4530 MacArthur Blvd., NW	20007	3
Georgetown Visitation Preparatory School	Independent Private Schools	AISGW/DCOSP	1524 35th Street, NW	20007	3

DC PRIVATE SCHOOL	School Type	AISGW; DCOSP; AIMS	Address	Zip	Ward
Gonzaga College High School	Independent Private Schools	AISGW/DCOSP	19 Eye Street, NW	20001	6
Holy Trinity School	Archdiocese of Washington	AISGW/DCOSP	1325 36th Street, NW	20007	2
Howard University Early Learning Program	Independent Private Schools	DCOSP	531 College Street NW	20059	1
Jewish Primary Day School of the Nation's Capital (North Campus); Also Milton Gottesman Jewish Day School of the Nation's Capital	Independent Private Schools	AISGW/DCOSP/AIM	6045 16th Street NW	20011	4
Jewish Primary Day School of the Nation's Capital (South Campus) Also Milton Gottesman Jewish Day School of the Nation's Capital	Independent Private Schools	AISGW/DCOSP/AIM	4715 16th Street NW	20011	4
Kuumba Learning Center	Independent Private Schools	DCOSP	3328-3332 MLK Jr. Avenue SE	20032	8
Little Flower Montessori School	Independent Private Schools	DCOSP	3029 16th Street NW	20009	1
Little Folks School	Independent Private Schools	AISGW	3247 Q Street NW	20007	2
Lowell School	Independent Private Schools	AISGW/DCOSP/AIM	1640 Kalmia Road, NW	20012	4
Maret School	Independent Private Schools	AISGW/AIM	3000 Cathedral Avenue, NW	20008	3
Mysa School	Independent Private Schools	NA	1801 35th St. NW (Filmore School)	20007	2
National Cathedral School	Independent Private Schools	AISGW/DCOSP/AIM	3612 Woodley NW	20016	3
National Child Research Center	Independent Private Schools	AISGW/AIM	3209 Highland Place, NW	20008	3
National Presbyterian School	Independent Private Schools	AISGW/DCOSP/AIM	4121 Nebraska Avenue, NW	20016	3
Our Lady of Victory School	Archdiocese of Washington	DCOSP	4755 Whitehaven Parkway	2007	3
Parkmont School	Independent Private Schools	AISGW/DCOSP/AIM	4842 16th Street, NW	20011	4
Preparatory School of DC	Independent Private Schools	DCOSP	4501 16th Street NW	20011	4
Randall Hyland Private School	Independent Private Schools	DCOSP	4339 Bowen Road SE	20019	7
Roots Activity Learning Center	Independent Private Schools	DCOSP	6222 North Capitol St., NW	20011	4
Sacred Heart Bilingual School	Archdiocese of Washington	DCOSP	1625 Park Road, NW	20010	1
San Miguel School	Indepenent Catholic	DCOSP	7705 Georgia Avenue NW	20012	4

DC PRIVATE SCHOOL	School Type	AISGW; DCOSP; AIMS	Address	Zip	Ward
Sheridan School	Independent Private Schools	AISGW/DCOSP/AIM	4400 36th Street, NW	20008	3
Sidwell Friends School	Independent Private Schools	AISGW/DCOSP/AIM	3825 Wisconsin Avenue, NW	20016	3
St. Albans School (Washington, DC)	Independent Private Schools	AISGW/DCOSP/AIM	3101 Wisconsin Ave., NW	20016	3
St. Anselm's Abbey School (Washington, DC)	Independent Private Schools	AISGW/DCOSP/AIM	4501 South Dakota Avenue, NE	20017	5
St. Anthony Catholic School	Archdiocese of Washington	DCOSP	3400 12th Street, NE	2017	5
St. Augustine Catholic Academy	Archdiocese of Washington	DCOSP	1421 V St., NW	20009	5
St. Columba's Nursery School	Independent Private Schools	AISGW	4201 Albemarle Street NW	20016	3
St. Francis Xavier Catholic Academy	Archdiocese of Washington	DCOSP	2700 O St., SE	20020	7
St. John's College High School	Independent Private Schools	AISGW/DCOSP	2607 Military Road, NW	20015	4
St. Patrick's Episcopal Day School	Independent Private Schools	AISGW	4700 Whitehaven Parkway, NW	20007	3
St. Peter's School	Archdiocese of Washington	DCOSP	422 Third Street SE	20003	6
St. Thomas More Academy	Archdiocese of Washington	DCOSP	4265 Fourth Street SE	20032	8
The Bishop Walker School for Boys	Independent Private Schools	AISGW/DCOSP	3640 Martin Luther King, Jr. Avenue SE; (Holy Communion Campus)	20032	8
The Bishop Walker School for Boys	Independent Private Schools	AISGW/DCOSP	2683 Douglass Road SE; (Washington View Campus)	20020	8
The Bridges Academy	Independent Private Schools	DCOSP	6119 Georgia Avenue NW	20011	4
The Field School	Independent Private Schools	AISGW/DCOSP	2301 Foxhall Road, NW	20007	3
The Kingsbury Day School	Independent Private Schools	AISGW/DCOSP/AIM	5000 14th Street, NW	20011	4
The Lab School of Washington	Independent Private Schools	AISGW/AIM	4759 Reservoir Road, NW	20007	3
The Monroe School	Independent Private Schools	DCOSP	601 50th Street NE	20019	5
The River School	Independent Private Schools	AISGW/AIM	4880 MacArthur Boulevard, NW	20007	3
Washington International School	Independent Private Schools	AISGW	3100 Macomb Street, NW	20008	3
Washington Jesuit Academy	Independent Private Schools	AISGW/AIM	900 Varnum Street, NE	20017	5

DC PRIVATE SCHOOL	School Type	AISGW; DCOSP; AIMS	Address	Zip	Ward
Washington School for Girls	Archdiocese of Washington	AISGW/DCOSP	1901 Mississippi Avenue, SE, THE ARC;	20020	8
Washington School for Girls	Archdiocese of Washington	AISGW/DCOSP	1600 Morris Road, S.E (VIEW Campus)	20020	8
The Children's House of Washington	Independent Private Schools		3133 Dumbarton St., NW	20007	2

Appendix B - Processes & Methods in Comparable Cities

Interview Questions for Comparable Districts

District – Survey Questions

1. Contact information:
    a. School District Name
    b. Your name
    c. Title
    d. Email
    e. Phone

2. Does your school district develop enrollment projections (internally or with external organizations)?
    a. Yes
    b. No

(if yes, continue with survey)

3. Who develops the enrollment projections for your school district?
    a. Consultants
    b. Internal staff
    c. Other (please specify)

4. How many years are enrollment projections developed for?
    a. 1 year
    b. 5 years
    c. 10 years
    d. Other (please specify)

5. What is the primary purpose of these enrollment projections?
    a. Budgeting
    b. Facility Planning

c. Both equally
d. Other (please specify)

6. What is the level of detail the enrollment projections are developed to? (Please select all that apply.)
    a. District-wide
    b. By grade
    c. By school
    d. By geographic region
    e. Other (please specify)

7. Are enrollment projections made public or used internally only?
    a. Public
    b. Internal
    c. Other (please specify)

8. Are there state regulations that need to be followed in the development of enrollment projections?
    a. Yes
    b. No
    c. Other (please specify)

9. What factors do you believe impacts enrollment in your District? (Please select all that apply.)
    a. Charter schools (openings, closings, growth, etc.)
    b. Capacity
    c. Enrollment caps (on public, charter, private schools, etc.)
    d. Lottery and/or magnet schools
    e. Program placement and movement
    f. Open enrollment (inter- and intra-district)
    g. Choice
    h. Transfers
    i. Facility planning (opening and closing)
    j. Redistricting/Boundary changes
    k. Policy changes
    l. New housing development

m. Economic growth/decline
n. Private/non-public schools (openings, closings, growth, etc.)
o. Homeschool (growth, decline, etc.)
p. Other (please specify)

District – Interview Questions (face-to-face)

1. District Contact information (of interviewee):
    a. School District Name
    b. Name
    c. Title
    d. Email
    e. Phone

(if yes, to question 2 on survey – Do you develop enrollment projections?)

2. What is the data used to develop the enrollment projections?
    a. Live births?
    b. Housing?
    c. How much historical enrollment? What kind of historical enrollment (official headcount, ADM, etc.)?

3. What is the methodology used to develop the enrollment projections?
    a. Cohort model?
    b. Housing Model?
    c. Feedback collected?

4. Why do you believe the factors (checked in q. 9 of survey) impact enrollment and how are they factored into the development of enrollment projections?
    a. Charter schools (openings, closings, growth, etc.)
    b. Capacity
    c. Enrollment caps (on public, charter, private schools, etc.)
    d. Lottery and/or magnet schools
    e. Program placement and movement
    f. Open enrollment (inter- and intra-district)
    g. Choice
    h. Transfers
    i. Facility planning (opening and closing)
    j. Redistricting/Boundary changes
    k. Policy changes
    l. New housing development

m. Economic growth/decline
n. Private/non-public schools (openings, closings, growth, etc.)
o. Homeschool (growth, decline, etc.)
p. Other (please specify)

If yes to question 8 on survey (Are there state regulations that need to be followed in the development of enrollment projections?)

5. What are the state regulations that need to be followed in the development of enrollment projections? (provide description and documentation)

Based on answer to question 5 on survey (What is the primary purpose of these enrollment projections?)

6. Elaborate on how the enrollment projections are used to budget and/or plan (or other).

(if no to question 2 on survey – Do you develop enrollment projections?)

7. How do you budget or plan? (Does the state provide enrollment projections to you? Please elaborate.)

State Agency – Interview Questions (face-to-face)

1. State Agency Contact information (of interviewee):
    a. State Agency Name
    b. Name
    c. Title
    d. Email
    e. Phone

2. Are enrollment projections developed or utilized by the state?
    a. Yes
        i. Developed
        ii. Utilized (provided by District)
    b. No
    c. Other

If yes to #2: (developed by state):

3. Are enrollment projections approved by school districts? Is there an appeals process? (If so, please describe processes.)
4. Who develops the enrollment projections for the state?
    a. Consultants
    b. Internal staff
    c. Other (please specify)
5. How many years are enrollment projections developed for?
    a. 1 year
    b. 5 years
    c. 10 years
    d. Other (please specify)
6. What is the level of detail the enrollment projections are developed to? (Please select all that apply.)
    a. District-wide
    b. By grade
    c. By school
    d. By geographic region
    e. Other (please specify)
7. What is the data used to develop the enrollment projections?
    a. Live births?

b. Housing?
c. How much historical enrollment? What kind of historical enrollment (official headcount, ADM, etc.)?

8. What is the methodology used to develop the enrollment projections?
    a. Cohort model?
    b. Housing Model?
    c. Feedback collected?
9. Are any of the following factored into the development of enrollment projections? If so, how?
    a. Charter schools (openings, closings, growth, etc.)
    b. Capacity
    c. Enrollment caps (on public, charter, private schools, etc.)
    d. Lottery and/or magnet schools
    e. Program placement and movement
    f. Open enrollment (inter- and intra-district)
    g. Choice
    h. Transfers
    i. Facility planning (opening and closing)
    j. Redistricting/Boundary changes
    k. Policy changes
    l. New housing development
    m. Economic growth/decline
    n. Private/non-public schools (openings, closings, growth, etc.)
    o. Homeschool (growth, decline, etc.)
    p. Other (please specify)

If yes to #2: (utilized - provided by District):

10. Are there guidelines/regulations school districts must follow for development of enrollment projections submitted to the state? (i.e., methodology, data, documentation, etc.) (Provide description and get documentation, if available)
11. Does the state need to review/approve the enrollment projections submitted by school districts? (If so, please describe approval process.)

12. What is the primary purpose of enrollment projections at the state level?
    a. Plan for state share of education operating budget
    b. Plan for state share of capital outlay facility / capital funding approvals
    c. Both equally
    d. Other (please specify)

If no to #2:

1. How are school facilities planned/funded?
2. How are budgets established?

Sample District Letter

Office of the District of Columbia Auditor

March 12, 2018

Tom Boasberg, Superintendent
Denver Public Schools
Emily Griffith Campus
1860 Lincoln St., 12th Floor
Denver, CO 80203

Dear Superintendent Boasberg:

The Office of the D.C. Auditor is undertaking a comprehensive study of demographics and enrollment trends for the District of Columbia Public Schools (DCPS). The study is being conducted by the team of Cooperative Strategies, The 21st Century Fund, and Urban Institute.

The study is designed to develop a replicable methodology to perform enrollment projections in a high-choice environment such as exists in Washington D.C. and other urban centers around the country. **The Office of the D.C. Auditor requested that any study of DCPS's enrollment involve comparison to how like-Districts around the country project enrollment, and your district was determined to be one such district**. As you are well aware, there are many challenges in the large city and urban environments when attempting to project future enrollment: Charter school enrollments, open boundary policies, schools of choice, changes in housing patterns and student yields, and so on. It is my hope that this study will provide insights into not only enrollment patterns in DC, but have findings that apply to other urban centers nationwide.

I write today to request either an in person or virtual meeting between Cooperative Strategies and your school system to learn more about how you project student enrollment and how such projections are used. These interviews will be used to compare DCPS' current practices with like-districts around the country. The meeting would be preceded by a short survey of questions in preparation for the one-to-one meeting to conduct as efficient a meeting as possible.

The final report from the study for the Office of the D.C. Auditor will be made available to the public, and will acknowledge those who volunteered their time. Tracy Richter and Ann Hoffsis of Cooperative Strategies will contact you within a week to request a meeting (virtual or in-person). I include their contact information below. Please accept their invitation and my appreciation for your insights into this important issue. If you have any questions regarding this study, please contact me (kathy.patterson@dc.gov) or members of the study team.

Sincerely yours,

Kathy Patterson

Kathleen Patterson
District of Columbia Auditor

cc: David Suppes, Chief Operating Officer

717 14th Street, N.W., Suite 900, Washington, D.C. 20005 (202) 727-3600

Sample State Letter

Office of the District of Columbia Auditor

March 29, 2018

Megan Richardson, Administrative Lead
School Finance and Operations Division
Colorado Department of Education
201 E. Colfax Ave.
Denver, CO 80203

Dear Ms. Richardson:

The Office of the D.C. Auditor is undertaking a comprehensive study of demographics and enrollment trends for the District of Columbia Public Schools (DCPS). The study is being conducted by the team of Cooperative Strategies, The 21st Century Fund, and Urban Institute.

The study is designed to develop a replicable methodology to perform enrollment projections in a high-choice environment such as exists in Washington D.C. and other urban centers around the country. **The Office of the D.C. Auditor's study of DCPS's enrollment will involve comparison to how like-Districts around the country project enrollment, and the Denver Public Schools was determined to be one such district**. As you are well aware, there are many challenges in the large city and urban environments when attempting to project future enrollment: Charter school enrollments, open boundary policies, schools of choice, changes in housing patterns and student yields, and so on. It is my hope that this study will provide insights into not only enrollment patterns in DC, but have findings that apply to other urban centers nationwide.

I write today to request either an in person or virtual meeting between Cooperative Strategies and your agency to learn more about how you project student enrollment and how such projections are used. These interviews will be used to compare DCPS' current practices with like-districts around the country. The meeting would be preceded by a short survey of questions in preparation for the one-to-one meeting to conduct as efficient a meeting as possible.

The final report from the study for the Office of the D.C. Auditor will be made available to the public, and will acknowledge those who volunteered their time. Tracy Richter and Ann Hoffsis of Cooperative Strategies will contact you within a week to request a meeting (virtual or in-person). I include their contact information below. Please accept their invitation and my appreciation for your insights into this important issue. If you have any questions regarding this study, please contact me (kathy.patterson@dc.gov) or members of the study team.

Sincerely yours,

Kathy Patterson

Kathleen Patterson
District of Columbia Auditor

717 14th Street, N.W., Suite 900, Washington, D.C. 20005 (202) 727-3600

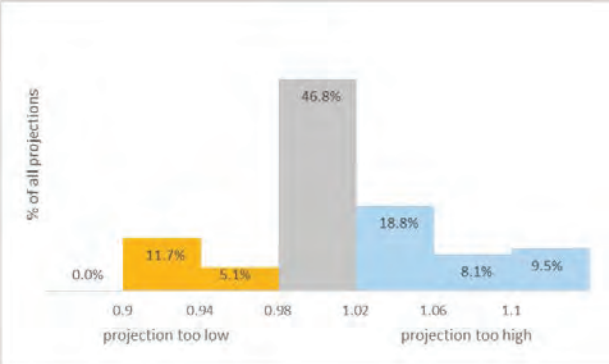
Appendix C – Testing and Developing Methods for D.C.

Projection to Enrollment Ratios by Ward for DCPS

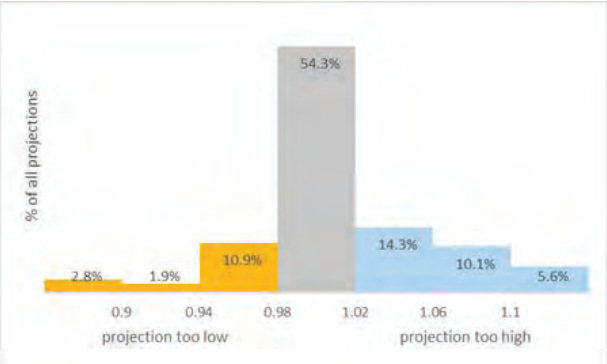
FIGURE 2A – 2H

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18, By Ward

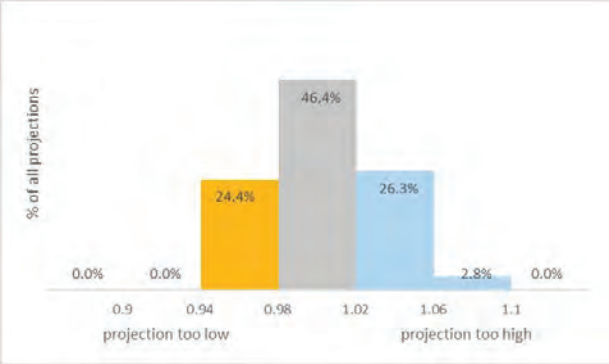
2A: Ward 1



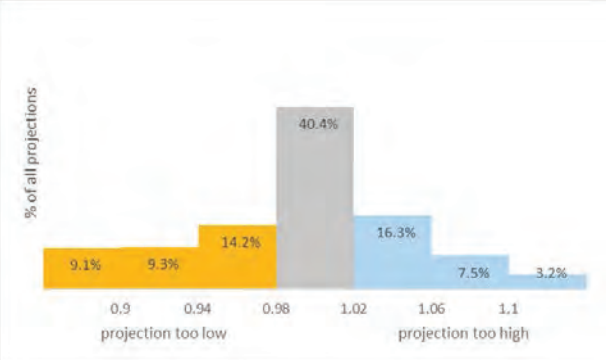
2B: Ward 2



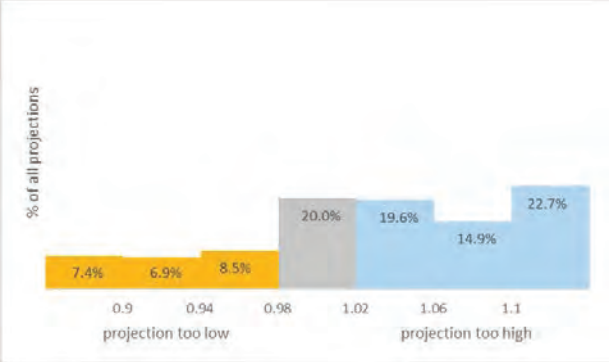
2C: Ward 3



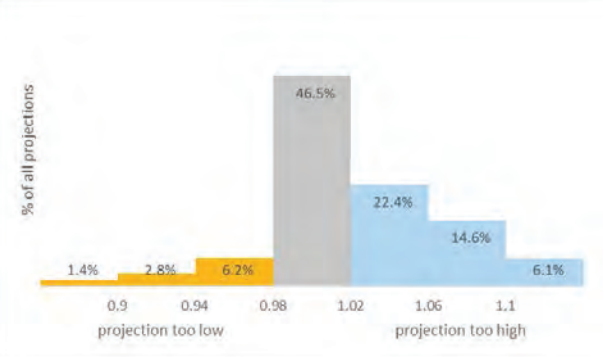
2D: Ward 4



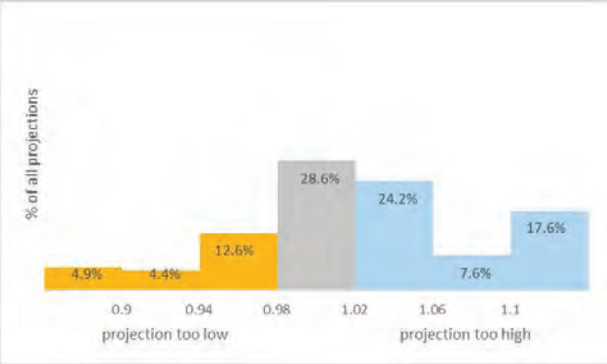
2E: Ward 5



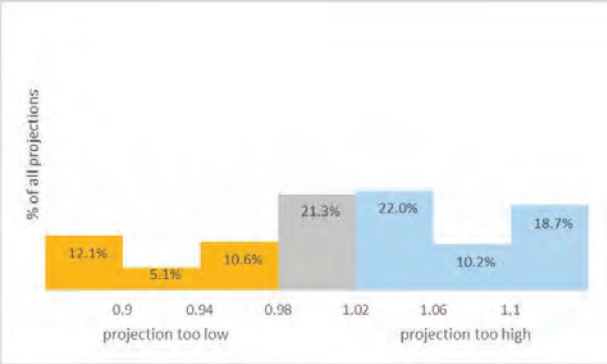
2F: Ward 6



2G: Ward 7



2H: Ward 8

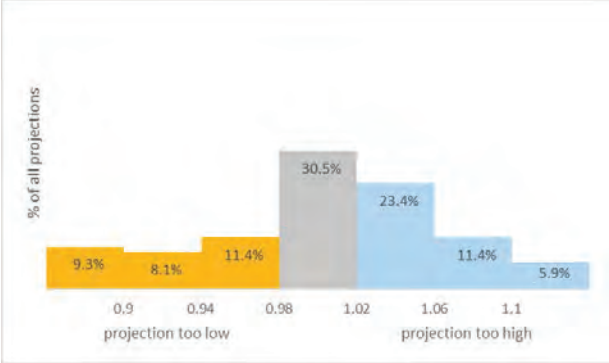


Projection to Enrollment Ratios by Year for DCPS

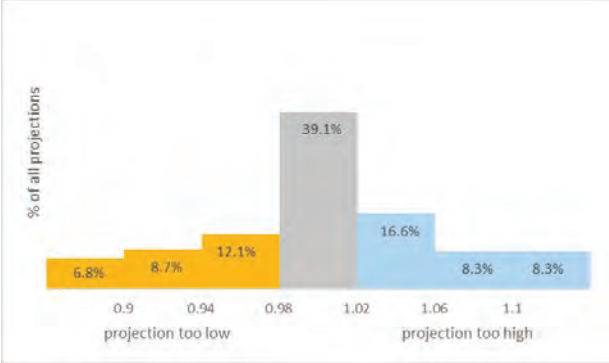
FIGURE 3A – 3E

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18, By Year

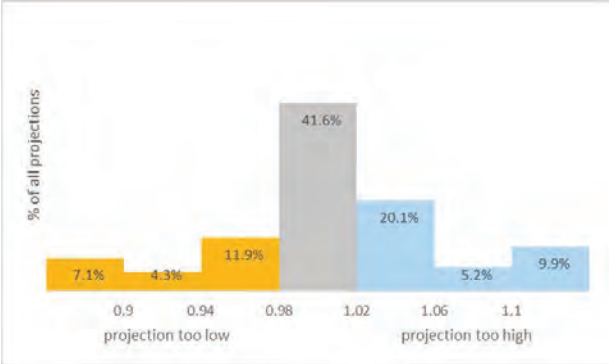
3A: SY 2013/14



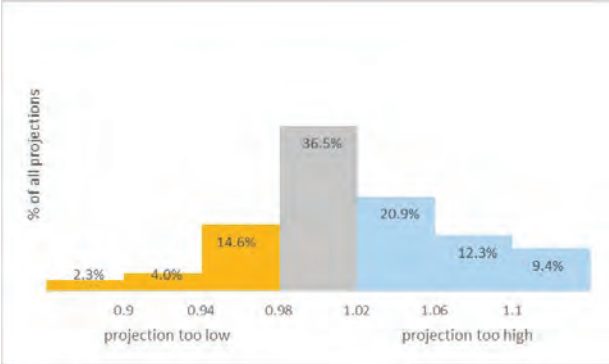
3B: SY 2014/15



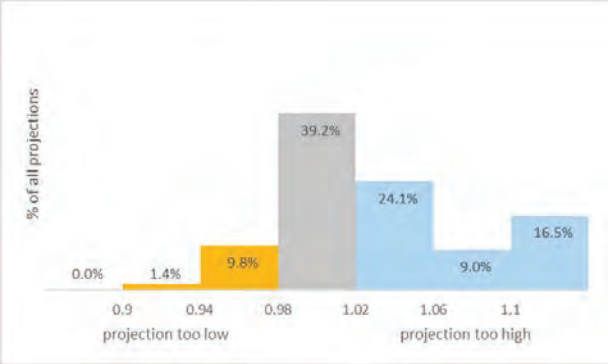
3C: SY 2015/16



3D: SY 2016/17



3E: SY 2017/18

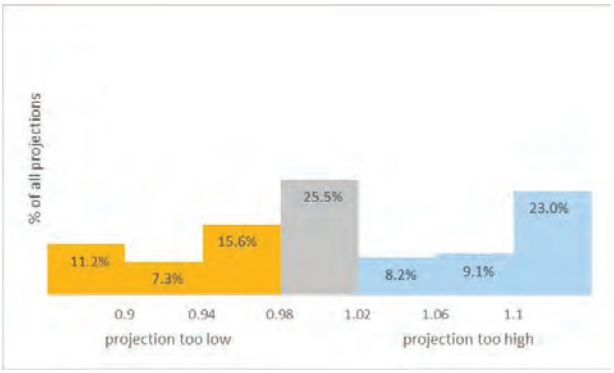

% of all projections
0.0%
1.4%
9.8%
39.2%
24.1%
9.0%
16.5%
0.9
0.94
0.98
1.02
1.06
1.1
projection too low
projection too high

Projection to Enrollment Ratios by Grade for DCPS

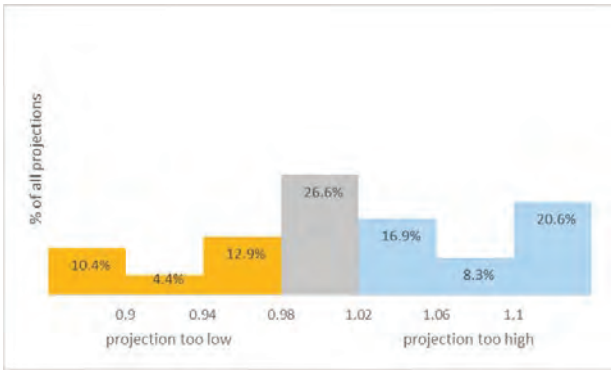
FIGURE 4A – 4O

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18, By Grade

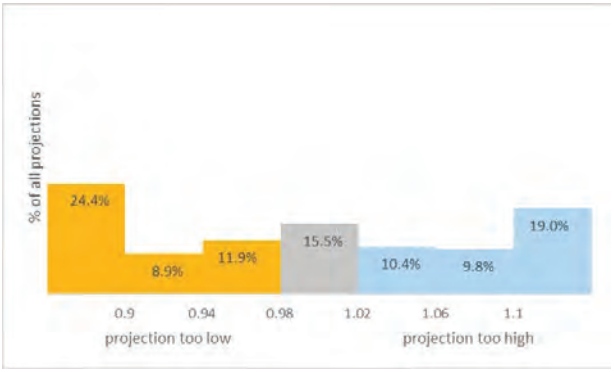
4A: Grade P3



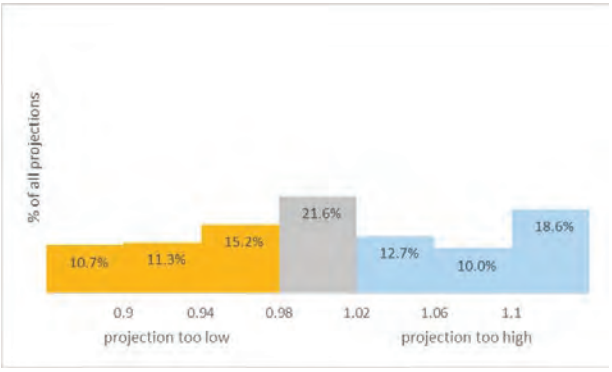
4B: Grade P4



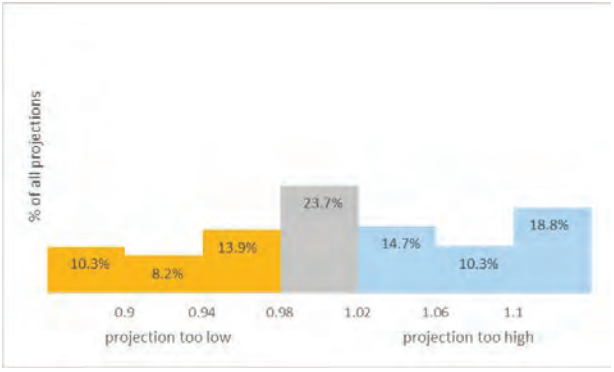
4C: Grade P5 (Kindergarten)



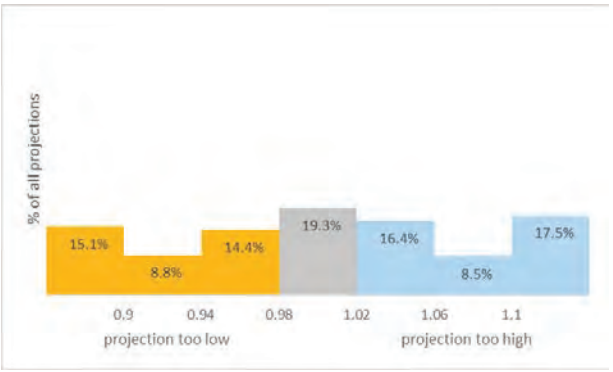
4D: Grade 1



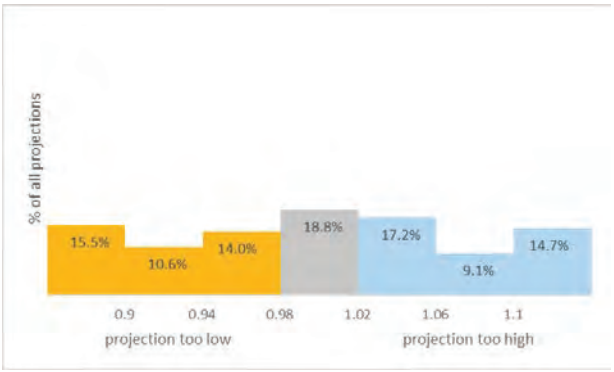
4E: Grade 2



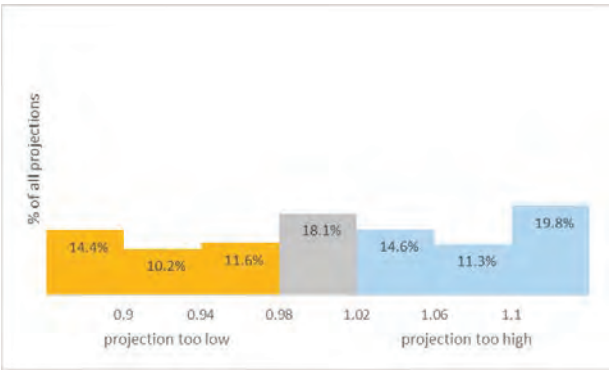
4F: Grade 3



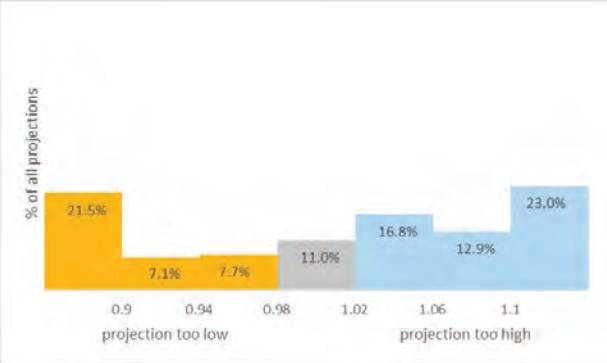
4G: Grade 4



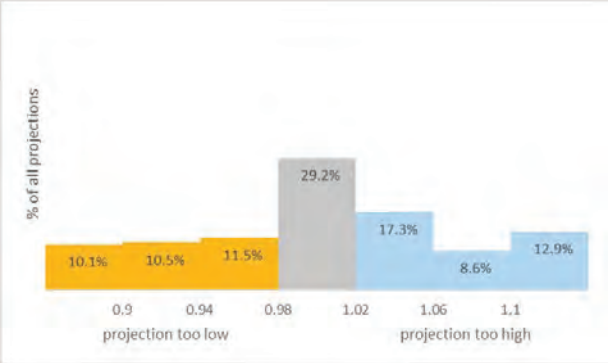
4H: Grade 5



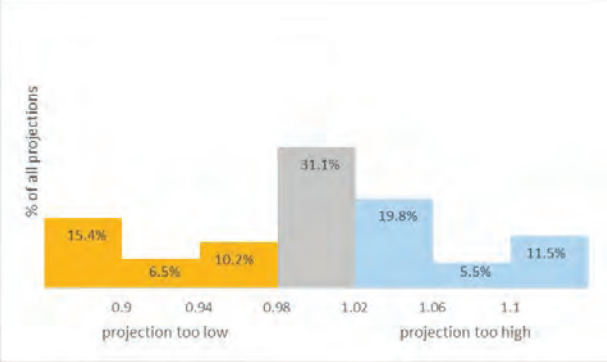
4I: Grade 6



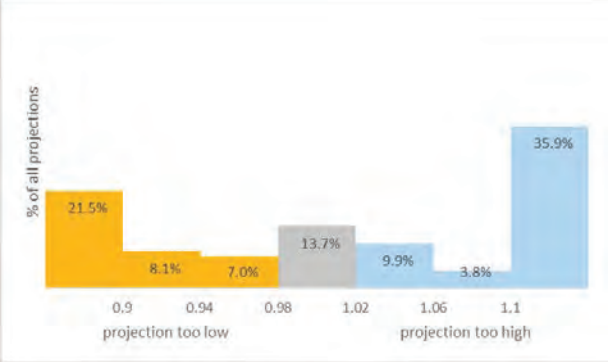
4J: Grade 7



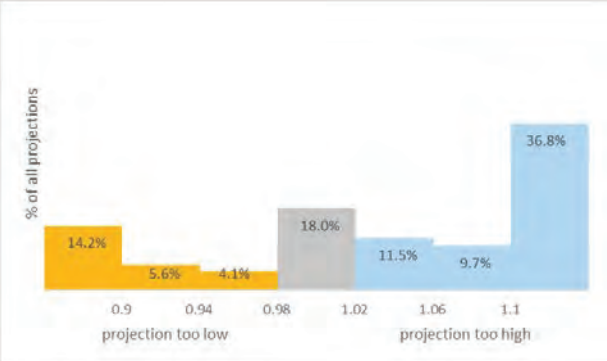
4K: Grade 8



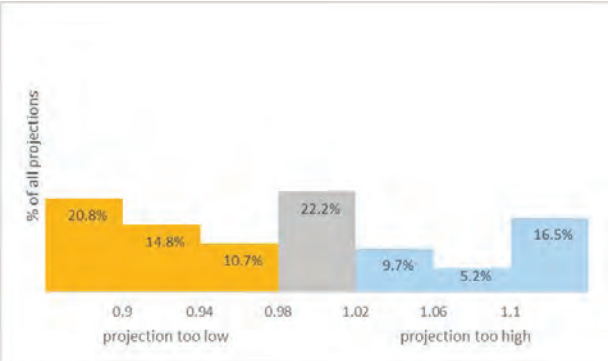
4L: Grade 9



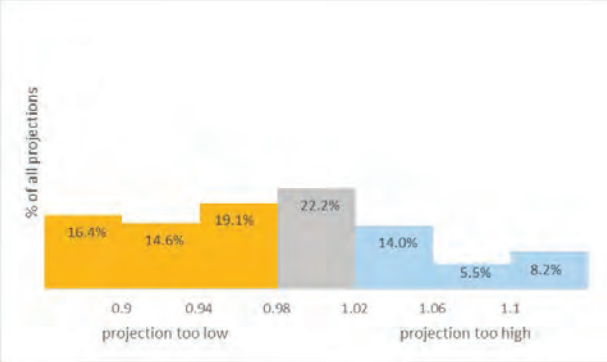
4M: Grade 10



4N: Grade 11



4"O": Grade 12

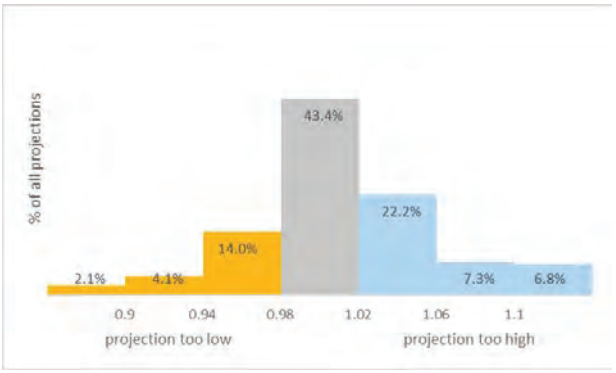


Projection to Enrollment Ratios by Grade Group for DCPS

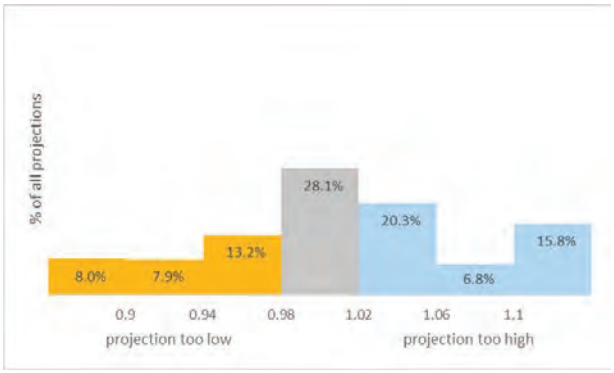
FIGURE 5A – 5D

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18, By Grade Group

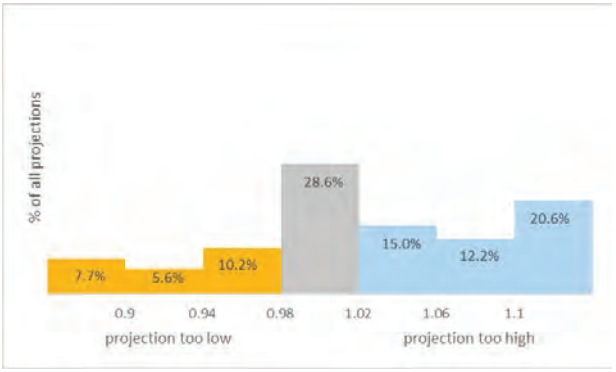
5A: Grade P3 – Grade 5



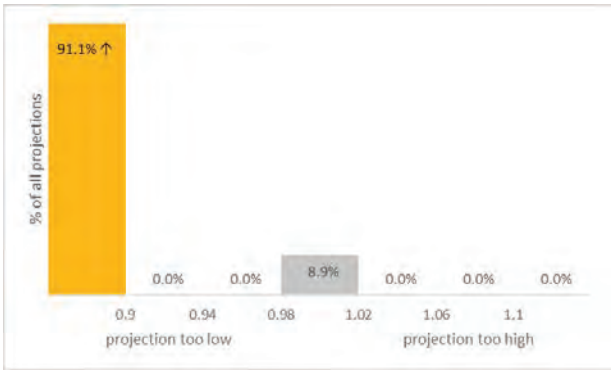
5B: Grade 6 – Grade 8



5C: Grade 9 – Grade 12



5D: Adult

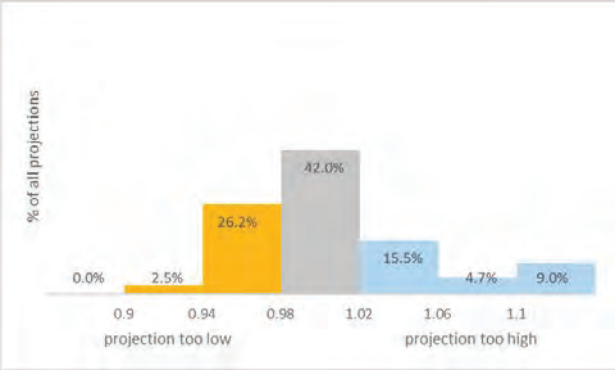


Projection to Enrollment Ratios by Ward for PCS

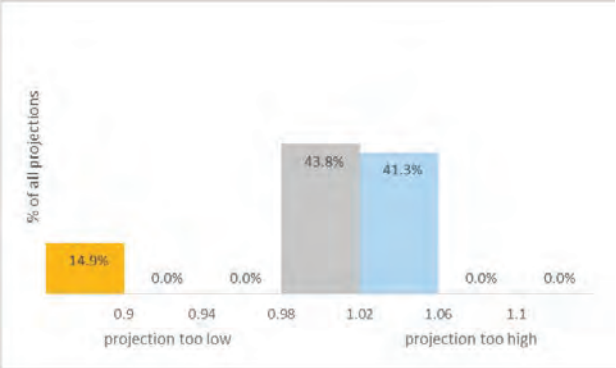
FIGURE 7A – 7H

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17 to 2017/18, By Ward

7A: Ward 1

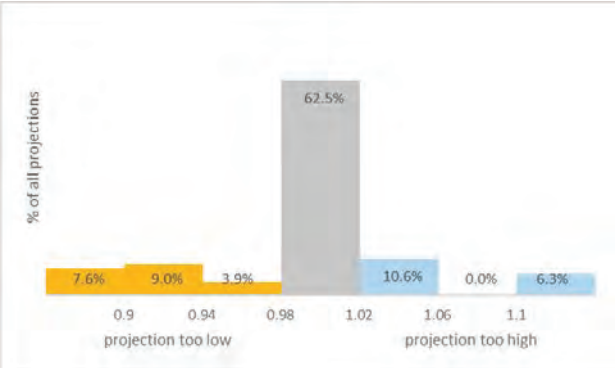


7B: Ward 2

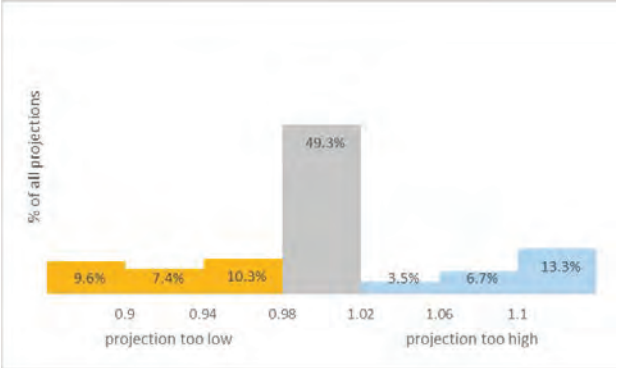


7C: Ward 3 (no schools)

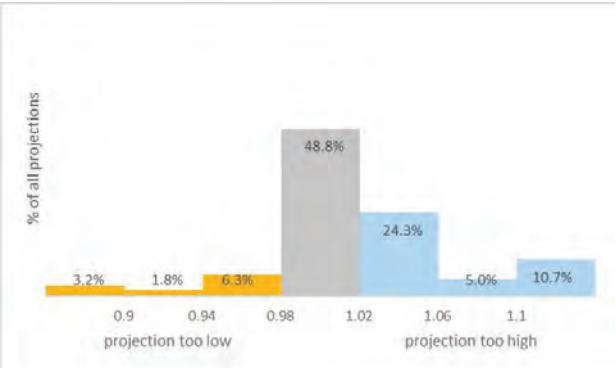
7D: Ward 4



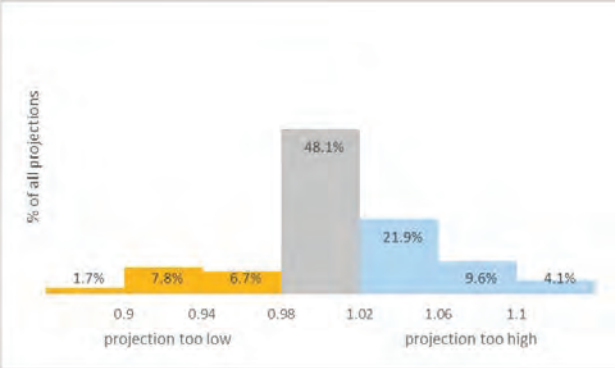
7E: Ward 5



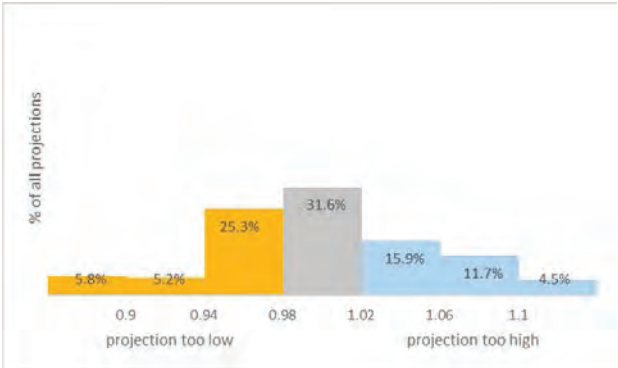
7F: Ward 6



7G: Ward 7



7H: Ward 8

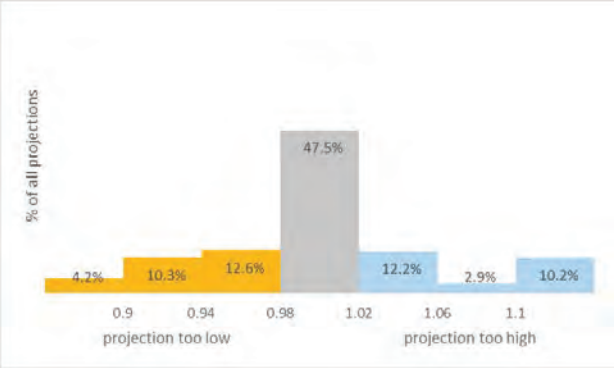


Projection to Enrollment Ratios by Grade Group for PCS

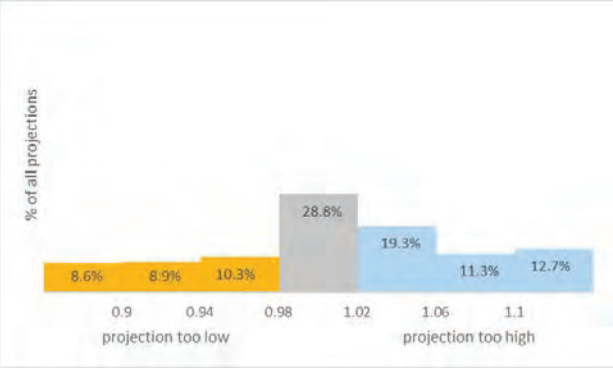
FIGURE 8A – 8D

Ratios of Projected to Audited Enrollments for PCS 2016/17 to 2017/18, By Grade Group

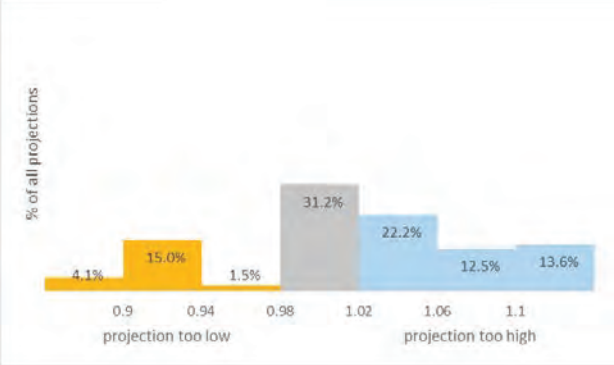
8A: Grade P3 – Grade 5



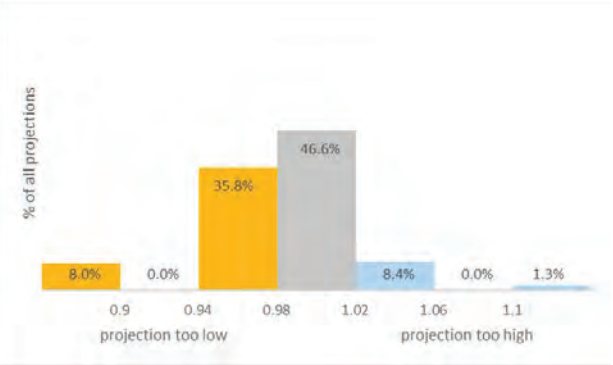
8B: Grade 6 – Grade 8



8C: Grade 9 – Grade 12



8D: Adult

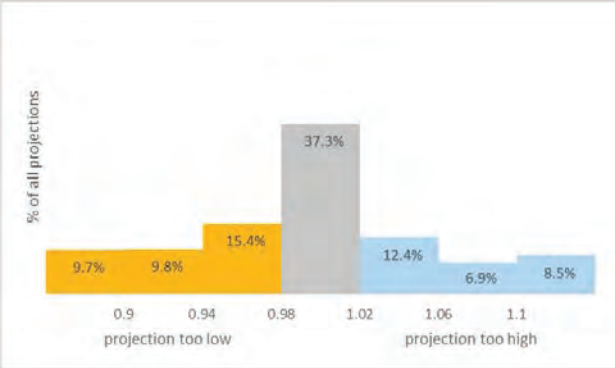


Projection to Enrollment Ratios by Year for PCS

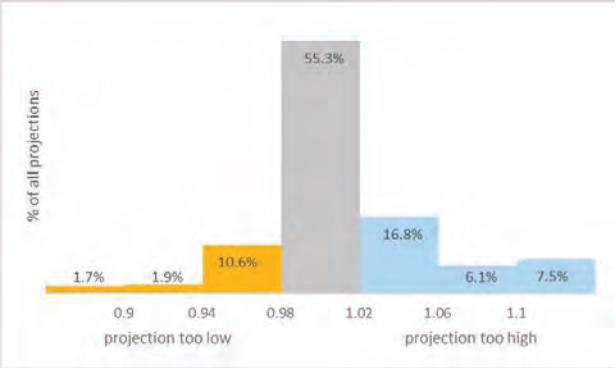
FIGURE 9A – 9B

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17 to 2017/18, By Year

9A: SY 2016/17



9B: SY 2017/18



Projection to Enrollment Ratios by Year, by School for DCPS

TABLE 4

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Aiton ES	202	7	2013	247	1.08
Aiton ES	202	7	2014	262	0.94
Aiton ES	202	7	2015	260	1.01
Aiton ES	202	7	2016	251	1.06
Aiton ES	202	7	2017	243	1.08
Amidon-Bowen ES	203	6	2013	342	0.89
Amidon-Bowen ES	203	6	2014	345	1.07
Amidon-Bowen ES	203	6	2015	356	1.02
Amidon-Bowen ES	203	6	2016	350	1.01
Amidon-Bowen ES	203	6	2017	351	0.99
Anacostia HS	450	8	2013	751	0.89
Anacostia HS	450	8	2014	661	1.14
Anacostia HS	450	8	2015	597	1.01
Anacostia HS	450	8	2016	449	1.27
Anacostia HS	450	8	2017	379	1.12
Ballou HS	452	8	2013	678	1.06
Ballou HS	452	8	2014	755	0.85
Ballou HS	452	8	2015	933	0.85
Ballou HS	452	8	2016	930	1.13
Ballou HS	452	8	2017	880	1.03
Ballou STAY	462	8	2013	578	0.84
Ballou STAY	462	8	2014	591	0.83
Ballou STAY	462	8	2015	477	1.01
Ballou STAY	462	8	2016	466	1.04
Ballou STAY	462	8	2017	495	0.98
Bancroft ES	204	1	2013	490	0.97
Bancroft ES	204	1	2014	508	1
Bancroft ES	204	1	2015	521	1
Bancroft ES	204	1	2016	530	0.99
Bancroft ES	204	1	2017	544	0.98
Barnard ES	205	4	2013	583	1.03
Barnard ES	205	4	2014	602	1
Barnard ES	205	4	2015	637	1
Barnard ES	205	4	2016	649	0.99
Barnard ES	205	4	2017	642	1.01

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Beers ES	206	7	2013	422	0.93
Beers ES	206	7	2014	438	1
Beers ES	206	7	2015	437	1
Beers ES	206	7	2016	464	0.94
Beers ES	206	7	2017	484	0.96
Benjamin Banneker HS	402	1	2013	430	1.06
Benjamin Banneker HS	402	1	2014	449	1
Benjamin Banneker HS	402	1	2015	454	1
Benjamin Banneker HS	402	1	2016	481	1.03
Benjamin Banneker HS	402	1	2017	482	1.01
Brent ES	212	6	2013	359	1.01
Brent ES	212	6	2014	368	0.99
Brent ES	212	6	2015	384	0.99
Brent ES	212	6	2016	404	1
Brent ES	212	6	2017	425	0.95
Brightwood EC	213	4	2013	615	1
Brightwood EC	213	4	2014	639	1
Brightwood EC	213	4	2015	709	0.95
Brightwood EC	213	4	2016	755	0.97
Brightwood EC	213	4	2017	737	1.06
Brookland EC at Bunker Hill	346	5	2013	249	1.02
Brookland EC at Bunker Hill	346	5	2014	225	1.03
Brookland EC at Bunker Hill	346	5	2015	0	0
Brookland EC at Bunker Hill	346	5	2016	0	0
Brookland EC at Bunker Hill	346	5	2017	0	0
Brookland MS	347	5	2013	0	0
Brookland MS	347	5	2014	0	0
Brookland MS	347	5	2015	315	0.72
Brookland MS	347	5	2016	254	1.22
Brookland MS	347	5	2017	238	1.03
Browne EC	404	5	2013	349	1.03
Browne EC	404	5	2014	353	0.99
Browne EC	404	5	2015	333	1
Browne EC	404	5	2016	309	1.07
Browne EC	404	5	2017	325	0.98

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Bruce Monroe ES at Park View	296	1	2013	465	0.97
Bruce Monroe ES at Park View	296	1	2014	465	1.01
Bruce Monroe ES at Park View	296	1	2015	470	1.01
Bruce Monroe ES at Park View	296	1	2016	473	1
Bruce Monroe ES at Park View	296	1	2017	473	1.01
Bunker Hill ES	219	5	2013	0	0
Bunker Hill ES	219	5	2014	0	0
Bunker Hill ES	219	5	2015	156	0.97
Bunker Hill ES	219	5	2016	195	0.93
Bunker Hill ES	219	5	2017	200	1
Burroughs EC	220	5	2013	278	1.03
Burroughs EC	220	5	2014	297	0.92
Burroughs EC	220	5	2015	285	0.88
Burroughs EC	220	5	2016	290	1
Burroughs EC	220	5	2017	282	1.11
Burrville ES	221	7	2013	354	1.02
Burrville ES	221	7	2014	360	0.96
Burrville ES	221	7	2015	326	1.15
Burrville ES	221	7	2016	325	1.01
Burrville ES	221	7	2017	300	1.16
Capitol Hill Montessori at Logan	360	6	2013	288	1.04
Capitol Hill Montessori at Logan	360	6	2014	310	1.06
Capitol Hill Montessori at Logan	360	6	2015	330	1.02
Capitol Hill Montessori at Logan	360	6	2016	361	1.03
Capitol Hill Montessori at Logan	360	6	2017	365	1
Cardozo EC	454	1	2013	681	1
Cardozo EC	454	1	2014	781	0.9
Cardozo EC	454	1	2015	783	1.02
Cardozo EC	454	1	2016	796	0.98
Cardozo EC	454	1	2017	788	1.11
CHOICE Academy at Emery	947	5	2013	9	0
CHOICE Academy at Emery	947	5	2014	5	5.4
CHOICE Academy at Emery	947	5	2015	2	4.5
CHOICE Academy at Emery	947	5	2016	5	0.6
CHOICE Academy at Emery	947	5	2017	1	5

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Cleveland ES	224	1	2013	303	1.03
Cleveland ES	224	1	2014	308	1
Cleveland ES	224	1	2015	319	1
Cleveland ES	224	1	2016	321	1.01
Cleveland ES	224	1	2017	317	1.03
Columbia Heights EC (CHEC)	442	1	2013	1266	1.04
Columbia Heights EC (CHEC)	442	1	2014	1384	0.92
Columbia Heights EC (CHEC)	442	1	2015	1393	1
Columbia Heights EC (CHEC)	442	1	2016	1336	1.06
Columbia Heights EC (CHEC)	442	1	2017	1240	1.12
Coolidge HS	455	4	2013	433	1.04
Coolidge HS	455	4	2014	395	1.01
Coolidge HS	455	4	2015	384	1
Coolidge HS	455	4	2016	346	1.11
Coolidge HS	455	4	2017	310	1.18
CW Harris ES	247	7	2013	269	1.12
CW Harris ES	247	7	2014	291	0.96
CW Harris ES	247	7	2015	293	1.05
CW Harris ES	247	7	2016	285	1.05
CW Harris ES	247	7	2017	278	1.02
Deal MS	405	3	2013	1248	1.02
Deal MS	405	3	2014	1312	1
Deal MS	405	3	2015	1341	1
Deal MS	405	3	2016	1476	0.94
Deal MS	405	3	2017	1475	1.03
Dorothy Height ES	349	4	2013	0	0
Dorothy Height ES	349	4	2014	0	0
Dorothy Height ES	349	4	2015	0	0
Dorothy Height ES	349	4	2016	518	1
Dorothy Height ES	349	4	2017	479	1.1
Drew ES	231	7	2013	168	0.92
Drew ES	231	7	2014	201	0.85
Drew ES	231	7	2015	247	0.9
Drew ES	231	7	2016	253	1.03
Drew ES	231	7	2017	272	1.02

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Duke Ellington School of the Arts	471	2	2013	541	0.98
Duke Ellington School of the Arts	471	2	2014	523	0.99
Duke Ellington School of the Arts	471	2	2015	525	1
Duke Ellington School of the Arts	471	2	2016	502	1.06
Duke Ellington School of the Arts	471	2	2017	566	0.99
Dunbar HS	467	5	2013	628	0.93
Dunbar HS	467	5	2014	653	0.95
Dunbar HS	467	5	2015	653	1.02
Dunbar HS	467	5	2016	584	1.13
Dunbar HS	467	5	2017	617	1
Eastern HS	457	6	2013	783	1.08
Eastern HS	457	6	2014	1025	0.98
Eastern HS	457	6	2015	967	1.08
Eastern HS	457	6	2016	818	1.21
Eastern HS	457	6	2017	769	1.07
Eaton ES	232	3	2013	470	1.01
Eaton ES	232	3	2014	475	1
Eaton ES	232	3	2015	478	1
Eaton ES	232	3	2016	477	1
Eaton ES	232	3	2017	476	1
Eliot-Hine MS	407	6	2013	292	0.93
Eliot-Hine MS	407	6	2014	257	1.07
Eliot-Hine MS	407	6	2015	209	1.14
Eliot-Hine MS	407	6	2016	200	0.94
Eliot-Hine MS	407	6	2017	203	1.04
Garfield ES	238	8	2013	266	0.95
Garfield ES	238	8	2014	284	0.98
Garfield ES	238	8	2015	317	0.94
Garfield ES	238	8	2016	301	1.03
Garfield ES	238	8	2017	301	0.99
Garrison ES	239	2	2013	280	0.92
Garrison ES	239	2	2014	244	1.18
Garrison ES	239	2	2015	244	1.06
Garrison ES	239	2	2016	253	0.95
Garrison ES	239	2	2017	250	1

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Hardy MS	246	2	2013	371	1.09
Hardy MS	246	2	2014	386	1.03
Hardy MS	246	2	2015	374	1.01
Hardy MS	246	2	2016	374	1.07
Hardy MS	246	2	2017	392	0.98
Hart MS	413	8	2013	561	0.95
Hart MS	413	8	2014	479	1.19
Hart MS	413	8	2015	381	1.13
Hart MS	413	8	2016	349	0.98
Hart MS	413	8	2017	337	0.99
HD Cooke ES	227	1	2013	396	1.01
HD Cooke ES	227	1	2014	400	1.03
HD Cooke ES	227	1	2015	397	1
HD Cooke ES	227	1	2016	420	0.96
HD Cooke ES	227	1	2017	404	1.08
HD Woodson HS	464	7	2013	762	0.99
HD Woodson HS	464	7	2014	639	1.13
HD Woodson HS	464	7	2015	660	0.88
HD Woodson HS	464	7	2016	634	1
HD Woodson HS	464	7	2017	488	1.24
Hearst ES	258	3	2013	287	1
Hearst ES	258	3	2014	291	1
Hearst ES	258	3	2015	316	0.95
Hearst ES	258	3	2016	312	1.01
Hearst ES	258	3	2017	312	1.01
Hendley ES	249	8	2013	521	1
Hendley ES	249	8	2014	503	1.05
Hendley ES	249	8	2015	463	1.1
Hendley ES	249	8	2016	445	1.07
Hendley ES	249	8	2017	379	1.16
Houston ES	251	7	2013	274	1.05
Houston ES	251	7	2014	279	1.01
Houston ES	251	7	2015	275	1.05
Houston ES	251	7	2016	299	0.94
Houston ES	251	7	2017	269	1.08

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Hyde-Addison ES	252	2	2013	334	1.02
Hyde-Addison ES	252	2	2014	305	1.11
Hyde-Addison ES	252	2	2015	316	1.01
Hyde-Addison ES	252	2	2016	329	1.02
Hyde-Addison ES	252	2	2017	320	1.04
Incarc. Youth Prog., Correctional Detention Facility	480	7	2013	26	1.5
Incarc. Youth Prog., Correctional Detention Facility	480	7	2014	28	0.86
Incarc. Youth Prog., Correctional Detention Facility	480	7	2015	34	0.71
Incarc. Youth Prog., Correctional Detention Facility	480	7	2016	48	0.59
Incarc. Youth Prog., Correctional Detention Facility	480	7	2017	40	0.95
Janney ES	254	3	2013	627	1.02
Janney ES	254	3	2014	693	0.97
Janney ES	254	3	2015	731	1
Janney ES	254	3	2016	722	1.01
Janney ES	254	3	2017	737	0.99
Jefferson Middle School Academy	433	6	2013	299	1.03
Jefferson Middle School Academy	433	6	2014	277	1.1
Jefferson Middle School Academy	433	6	2015	273	1.03
Jefferson Middle School Academy	433	6	2016	305	0.91
Jefferson Middle School Academy	433	6	2017	314	0.99
JO Wilson ES	339	6	2013	433	1
JO Wilson ES	339	6	2014	466	1
JO Wilson ES	339	6	2015	505	0.98
JO Wilson ES	339	6	2016	495	1.04
JO Wilson ES	339	6	2017	509	1
Johnson MS	416	8	2013	271	1.08
Johnson MS	416	8	2014	291	0.98
Johnson MS	416	8	2015	291	1.02
Johnson MS	416	8	2016	252	1.11
Johnson MS	416	8	2017	255	0.96
Kelly Miller MS	421	7	2013	513	0.95
Kelly Miller MS	421	7	2014	546	1.04
Kelly Miller MS	421	7	2015	450	1.25
Kelly Miller MS	421	7	2016	449	0.98
Kelly Miller MS	421	7	2017	387	1.11

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Ketcham ES	257	8	2013	306	0.88
Ketcham ES	257	8	2014	309	1.02
Ketcham ES	257	8	2015	313	1.02
Ketcham ES	257	8	2016	309	1.02
Ketcham ES	257	8	2017	310	0.98
Key ES	272	3	2013	381	1.01
Key ES	272	3	2014	383	1.02
Key ES	272	3	2015	386	1.02
Key ES	272	3	2016	397	1.02
Key ES	272	3	2017	417	0.97
Kimball ES	259	7	2013	330	0.99
Kimball ES	259	7	2014	348	1
Kimball ES	259	7	2015	356	0.99
Kimball ES	259	7	2016	372	0.96
Kimball ES	259	7	2017	325	1.18
King ES	344	8	2013	410	1.12
King ES	344	8	2014	372	1.1
King ES	344	8	2015	394	0.99
King ES	344	8	2016	374	1.09
King ES	344	8	2017	346	1.12
Kramer MS	417	8	2013	368	0.85
Kramer MS	417	8	2014	333	1.11
Kramer MS	417	8	2015	247	1.28
Kramer MS	417	8	2016	193	1.26
Kramer MS	417	8	2017	194	1.06
Lafayette ES	261	4	2013	689	1
Lafayette ES	261	4	2014	697	1
Lafayette ES	261	4	2015	700	0.99
Lafayette ES	261	4	2016	761	0.94
Lafayette ES	261	4	2017	816	0.98
Langdon EC	262	5	2013	349	1.27
Langdon EC	262	5	2014	340	1
Langdon EC	262	5	2015	300	0.87
Langdon EC	262	5	2016	323	0.97
Langdon EC	262	5	2017	324	1.03

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Langley ES	370	5	2013	280	1
Langley ES	370	5	2014	289	1
Langley ES	370	5	2015	278	1.11
Langley ES	370	5	2016	284	1.04
Langley ES	370	5	2017	275	1.03
LaSalle Backus EC	264	4	2013	342	0.87
LaSalle Backus EC	264	4	2014	349	1.02
LaSalle Backus EC	264	4	2015	341	1.03
LaSalle Backus EC	264	4	2016	369	0.95
LaSalle Backus EC	264	4	2017	363	1.02
Leckie ES	266	8	2013	374	0.99
Leckie ES	266	8	2014	478	0.85
Leckie ES	266	8	2015	519	0.92
Leckie ES	266	8	2016	552	0.98
Leckie ES	266	8	2017	558	1.07
Ludlow-Taylor ES	271	6	2013	299	0.98
Ludlow-Taylor ES	271	6	2014	340	0.99
Ludlow-Taylor ES	271	6	2015	370	0.95
Ludlow-Taylor ES	271	6	2016	373	1.08
Ludlow-Taylor ES	271	6	2017	414	0.95
Luke C Moore HS	884	5	2013	364	1.08
Luke C Moore HS	884	5	2014	350	1.09
Luke C Moore HS	884	5	2015	297	1.21
Luke C Moore HS	884	5	2016	266	1.28
Luke C Moore HS	884	5	2017	251	1.21
MacFarland MS	420	4	2013	0	0
MacFarland MS	420	4	2014	0	0
MacFarland MS	420	4	2015	0	0
MacFarland MS	420	4	2016	69	1.04
MacFarland MS	420	4	2017	132	1.07
Malcolm X ES at Green	308	8	2013	225	0.96
Malcolm X ES at Green	308	8	2014	244	0.9
Malcolm X ES at Green	308	8	2015	238	0.97
Malcolm X ES at Green	308	8	2016	237	1.05
Malcolm X ES at Green	308	8	2017	256	1.01

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Mamie D Lee School	265	5	2013	62	1.08
Mamie D Lee School	265	5	2014	56	1.1
Mamie D Lee School	265	5	2015	0	0
Mamie D Lee School	265	5	2016	0	0
Mamie D Lee School	265	5	2017	0	0
Mann ES	273	3	2013	287	1.05
Mann ES	273	3	2014	302	1
Mann ES	273	3	2015	360	0.94
Mann ES	273	3	2016	379	1
Mann ES	273	3	2017	400	1
Marie Reed ES	284	1	2013	377	1
Marie Reed ES	284	1	2014	393	1
Marie Reed ES	284	1	2015	399	0.99
Marie Reed ES	284	1	2016	398	1.01
Marie Reed ES	284	1	2017	427	0.93
Maury ES	274	6	2013	339	0.98
Maury ES	274	6	2014	366	0.99
Maury ES	274	6	2015	383	0.99
Maury ES	274	6	2016	387	1.03
Maury ES	274	6	2017	407	0.99
McKinley Middle School	435	5	2013	193	1.02
McKinley Middle School	435	5	2014	202	1.03
McKinley Middle School	435	5	2015	226	1.1
McKinley Middle School	435	5	2016	213	0.99
McKinley Middle School	435	5	2017	241	0.92
McKinley Technology HS	458	5	2013	674	1.11
McKinley Technology HS	458	5	2014	645	1.08
McKinley Technology HS	458	5	2015	656	0.99
McKinley Technology HS	458	5	2016	619	1.08
McKinley Technology HS	458	5	2017	620	1.03
Miner ES	280	6	2013	426	1.11
Miner ES	280	6	2014	398	1.02
Miner ES	280	6	2015	398	1.01
Miner ES	280	6	2016	384	1.03
Miner ES	280	6	2017	345	1.1

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Moten ES	285	8	2013	362	0.93
Moten ES	285	8	2014	395	1.01
Moten ES	285	8	2015	423	1
Moten ES	285	8	2016	405	1.04
Moten ES	285	8	2017	401	1.04
Murch ES	287	3	2013	626	0.97
Murch ES	287	3	2014	620	1.09
Murch ES	287	3	2015	625	1.01
Murch ES	287	3	2016	572	1.04
Murch ES	287	3	2017	573	1
Nalle ES	288	7	2013	369	0.89
Nalle ES	288	7	2014	384	0.99
Nalle ES	288	7	2015	391	1
Nalle ES	288	7	2016	391	1
Nalle ES	288	7	2017	387	1.04
Noyes EC	290	5	2013	305	0.87
Noyes EC	290	5	2014	289	1.06
Noyes EC	290	5	2015	192	1.11
Noyes EC	290	5	2016	197	1
Noyes EC	290	5	2017	195	0.96
Orr ES	291	8	2013	355	1.07
Orr ES	291	8	2014	384	0.97
Orr ES	291	8	2015	421	0.95
Orr ES	291	8	2016	408	1.06
Orr ES	291	8	2017	404	1.04
Oyster-Adams Bilingual School	292	3	2013	661	1.01
Oyster-Adams Bilingual School	292	3	2014	650	1.01
Oyster-Adams Bilingual School	292	3	2015	663	0.97
Oyster-Adams Bilingual School	292	3	2016	674	1.01
Oyster-Adams Bilingual School	292	3	2017	677	1
Patterson ES	294	8	2013	356	0.94
Patterson ES	294	8	2014	380	0.99
Patterson ES	294	8	2015	404	1
Patterson ES	294	8	2016	394	1.04
Patterson ES	294	8	2017	374	1.04

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Payne ES	295	6	2013	258	1.01
Payne ES	295	6	2014	277	1
Payne ES	295	6	2015	308	0.94
Payne ES	295	6	2016	300	0.99
Payne ES	295	6	2017	315	1
Peabody ES	301	6	2013	228	1
Peabody ES	301	6	2014	227	1
Peabody ES	301	6	2015	227	1.01
Peabody ES	301	6	2016	230	1
Peabody ES	301	6	2017	227	1
Phelps Architecture Construction and Engineering HS	478	5	2013	319	1.28
Phelps Architecture Construction and Engineering HS	478	5	2014	323	1.09
Phelps Architecture Construction and Engineering HS	478	5	2015	306	1.17
Phelps Architecture Construction and Engineering HS	478	5	2016	328	0.86
Phelps Architecture Construction and Engineering HS	478	5	2017	260	1.2
Plummer ES	299	7	2013	416	0.98
Plummer ES	299	7	2014	428	1.01
Plummer ES	299	7	2015	409	1.14
Plummer ES	299	7	2016	391	1.04
Plummer ES	299	7	2017	375	1.04
Powell ES	300	4	2013	406	1.05
Powell ES	300	4	2014	446	0.98
Powell ES	300	4	2015	512	0.97
Powell ES	300	4	2016	534	0.99
Powell ES	300	4	2017	548	0.98
Randle Highlands ES	316	7	2013	335	1.08
Randle Highlands ES	316	7	2014	360	0.92
Randle Highlands ES	316	7	2015	339	1.07
Randle Highlands ES	316	7	2016	333	1.03
Randle Highlands ES	316	7	2017	325	1.05
Raymond EC	302	4	2013	543	1
Raymond EC	302	4	2014	581	0.96
Raymond EC	302	4	2015	572	1.02
Raymond EC	302	4	2016	613	0.95
Raymond EC	302	4	2017	589	1.06

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
River Terrace ES	304	7	2013	0	0
River Terrace ES	304	7	2014	0	0
River Terrace ES	304	7	2015	125	0.87
River Terrace ES	304	7	2016	131	1
River Terrace ES	304	7	2017	137	1.04
Ron Brown College Preparatory High School	436	7	2013	0	0
Ron Brown College Preparatory High School	436	7	2014	0	0
Ron Brown College Preparatory High School	436	7	2015	0	0
Ron Brown College Preparatory High School	436	7	2016	105	1.42
Ron Brown College Preparatory High School	436	7	2017	209	1.05
Ron Brown MS	425	7	2013	0	0
Ron Brown MS	425	7	2014	0	0
Ron Brown MS	425	7	2015	0	0
Ron Brown MS	425	7	2016	0	0
Ron Brown MS	425	7	2017	0	0
Roosevelt HS at MacFarland	459	4	2013	438	1.01
Roosevelt HS at MacFarland	459	4	2014	476	0.91
Roosevelt HS at MacFarland	459	4	2015	482	1.06
Roosevelt HS at MacFarland	459	4	2016	667	0.9
Roosevelt HS at MacFarland	459	4	2017	698	0.98
Roosevelt STAY at MacFarland	456	4	2013	850	0.78
Roosevelt STAY at MacFarland	456	4	2014	802	0.82
Roosevelt STAY at MacFarland	456	4	2015	776	0.85
Roosevelt STAY at MacFarland	456	4	2016	613	0.78
Roosevelt STAY at MacFarland	456	4	2017	515	1
Ross ES	305	2	2013	161	1
Ross ES	305	2	2014	166	1.01
Ross ES	305	2	2015	167	1.01
Ross ES	305	2	2016	171	1.01
Ross ES	305	2	2017	174	1
Savoy ES	307	8	2013	408	1
Savoy ES	307	8	2014	408	1.02
Savoy ES	307	8	2015	349	1.16
Savoy ES	307	8	2016	315	1.09
Savoy ES	307	8	2017	267	1.2

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
School Within School at Goding	175	6	2013	205	0.97
School Within School at Goding	175	6	2014	248	0.98
School Within School at Goding	175	6	2015	289	1
School Within School at Goding	175	6	2016	307	1.02
School Within School at Goding	175	6	2017	308	1
School Without Walls at Francis Stevens	409	2	2013	284	1.34
School Without Walls at Francis Stevens	409	2	2014	414	0.79
School Without Walls at Francis Stevens	409	2	2015	441	1
School Without Walls at Francis Stevens	409	2	2016	471	0.97
School Without Walls at Francis Stevens	409	2	2017	473	1.02
School Without Walls HS	466	2	2013	585	0.98
School Without Walls HS	466	2	2014	590	0.98
School Without Walls HS	466	2	2015	589	0.98
School Without Walls HS	466	2	2016	584	1
School Without Walls HS	466	2	2017	592	0.99
Seaton ES	309	6	2013	253	1
Seaton ES	309	6	2014	295	0.95
Seaton ES	309	6	2015	311	1.04
Seaton ES	309	6	2016	341	1
Seaton ES	309	6	2017	371	1
Sharpe Health School	312	4	2013	67	1.05
Sharpe Health School	312	4	2014	60	1.11
Sharpe Health School	312	4	2015	0	0
Sharpe Health School	312	4	2016	0	0
Sharpe Health School	312	4	2017	0	0
Shepherd ES	313	4	2013	304	1.03
Shepherd ES	313	4	2014	318	1
Shepherd ES	313	4	2015	330	0.99
Shepherd ES	313	4	2016	360	0.99
Shepherd ES	313	4	2017	364	1.01
Simon ES	315	8	2013	296	0.94
Simon ES	315	8	2014	293	1.05
Simon ES	315	8	2015	301	1.01
Simon ES	315	8	2016	276	1.05
Simon ES	315	8	2017	274	0.97

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Smothers ES	322	7	2013	290	1.05
Smothers ES	322	7	2014	275	1.1
Smothers ES	322	7	2015	274	1.04
Smothers ES	322	7	2016	253	1.1
Smothers ES	322	7	2017	252	1.02
Sousa MS	427	7	2013	295	1
Sousa MS	427	7	2014	284	1
Sousa MS	427	7	2015	255	1.01
Sousa MS	427	7	2016	255	1
Sousa MS	427	7	2017	228	1.14
Stanton ES	319	8	2013	585	0.97
Stanton ES	319	8	2014	578	1.05
Stanton ES	319	8	2015	526	1.02
Stanton ES	319	8	2016	520	0.99
Stanton ES	319	8	2017	493	1.03
Stoddert ES	321	3	2013	381	1.07
Stoddert ES	321	3	2014	418	1.02
Stoddert ES	321	3	2015	432	0.98
Stoddert ES	321	3	2016	435	1
Stoddert ES	321	3	2017	438	0.97
Stuart-Hobson MS	428	6	2013	417	0.9
Stuart-Hobson MS	428	6	2014	423	1
Stuart-Hobson MS	428	6	2015	424	1
Stuart-Hobson MS	428	6	2016	431	0.99
Stuart-Hobson MS	428	6	2017	422	1.02
Takoma EC	324	4	2013	442	0.91
Takoma EC	324	4	2014	442	1.03
Takoma EC	324	4	2015	468	1.02
Takoma EC	324	4	2016	468	1
Takoma EC	324	4	2017	473	0.99
Thomas ES	325	7	2013	414	0.97
Thomas ES	325	7	2014	408	1.06
Thomas ES	325	7	2015	411	1.03
Thomas ES	325	7	2016	409	1.03
Thomas ES	325	7	2017	384	1.11

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Thomson ES	326	2	2013	289	0.96
Thomson ES	326	2	2014	272	1.02
Thomson ES	326	2	2015	287	0.96
Thomson ES	326	2	2016	313	0.95
Thomson ES	326	2	2017	308	0.99
Truesdell EC	327	4	2013	480	1.06
Truesdell EC	327	4	2014	526	0.93
Truesdell EC	327	4	2015	588	0.97
Truesdell EC	327	4	2016	679	0.93
Truesdell EC	327	4	2017	698	1.03
Tubman ES	328	1	2013	509	1.01
Tubman ES	328	1	2014	498	1.05
Tubman ES	328	1	2015	545	0.92
Tubman ES	328	1	2016	542	1.03
Tubman ES	328	1	2017	535	0.98
Turner ES	329	8	2013	403	0.92
Turner ES	329	8	2014	392	1.08
Turner ES	329	8	2015	460	0.92
Turner ES	329	8	2016	484	1.03
Turner ES	329	8	2017	463	1.11
Tyler ES	330	6	2013	507	1.06
Tyler ES	330	6	2014	522	1.05
Tyler ES	330	6	2015	520	1.03
Tyler ES	330	6	2016	514	1.03
Tyler ES	330	6	2017	525	1
Van Ness ES	331	6	2013	0	0
Van Ness ES	331	6	2014	0	0
Van Ness ES	331	6	2015	86	1.27
Van Ness ES	331	6	2016	171	0.84
Van Ness ES	331	6	2017	215	1.02
Walker-Jones EC	332	6	2013	454	0.98
Walker-Jones EC	332	6	2014	465	1
Walker-Jones EC	332	6	2015	449	1.07
Walker-Jones EC	332	6	2016	451	1.04
Walker-Jones EC	332	6	2017	435	1.09

TABLE 4 (CONTINUED)

Ratios of Projected to Audited Enrollments for DCPS Schools 2013/14 to 2017/18: By School and Year

NamePerSLIMS	S_ID	Ward	Year	Audited Enrollment	Projection / Enrollment Ratio
Washington Metropolitan HS (formerly YEA)	474	1	2013	280	1.02
Washington Metropolitan HS (formerly YEA)	474	1	2014	244	1.24
Washington Metropolitan HS (formerly YEA)	474	1	2015	150	1.67
Washington Metropolitan HS (formerly YEA)	474	1	2016	125	1.56
Washington Metropolitan HS (formerly YEA)	474	1	2017	195	1.02
Watkins ES	333	6	2013	545	0.98
Watkins ES	333	6	2014	500	1.04
Watkins ES	333	6	2015	463	1.04
Watkins ES	333	6	2016	436	1
Watkins ES	333	6	2017	428	1
West EC	336	4	2013	258	0.99
West EC	336	4	2014	267	1.02
West EC	336	4	2015	303	0.92
West EC	336	4	2016	315	1
West EC	336	4	2017	330	1.04
Wheatley EC	335	5	2013	442	1.05
Wheatley EC	335	5	2014	463	0.94
Wheatley EC	335	5	2015	359	1.27
Wheatley EC	335	5	2016	321	1.07
Wheatley EC	335	5	2017	324	1.01
Whittier EC	338	4	2013	362	0.91
Whittier EC	338	4	2014	350	1
Whittier EC	338	4	2015	365	0.96
Whittier EC	338	4	2016	341	1.07
Whittier EC	338	4	2017	325	1.02
Wilson HS	463	3	2013	1696	1.05
Wilson HS	463	3	2014	1788	0.95
Wilson HS	463	3	2015	1791	1.04
Wilson HS	463	3	2016	1749	1.01
Wilson HS	463	3	2017	1829	0.96
Youth Services Center	861	5	2013	89	0.88
Youth Services Center	861	5	2014	76	0.93
Youth Services Center	861	5	2015	77	0.95
Youth Services Center	861	5	2016	88	0.93
Youth Services Center	861	5	2017	52	1.75

Projection to Enrollment Ratios by Year, by School for PCS

TABLE 5

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
Academy of Hope Adult PCS	233	5,8	375	1.00
Achievement Preparatory Academy PCS - Wahler Place Elementary School	217	8	464	1.10
Achievement Preparatory Academy PCS - Wahler Place Middle School	1100	8	468	1.15
AppleTree Early Learning Center PCS - Columbia Heights	140	1	160	1.02
AppleTree Early Learning Center PCS - Lincoln Park	3073	6	60	1.00
AppleTree Early Learning Center PCS - Oklahoma Avenue	1137	7	134	0.85
AppleTree Early Learning Center PCS - Southeast	3072	8	169	0.99
AppleTree Early Learning Center PCS - Southwest	141	6	108	1.00
BASIS DC PCS	3068	2	597	1.00
Breakthrough Montessori PCS	289	4	81	1.01
Bridges PCS	142	5	328	0.90
Briya PCS	126	1,4,5	644	1.17
Capital City PCS - High School	1207	4	333	1.00
Capital City PCS - Lower School	184	4	325	1.00
Capital City PCS - Middle School	182	4	325	1.00
Carlos Rosario International PCS	1119	1,5	2064	1.05
Cedar Tree Academy PCS	188	8	385	1.04
Center City PCS - Brightwood	1103	4	276	1.04
Center City PCS - Capitol Hill	1104	6	238	0.95
Center City PCS - Congress Heights	1105	8	253	0.95
Center City PCS - Petworth	1106	4	257	0.97
Center City PCS - Shaw	1107	6	234	0.96
Center City PCS - Trinidad	1108	5	184	0.90
Cesar Chavez PCS for Public Policy - Capitol Hill	153	6	332	0.79
Cesar Chavez PCS for Public Policy - Chavez Prep	127	1	306	0.84
Cesar Chavez PCS for Public Policy - Parkside High School	109	7	359	0.94
Cesar Chavez PCS for Public Policy - Parkside Middle School	102	7	278	0.91
City Arts & Prep PCS	210	5	522	1.13
Community College Preparatory Academy PCS	216	6,8	476	1.06
Creative Minds International PCS	3069	5	341	1.09
DC Bilingual PCS	199	5	410	1.01
DC Prep PCS - Anacostia Elementary School	276	8	203	0.99
DC Prep PCS - Benning Elementary School	1110	7	449	1.00
DC Prep PCS - Benning Middle School	218	7	281	1.01
DC Prep PCS - Edgewood Elementary School	130	5	447	1.00

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
DC Prep PCS - Edgewood Middle School	196	5	330	1.03
DC Scholars PCS	3070	7	505	1.00
Democracy Prep Congress Heights PCS	234	8	656	1.03
District of Columbia International School	248	1	520	0.94
E.L. Haynes PCS - Elementary School	1206	4	345	1.02
E.L. Haynes PCS - High School	1138	4	450	1.00
E.L. Haynes PCS - Middle School	146	1	348	0.99
Eagle Academy PCS - Capitol Riverfront	1125	6	144	0.94
Eagle Academy PCS - Congress Heights	195	8	734	0.96
Early Childhood Academy PCS	138	8	229	0.85
Elsie Whitlow Stokes Community Freedom PCS	159	5	350	1.00
Excel Academy PCS	1113	8	702	0.91
Friendship PCS - Armstrong	269	5	438	0.98
Friendship PCS - Blow Pierce Elementary School	361	7	388	0.96
Friendship PCS - Blow Pierce Middle School	362	7	230	1.11
Friendship PCS - Chamberlain Elementary School	363	6	387	1.02
Friendship PCS - Chamberlain Middle School	364	6	330	0.97
Friendship PCS - Collegiate Academy	186	7	751	0.97
Friendship PCS - Online	268	4	145	1.08
Friendship PCS - Southeast Academy	113	8	553	1.00
Friendship PCS - Technology Preparatory High School	1164	8	233	0.91
Friendship PCS - Technology Preparatory Middle School	1124	8	257	0.90
Friendship PCS - Woodridge Elementary School	365	5	305	1.09
Friendship PCS - Woodridge Middle School	366	5	199	1.03
Goodwill Excel Center PCS	297	2	382	1.36
Harmony DC PCS - School of Excellence	245	5	97	0.52
Hope Community PCS - Lamond	131	4	321	1.01
Hope Community PCS - Tolson	114	5	561	1.12
Howard University Middle School of Mathematics and Science PCS	115	1	278	1.07
IDEA PCS	163	7	262	0.82
Ideal Academy PCS	134	4	300	1.02
Ingenuity Prep PCS	200	8	376	1.00
Inspired Teaching Demonstration PCS	3064	5	414	1.00
KIPP DC - AIM Academy PCS	116	8	373	1.06
KIPP DC - Arts and Technology Academy PCS	236	7	277	1.05

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
KIPP DC - College Preparatory Academy PCS	1123	5	594	1.07
KIPP DC - Connect Academy PCS	209	5	325	1.08
KIPP DC - Discover Academy PCS	1122	8	352	1.07
KIPP DC - Grow Academy PCS	1129	6	328	1.06
KIPP DC - Heights Academy PCS	3071	8	461	0.97
KIPP DC - KEY Academy PCS	189	7	337	0.97
KIPP DC - LEAP Academy PCS	132	7	198	1.00
KIPP DC - Lead Academy PCS	190	6	418	1.00
KIPP DC - Northeast Academy PCS	242	5	326	1.03
KIPP DC - Promise Academy PCS	1121	7	525	1.01
KIPP DC - Quest Academy PCS	237	7	365	1.09
KIPP DC - Spring Academy PCS	214	5	335	0.99
KIPP DC - Valor Academy PCS	243	7	223	1.01
KIPP DC - WILL Academy PCS	121	6	346	1.00
Kingsman Academy PCS	267	6	216	0.72
LAYC Career Academy PCS	104	5	185	0.97
Latin American Montessori Bilingual PCS	193	4	426	1.07
Lee Montessori PCS	228	1	145	1.06
Mary McLeod Bethune Day Academy PCS	135	5	402	0.89
Maya Angelou PCS - High School	101	4	209	1.00
Maya Angelou PCS - Young Adult Learning Center	137	5	101	0.67
Meridian PCS	165	7	692	0.84
Monument Academy PCS	260	7	76	0.95
Mundo Verde Bilingual PCS	3065	1	563	1.00
National Collegiate Preparatory PCHS	1120	6	275	1.02
Paul PCS - International High School	222	5	487	1.09
Paul PCS - Middle School	170	8	242	1.14
Perry Street Preparatory PCS	161	4	306	0.98
Richard Wright PCS for Journalism and Media Arts	3067	4	300	1.12
Rocketship DC PCS - Rise Academy	286	6	441	1.45
Roots PCS	173	8	118	1.13
SEED PCS of Washington DC	174	4	361	1.05
Sela PCS	197	7	177	1.05
Shining Stars Montessori Academy PCS	3066	4	203	1.01
Somerset Preparatory Academy PCS	187	5	324	1.00

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2016/17: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
St. Coletta Special Education PCS	1047	8	251	1.00
The Children's Guild PCS	255	5	342	0.91
The Next Step El Proximo Paso PCS	168	1	393	1.00
Thurgood Marshall Academy PCS	191	8	388	1.00
Two Rivers PCS - 4th St	198	6	527	1.01
Two Rivers PCS - Young	270	5	226	0.99
Washington Global PCS	263	6	174	0.97
Washington Latin PCS - Middle School	125	4	362	1.00
Washington Latin PCS - Upper School	1118	4	335	1.02
Washington Leadership Academy PCS	283	5	110	1.18
Washington Mathematics Science Technology PCHS	178	5	277	0.93
Washington Yu Ying PCS	1117	5	571	1.02
Youthbuild PCS	128	1	117	1.01

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2017/18: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
Academy of Hope Adult PCS	233	5,8	387	0.99
Achievement Preparatory Academy PCS - Wahler Place Elementary School	217	8	486	1.04
Achievement Preparatory Academy PCS - Wahler Place Middle School	1100	8	476	1
AppleTree Early Learning Center PCS - Columbia Heights	140	1	162	0.99
AppleTree Early Learning Center PCS - Lincoln Park	3073	6	60	1
AppleTree Early Learning Center PCS - Oklahoma Avenue	1137	7	143	0.98
AppleTree Early Learning Center PCS - Southeast	3072	8	181	0.94
AppleTree Early Learning Center PCS - Southwest	141	6	108	0.98
BASIS DC PCS	3068	2	598	1.02
Breakthrough Montessori PCS	289	4	135	1
Bridges PCS	142	5	399	0.95
Briya PCS	126	1,4,5	673	1.05
Capital City PCS - High School	1207	4	335	0.99
Capital City PCS - Lower School	184	4	324	1
Capital City PCS - Middle School	182	4	334	0.98
Carlos Rosario International PCS	1119	1,5	2121	1
Cedar Tree Academy PCS	188	8	381	0.95
Center City PCS - Brightwood	1103	4	263	1.02
Center City PCS - Capitol Hill	1104	6	260	0.96
Center City PCS - Congress Heights	1105	8	256	0.97
Center City PCS - Petworth	1106	4	252	0.99
Center City PCS - Shaw	1107	6	236	0.98
Center City PCS - Trinidad	1108	5	202	0.88
Cesar Chavez PCS for Public Policy - Capitol Hill	153	6	259	1.21
Cesar Chavez PCS for Public Policy - Chavez Prep	127	1	294	0.97
Cesar Chavez PCS for Public Policy - Parkside High School	109	7	367	0.93
Cesar Chavez PCS for Public Policy - Parkside Middle School	102	7	257	0.97
City Arts & Prep PCS	210	5	499	1.06
Community College Preparatory Academy PCS	216	6,8	600	1
Creative Minds International PCS	3069	5	441	1
DC Bilingual PCS	199	5	440	0.97
DC Prep PCS - Anacostia Elementary School	276	8	304	1
DC Prep PCS - Benning Elementary School	1110	7	453	1
DC Prep PCS - Benning Middle School	218	7	335	0.98
DC Prep PCS - Edgewood Elementary School	130	5	451	1

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2017/18: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
DC Prep PCS - Edgewood Middle School	196	5	332	0.99
DC Scholars PCS	3070	7	515	1
Democracy Prep Congress Heights PCS	234	8	645	1.05
District of Columbia International School	248	1	804	1.01
E.L. Haynes PCS - Elementary School	1206	4	348	1
E.L. Haynes PCS - High School	1138	4	430	1.04
E.L. Haynes PCS - Middle School	146	1	353	0.99
Eagle Academy PCS - Capitol Riverfront	1125	6	166	0.9
Eagle Academy PCS - Congress Heights	195	8	770	0.97
Early Childhood Academy PCS	138	8	246	1.01
Elsie Whitlow Stokes Community Freedom PCS	159	5	350	1
Excel Academy PCS	1113	8	643	1.08
Friendship PCS - Armstrong	269	5	395	1.21
Friendship PCS - Blow Pierce Elementary School	361	7	387	1.02
Friendship PCS - Blow Pierce Middle School	362	7	242	1.03
Friendship PCS - Chamberlain Elementary School	363	6	377	1.03
Friendship PCS - Chamberlain Middle School	364	6	323	1.07
Friendship PCS - Collegiate Academy	186	7	685	1.03
Friendship PCS - Online	268	4	180	0.84
Friendship PCS - Southeast Academy	113	8	559	0.99
Friendship PCS - Technology Preparatory High School	1164	8	253	1.06
Friendship PCS - Technology Preparatory Middle School	1124	8	255	1
Friendship PCS - Woodridge Elementary School	365	5	297	1.08
Friendship PCS - Woodridge Middle School	366	5	218	1.01
Goodwill Excel Center PCS	297	2	358	0.98
Harmony DC PCS - School of Excellence	245	5	94	1.32
Hope Community PCS - Lamond	131	4	288	1.14
Hope Community PCS - Tolson	114	5	467	1.23
Howard University Middle School of Mathematics and Science PCS	115	1	278	1.05
IDEA PCS	163	7	306	0.92
Ideal Academy PCS	134	4	289	1.04
Ingenuity Prep PCS	200	8	496	0.96
Inspired Teaching Demonstration PCS	3064	5	446	1
KIPP DC - AIM Academy PCS	116	8	378	1
KIPP DC - Arts and Technology Academy PCS	236	7	347	1

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2017/18: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
KIPP DC - College Preparatory Academy PCS	1123	5	713	0.98
KIPP DC - Connect Academy PCS	209	5	325	1
KIPP DC - Discover Academy PCS	1122	8	351	1
KIPP DC - Grow Academy PCS	1129	6	321	1
KIPP DC - Heights Academy PCS	3071	8	461	0.98
KIPP DC - KEY Academy PCS	189	7	338	1.01
KIPP DC - LEAP Academy PCS	132	7	198	1
KIPP DC - Lead Academy PCS	190	6	405	1.01
KIPP DC - Northeast Academy PCS	242	5	330	1
KIPP DC - Promise Academy PCS	1121	7	520	1
KIPP DC - Quest Academy PCS	237	7	391	1
KIPP DC - Spring Academy PCS	214	5	410	1
KIPP DC - Valor Academy PCS	243	7	307	1
KIPP DC - WILL Academy PCS	121	6	321	1.04
Kingsman Academy PCS	267	6	252	1.04
LAYC Career Academy PCS	104	5	137	1.38
Latin American Montessori Bilingual PCS	193	4	462	1
Lee Montessori PCS	228	1	177	1
Mary McLeod Bethune Day Academy PCS	135	5	458	1
Maya Angelou PCS - High School	101	4	170	1.22
Maya Angelou PCS - Young Adult Learning Center	137	5	136	0.95
Meridian PCS	165	7	636	1.09
Monument Academy PCS	260	7	116	1.03
Mundo Verde Bilingual PCS	3065	1	578	1.04
National Collegiate Preparatory PCHS	1120	6	277	1.04
Paul PCS - International High School	222	5	480	1.01
Paul PCS - Middle School	170	8	228	1.16
Perry Street Preparatory PCS	161	4	351	0.89
Richard Wright PCS for Journalism and Media Arts	3067	4	282	1.12
Rocketship DC PCS - Legacy Prep	1016	5	106	3.25
Rocketship DC PCS - Rise Academy	286	6	527	1
Roots PCS	173	8	118	1.01
SEED PCS of Washington DC	174	4	363	0.98
Sela PCS	197	7	202	0.99
Shining Stars Montessori Academy PCS	3066	4	274	1

TABLE 5 (CONTINUED)

Ratios of Projected to Audited Enrollments for PCS Schools 2017/18: By School

School Name	School Code	Ward(s)	Audited Enrollment	Projection / Enrollment Ratio
Somerset Preparatory Academy PCS	187	5	375	1.17
St. Coletta Special Education PCS	1047	8	247	1.01
Sustainable Futures PCS	1000	7	46	2.71
The Children's Guild PCS	255	5	375	0.99
The Next Step El Proximo Paso PCS	168	1	418	0.95
Thurgood Marshall Academy PCS	191	8	383	1.03
Two Rivers PCS - 4th St	198	6	528	1
Two Rivers PCS - Young	270	5	284	1
Washington Global PCS	263	6	196	1.12
Washington Latin PCS - Middle School	125	4	367	0.99
Washington Latin PCS - Upper School	1118	4	331	1.01
Washington Leadership Academy PCS	283	5	204	0.94
Washington Mathematics Science Technology PCHS	178	5	228	1.24
Washington Yu Ying PCS	1117	5	579	0.98
Youthbuild PCS	128	1	119	0.97

TABLE 6

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
AITON ES	202	Ward 7	2015	158	63	44	0.40
AITON ES	202	Ward 7	2016	177	48	53	0.36
AITON ES	202	Ward 7	2017	146	66	60	0.46
AMIDON BOWEN ES	203	Ward 6	2015	242	84	38	0.34
AMIDON BOWEN ES	203	Ward 6	2016	236	86	43	0.35
AMIDON BOWEN ES	203	Ward 6	2017	238	88	39	0.35
ANACOSTIA HS	450	Ward 8	2015	214	136	160	0.58
ANACOSTIA HS	450	Ward 8	2016	210	141	168	0.60
ANACOSTIA HS	450	Ward 8	2017	228	124	184	0.57
BALLOU HS	452	Ward 8	2015	296	391	32	0.59
BALLOU HS	452	Ward 8	2016	394	371	59	0.52
BALLOU HS	452	Ward 8	2017	425	433	88	0.55
BALLOU STAY	462	Ward 8	2015	22	153	200	0.94
BALLOU STAY	462	Ward 8	2016	23	148	211	0.94
BALLOU STAY	462	Ward 8	2017	25	200	282	0.95
BANCROFT ES	204	Ward 4	2015	389	81	22	0.21
BANCROFT ES	204	Ward 4	2016	432	53	12	0.13
BANCROFT ES	204	Ward 4	2017	425	76	11	0.17
BARNARD ES	205	Ward 4	2015	447	116	51	0.27
BARNARD ES	205	Ward 4	2016	467	114	53	0.26
BARNARD ES	205	Ward 4	2017	490	91	53	0.23
BEERS ES	206	Ward 7	2015	288	102	50	0.35
BEERS ES	206	Ward 7	2016	326	96	46	0.30
BEERS ES	206	Ward 7	2017	341	101	40	0.29
BENJAMIN BANNEKER HS	402	Ward 1	2015	297	145	32	0.37
BENJAMIN BANNEKER HS	402	Ward 1	2016	344	134	18	0.31
BENJAMIN BANNEKER HS	402	Ward 1	2017	338	144	31	0.34
BRENT ES	212	Ward 6	2015	270	80	40	0.31
BRENT ES	212	Ward 6	2016	308	64	31	0.24
BRENT ES	212	Ward 6	2017	314	79	24	0.25
BRIGHTWOOD EC	213	Ward 4	2015	502	158	41	0.28
BRIGHTWOOD EC	213	Ward 4	2016	537	172	56	0.30
BRIGHTWOOD EC	213	Ward 4	2017	551	145	67	0.28
BROOKLAND MS	347	Ward 5	2015	45	262	14	0.86
BROOKLAND MS	347	Ward 5	2016	172	79	67	0.46
BROOKLAND MS	347	Ward 5	2017	142	96	44	0.50

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
BROWNE EC	404	Ward 5	2015	201	95	66	0.44
BROWNE EC	404	Ward 5	2016	200	73	71	0.42
BROWNE EC	404	Ward 5	2017	220	80	38	0.35
BRUCE MONROE ES AT PARK VIEW	296	Ward 1	2015	354	70	40	0.24
BRUCE MONROE ES AT PARK VIEW	296	Ward 1	2016	346	81	38	0.26
BRUCE MONROE ES AT PARK VIEW	296	Ward 1	2017	361	68	32	0.22
BUNKER HILL ES	219	Ward 5	2015	<10	142	<10	1.00
BUNKER HILL ES	219	Ward 5	2016	112	57	10	0.37
BUNKER HILL ES	219	Ward 5	2017	138	40	18	0.30
BURROUGHS EC	220	Ward 5	2015	178	65	62	0.42
BURROUGHS EC	220	Ward 5	2016	192	62	42	0.35
BURROUGHS EC	220	Ward 5	2017	186	59	43	0.35
BURRVILLE ES	221	Ward 7	2015	219	53	70	0.36
BURRVILLE ES	221	Ward 7	2016	234	53	37	0.28
BURRVILLE ES	221	Ward 7	2017	196	69	74	0.42
C W HARRIS ES	247	Ward 7	2015	171	96	61	0.48
C W HARRIS ES	247	Ward 7	2016	172	84	50	0.44
C W HARRIS ES	247	Ward 7	2017	172	88	51	0.45
CAPITOL HILL MONTESSORI SCHOOL AT LOGAN	360	Ward 6	2015	231	34	47	0.26
CAPITOL HILL MONTESSORI SCHOOL AT LOGAN	360	Ward 6	2016	261	42	34	0.23
CAPITOL HILL MONTESSORI SCHOOL AT LOGAN	360	Ward 6	2017	275	36	45	0.23
CARDOZO EC	454	Ward 1	2015	344	278	301	0.63
CARDOZO EC	454	Ward 1	2016	405	321	288	0.60
CARDOZO EC	454	Ward 1	2017	427	336	274	0.59
CHOICE ACADEMY	947	Ward 1	2015	<10	<10	<10	1.00
CHOICE ACADEMY	947	Ward 1	2016	<10	<10	<10	1.00
CHOICE ACADEMY	947	Ward 1	2017	<10	<10	<10	1.00
CLEVELAND ES	224	Ward 1	2015	222	55	41	0.30
CLEVELAND ES	224	Ward 1	2016	226	54	31	0.27
CLEVELAND ES	224	Ward 1	2017	224	60	38	0.30

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
COLUMBIA HEIGHTS EC (CHEC)	442	Ward 1	2015	759	472	188	0.47
COLUMBIA HEIGHTS EC (CHEC)	442	Ward 1	2016	818	455	231	0.46
COLUMBIA HEIGHTS EC (CHEC)	442	Ward 1	2017	825	409	260	0.45
COOKE HD ES	227	Ward 1	2015	268	89	50	0.34
COOKE HD ES	227	Ward 1	2016	284	111	37	0.34
COOKE HD ES	227	Ward 1	2017	270	102	60	0.38
COOLIDGE HS	455	Ward 4	2015	151	119	134	0.63
COOLIDGE HS	455	Ward 4	2016	162	100	128	0.58
COOLIDGE HS	455	Ward 4	2017	166	134	184	0.66
DEAL MS	405	Ward 3	2015	1139	202	16	0.16
DEAL MS	405	Ward 3	2016	1249	228	28	0.17
DEAL MS	405	Ward 3	2017	1254	221	41	0.17
DOROTHY HEIGHTS ES	349	Ward 4	2015	<10	422	<10	1.00
DOROTHY HEIGHTS ES	349	Ward 4	2016	351	114	68	0.34
DOROTHY HEIGHTS ES	349	Ward 4	2017	327	88	94	0.36
DREW ES	231	Ward 7	2015	144	76	26	0.41
DREW ES	231	Ward 7	2016	193	41	15	0.22
DREW ES	231	Ward 7	2017	185	61	23	0.31
DUNBAR HS	467	Ward 5	2015	310	164	156	0.51
DUNBAR HS	467	Ward 5	2016	318	208	224	0.58
DUNBAR HS	467	Ward 5	2017	324	282	268	0.63
EASTERN HS	457	Ward 6	2015	572	208	201	0.42
EASTERN HS	457	Ward 6	2016	531	189	306	0.48
EASTERN HS	457	Ward 6	2017	529	218	318	0.50
EATON ES	232	Ward 3	2015	350	120	10	0.27
EATON ES	232	Ward 3	2016	352	120	<10	0.26
EATON ES	232	Ward 3	2017	358	118	<10	0.26
ELIOT HINE MS	407	Ward 6	2015	156	48	117	0.51
ELIOT HINE MS	407	Ward 6	2016	136	59	91	0.52
ELIOT HINE MS	407	Ward 6	2017	138	65	72	0.50
ELLINGTON SCHOOL OF THE ARTS	471	Ward 1	2015	315	173	10	0.37
ELLINGTON SCHOOL OF THE ARTS	471	Ward 1	2016	323	205	12	0.40
ELLINGTON SCHOOL OF THE ARTS	471	Ward 1	2017	356	210	21	0.39

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
GARFIELD ES	238	Ward 8	2015	175	109	61	0.49
GARFIELD ES	238	Ward 8	2016	191	88	61	0.44
GARFIELD ES	238	Ward 8	2017	203	73	47	0.37
GARRISON ES	239	Ward 2	2015	144	48	63	0.44
GARRISON ES	239	Ward 2	2016	138	66	48	0.45
GARRISON ES	239	Ward 2	2017	153	60	51	0.42
HARDY MS	246	Ward 2	2015	259	114	87	0.44
HARDY MS	246	Ward 2	2016	263	108	97	0.44
HARDY MS	246	Ward 2	2017	265	127	92	0.45
HART MS	413	Ward 8	2015	282	92	164	0.48
HART MS	413	Ward 8	2016	247	101	160	0.51
HART MS	413	Ward 8	2017	241	96	184	0.54
HD WOODSON HS	464	Ward 7	2015	324	200	97	0.48
HD WOODSON HS	464	Ward 7	2016	369	213	143	0.49
HD WOODSON HS	464	Ward 7	2017	346	123	195	0.48
HEARST ES	258	Ward 3	2015	207	96	13	0.34
HEARST ES	258	Ward 3	2016	225	82	20	0.31
HEARST ES	258	Ward 3	2017	227	85	14	0.30
HENDLEY ES	249	Ward 8	2015	289	135	91	0.44
HENDLEY ES	249	Ward 8	2016	275	139	86	0.45
HENDLEY ES	249	Ward 8	2017	239	115	111	0.49
HORACE MANN ES	273	Ward 3	2015	237	118	<10	0.34
HORACE MANN ES	273	Ward 3	2016	268	110	<10	0.29
HORACE MANN ES	273	Ward 3	2017	293	107	10	0.29
HOUSTON ES	251	Ward 7	2015	184	62	36	0.35
HOUSTON ES	251	Ward 7	2016	189	79	40	0.39
HOUSTON ES	251	Ward 7	2017	182	56	51	0.37
HYDE ADDISON ES	252	Ward 2	2015	207	91	17	0.34
HYDE ADDISON ES	252	Ward 2	2016	212	100	24	0.37
HYDE ADDISON ES	252	Ward 2	2017	142	162	54	0.60
J O WILSON ES	339	Ward 6	2015	345	105	48	0.31
J O WILSON ES	339	Ward 6	2016	339	99	67	0.33
J O WILSON ES	339	Ward 6	2017	344	117	60	0.34
JANNEY ES	254	Ward 3	2015	561	165	<10	0.23
JANNEY ES	254	Ward 3	2016	584	134	<10	0.19
JANNEY ES	254	Ward 3	2017	570	166	<10	0.23

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
JEFFERSON MIDDLE SCHOOL ACADEMY	433	Ward 6	2015	135	121	47	0.55
JEFFERSON MIDDLE SCHOOL ACADEMY	433	Ward 6	2016	182	113	91	0.53
JEFFERSON MIDDLE SCHOOL ACADEMY	433	Ward 6	2017	208	106	121	0.52
JOHNSON JOHN HAYDEN MS	416	Ward 8	2015	203	77	87	0.45
JOHNSON JOHN HAYDEN MS	416	Ward 8	2016	168	77	91	0.50
JOHNSON JOHN HAYDEN MS	416	Ward 8	2017	176	79	65	0.45
KELLY MILLER MS	421	Ward 7	2015	335	107	175	0.46
KELLY MILLER MS	421	Ward 7	2016	343	106	157	0.43
KELLY MILLER MS	421	Ward 7	2017	297	90	178	0.47
KETCHAM ES	257	Ward 8	2015	192	80	50	0.40
KETCHAM ES	257	Ward 8	2016	201	66	50	0.37
KETCHAM ES	257	Ward 8	2017	203	76	48	0.38
KEY ES	272	Ward 3	2015	287	95	18	0.28
KEY ES	272	Ward 3	2016	294	101	17	0.29
KEY ES	272	Ward 3	2017	312	105	<10	0.26
KIMBALL ES	259	Ward 7	2015	223	99	39	0.38
KIMBALL ES	259	Ward 7	2016	239	102	35	0.36
KIMBALL ES	259	Ward 7	2017	234	66	71	0.37
KING M L ES	344	Ward 8	2015	249	105	56	0.39
KING M L ES	344	Ward 8	2016	254	90	68	0.38
KING M L ES	344	Ward 8	2017	221	98	77	0.44
KRAMER MS	417	Ward 8	2015	177	65	224	0.62
KRAMER MS	417	Ward 8	2016	144	44	197	0.63
KRAMER MS	417	Ward 8	2017	135	59	182	0.64
LAFAYETTE ES	261	Ward 4	2015	541	154	<10	0.23
LAFAYETTE ES	261	Ward 4	2016	541	219	<10	0.29
LAFAYETTE ES	261	Ward 4	2017	588	227	<10	0.28
LANGDON EC	262	Ward 5	2015	178	89	113	0.53
LANGDON EC	262	Ward 5	2016	222	62	17	0.26
LANGDON EC	262	Ward 5	2017	216	69	38	0.33

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
LANGLEY EDUCATION CAMPUS	370	Ward 5	2015	170	73	44	0.41
LANGLEY EDUCATION CAMPUS	370	Ward 5	2016	189	69	40	0.37
LANGLEY EDUCATION CAMPUS	370	Ward 5	2017	164	70	62	0.45
LASALLE-BACKUS EC	264	Ward 4	2015	233	87	35	0.34
LASALLE-BACKUS EC	264	Ward 4	2016	230	121	35	0.40
LASALLE-BACKUS EC	264	Ward 4	2017	244	96	32	0.34
LECKIE ES	266	Ward 8	2015	304	162	50	0.41
LECKIE ES	266	Ward 8	2016	320	188	59	0.44
LECKIE ES	266	Ward 8	2017	353	163	62	0.39
LUDLOW-TAYLOR ES	271	Ward 6	2015	235	72	29	0.30
LUDLOW-TAYLOR ES	271	Ward 6	2016	271	55	39	0.26
LUDLOW-TAYLOR ES	271	Ward 6	2017	291	76	28	0.26
LUKE MOORE ALTERNATIVE HS	884	Ward 5	2015	16	139	<10	0.90
LUKE MOORE ALTERNATIVE HS	884	Ward 5	2016	29	136	<10	0.83
LUKE MOORE ALTERNATIVE HS	884	Ward 5	2017	27	185	<10	0.88
MACFARLAND MS DUAL LANGUAGE PROGRAM	420	Ward 4	2015	<10	<10	<10	
MACFARLAND MS DUAL LANGUAGE PROGRAM	420	Ward 4	2016	<10	69	<10	1.00
MACFARLAND MS DUAL LANGUAGE PROGRAM	420	Ward 4	2017	61	71	<10	0.55
MALCOLM X ES AT GREEN	308	Ward 8	2015	111	81	63	0.56
MALCOLM X ES AT GREEN	308	Ward 8	2016	144	64	56	0.45
MALCOLM X ES AT GREEN	308	Ward 8	2017	144	85	52	0.49
MARIE REED ES	284	Ward 4	2015	294	51	38	0.23
MARIE REED ES	284	Ward 4	2016	292	60	40	0.26
MARIE REED ES	284	Ward 4	2017	297	82	19	0.25
MAURY ES	274	Ward 6	2015	293	48	20	0.19
MAURY ES	274	Ward 6	2016	296	49	22	0.19
MAURY ES	274	Ward 6	2017	314	54	20	0.19
MCKINLEY MIDDLE SCHOOL	435	Ward 5	2015	122	101	35	0.53
MCKINLEY MIDDLE SCHOOL	435	Ward 5	2016	141	73	38	0.44
MCKINLEY MIDDLE SCHOOL	435	Ward 5	2017	145	96	37	0.48
MCKINLEY TECHNOLOGY HS	458	Ward 5	2015	393	243	47	0.42
MCKINLEY TECHNOLOGY HS	458	Ward 5	2016	437	165	36	0.32
MCKINLEY TECHNOLOGY HS	458	Ward 5	2017	411	209	31	0.37
MINER ES	280	Ward 6	2015	279	65	62	0.31
MINER ES	280	Ward 6	2016	281	57	48	0.27
MINER ES	280	Ward 6	2017	213	86	96	0.46

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
MOTEN ES	285	Ward 8	2015	263	109	58	0.39
MOTEN ES	285	Ward 8	2016	273	92	73	0.38
MOTEN ES	285	Ward 8	2017	248	113	83	0.44
MURCH ES	287	Ward 3	2015	438	185	17	0.32
MURCH ES	287	Ward 3	2016	436	136	27	0.27
MURCH ES	287	Ward 3	2017	422	151	<10	0.27
NALLE ES	288	Ward 7	2015	250	90	51	0.36
NALLE ES	288	Ward 7	2016	257	77	60	0.35
NALLE ES	288	Ward 7	2017	275	71	55	0.31
NOYES EC	290	Ward 5	2015	123	40	82	0.50
NOYES EC	290	Ward 5	2016	120	58	26	0.41
NOYES EC	290	Ward 5	2017	117	60	42	0.47
ORR ES	291	Ward 8	2015	252	122	68	0.43
ORR ES	291	Ward 8	2016	277	85	62	0.35
ORR ES	291	Ward 8	2017	297	68	47	0.28
OYSTER ADAMS BILINGUAL SCHOOL	292	Ward 3	2015	516	144	24	0.25
OYSTER ADAMS BILINGUAL SCHOOL	292	Ward 3	2016	553	112	17	0.19
OYSTER ADAMS BILINGUAL SCHOOL	292	Ward 3	2017	549	124	13	0.20
PATTERSON ES	294	Ward 8	2015	244	118	74	0.44
PATTERSON ES	294	Ward 8	2016	272	86	62	0.35
PATTERSON ES	294	Ward 8	2017	255	89	67	0.38
PAYNE ES	295	Ward 6	2015	198	74	28	0.34
PAYNE ES	295	Ward 6	2016	205	66	35	0.33
PAYNE ES	295	Ward 6	2017	185	92	53	0.44
PEABODY ES (CAPITOL HILL CLUSTER)	301	Ward 6	2015	107	52	91	0.57
PEABODY ES (CAPITOL HILL CLUSTER)	301	Ward 6	2016	111	54	85	0.56
PEABODY ES (CAPITOL HILL CLUSTER)	301	Ward 6	2017	118	49	80	0.52
PHELPS ARCHITECTURE CONSTRUCTION AND ENGINEERING HS	478	Ward 5	2015	173	89	37	0.42
PHELPS ARCHITECTURE CONSTRUCTION AND ENGINEERING HS	478	Ward 5	2016	181	127	26	0.46
PHELPS ARCHITECTURE CONSTRUCTION AND ENGINEERING HS	478	Ward 5	2017	177	83	35	0.40

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
PLUMMER ES	299	Ward 7	2015	280	93	70	0.37
PLUMMER ES	299	Ward 7	2016	287	72	50	0.30
PLUMMER ES	299	Ward 7	2017	260	87	56	0.35
POWELL ES	300	Ward 4	2015	367	101	24	0.25
POWELL ES	300	Ward 4	2016	395	89	30	0.23
POWELL ES	300	Ward 4	2017	430	74	21	0.18
RANDLE HIGHLANDS ES	316	Ward 7	2015	225	73	58	0.37
RANDLE HIGHLANDS ES	316	Ward 7	2016	236	63	39	0.30
RANDLE HIGHLANDS ES	316	Ward 7	2017	225	66	35	0.31
RAYMOND EC	302	Ward 4	2015	384	104	77	0.32
RAYMOND EC	302	Ward 4	2016	422	129	52	0.30
RAYMOND EC	302	Ward 4	2017	445	103	72	0.28
RIVER TERRACE ES	304	Ward 7	2015	<10	41	<10	1.00
RIVER TERRACE ES	304	Ward 7	2016	22	27	<10	0.57
RIVER TERRACE ES	304	Ward 7	2017	31	16	<10	0.34
RON BROWN COLLEGE PREPARATORY HS	436	Ward 7	2015	<10	<10	<10	
RON BROWN COLLEGE PREPARATORY HS	436	Ward 7	2016	<10	97	<10	1.00
RON BROWN COLLEGE PREPARATORY HS	436	Ward 7	2017	82	127	<10	0.62
ROOSEVELT HS	459	Ward 4	2015	142	220	66	0.67
ROOSEVELT HS	459	Ward 4	2016	217	344	83	0.66
ROOSEVELT HS	459	Ward 4	2017	323	355	158	0.61
ROOSEVELT STAY	456	Ward 4	2015	<10	173	<10	1.00
ROOSEVELT STAY	456	Ward 4	2016	13	132	<10	0.91
ROOSEVELT STAY	456	Ward 4	2017	26	262	<10	0.91
ROSS ES	305	Ward 2	2015	124	25	12	0.23
ROSS ES	305	Ward 2	2016	119	36	12	0.29
ROSS ES	305	Ward 2	2017	125	33	14	0.27
SAVOY ES	307	Ward 8	2015	236	65	65	0.36
SAVOY ES	307	Ward 8	2016	226	57	57	0.34
SAVOY ES	307	Ward 8	2017	199	50	66	0.37
SCHOOL WITHIN SCHOOL AT GODING	175	Ward 6	2015	220	32	<10	0.16
SCHOOL WITHIN SCHOOL AT GODING	175	Ward 6	2016	241	34	23	0.19
SCHOOL WITHIN SCHOOL AT GODING	175	Ward 6	2017	244	34	19	0.18

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total stayer	Total Inflow	Total Outflow	Mobility Ratio
SCHOOL WITHOUT WALLS @ FRANCIS-STEVENS	409	Ward 2	2015	286	111	40	0.35
SCHOOL WITHOUT WALLS @ FRANCIS-STEVENS	409	Ward 2	2016	323	109	32	0.30
SCHOOL WITHOUT WALLS @ FRANCIS-STEVENS	409	Ward 2	2017	339	94	31	0.27
SCHOOL WITHOUT WALLS SHS	466	Ward 2	2015	385	198	<10	0.35
SCHOOL WITHOUT WALLS SHS	466	Ward 2	2016	405	179	<10	0.31
SCHOOL WITHOUT WALLS SHS	466	Ward 2	2017	414	178	<10	0.31
SEATON ES	309	Ward 6	2015	216	48	27	0.26
SEATON ES	309	Ward 6	2016	235	63	32	0.29
SEATON ES	309	Ward 6	2017	259	68	36	0.29
SHEPHERD ES	313	Ward 4	2015	211	90	24	0.35
SHEPHERD ES	313	Ward 4	2016	248	81	21	0.29
SHEPHERD ES	313	Ward 4	2017	269	66	12	0.22
SIMON ES	315	Ward 8	2015	200	71	36	0.35
SIMON ES	315	Ward 8	2016	185	69	46	0.38
SIMON ES	315	Ward 8	2017	179	75	37	0.38
SMOTHERS ES	322	Ward 7	2015	166	70	63	0.44
SMOTHERS ES	322	Ward 7	2016	161	60	52	0.41
SMOTHERS ES	322	Ward 7	2017	148	72	55	0.46
SOUSA MS	427	Ward 7	2015	185	66	103	0.48
SOUSA MS	427	Ward 7	2016	195	57	108	0.46
SOUSA MS	427	Ward 7	2017	170	58	139	0.54
STANTON ES	319	Ward 8	2015	353	118	80	0.36
STANTON ES	319	Ward 8	2016	362	117	55	0.32
STANTON ES	319	Ward 8	2017	351	113	71	0.34
STODDERT ES	321	Ward 3	2015	312	102	16	0.27
STODDERT ES	321	Ward 3	2016	314	120	<10	0.28
STODDERT ES	321	Ward 3	2017	290	148	28	0.38
STUART-HOBSON MS (CAPITOL HILL CLUSTER)	428	Ward 6	2015	292	132	32	0.36
STUART-HOBSON MS (CAPITOL HILL CLUSTER)	428	Ward 6	2016	298	132	44	0.37
STUART-HOBSON MS (CAPITOL HILL CLUSTER)	428	Ward 6	2017	309	113	49	0.34
TAKOMA EC	324	Ward 4	2015	338	96	41	0.29
TAKOMA EC	324	Ward 4	2016	334	101	45	0.30
TAKOMA EC	324	Ward 4	2017	340	100	41	0.29

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
THOMAS ES	325	Ward 7	2015	272	107	75	0.40
THOMAS ES	325	Ward 7	2016	255	106	76	0.42
THOMAS ES	325	Ward 7	2017	252	98	89	0.43
THOMSON ES	326	Ward 2	2015	199	52	28	0.29
THOMSON ES	326	Ward 2	2016	218	61	20	0.27
THOMSON ES	326	Ward 2	2017	216	60	23	0.28
TRUESDELL EC	327	Ward 4	2015	403	136	33	0.30
TRUESDELL EC	327	Ward 4	2016	465	167	35	0.30
TRUESDELL EC	327	Ward 4	2017	516	138	56	0.27
TUBMAN ES	328	Ward 1	2015	377	120	43	0.30
TUBMAN ES	328	Ward 1	2016	385	104	62	0.30
TUBMAN ES	328	Ward 1	2017	375	134	46	0.32
TURNER ES	329	Ward 8	2015	265	156	44	0.43
TURNER ES	329	Ward 8	2016	300	143	78	0.42
TURNER ES	329	Ward 8	2017	317	112	78	0.37
TYLER ES	330	Ward 6	2015	374	81	62	0.28
TYLER ES	330	Ward 6	2016	369	82	67	0.29
TYLER ES	330	Ward 6	2017	382	85	60	0.28
VAN NESS ES	331	Ward 6	2015	<10	55	<10	1.00
VAN NESS ES	331	Ward 6	2016	73	53	<10	0.46
VAN NESS ES	331	Ward 6	2017	139	42	10	0.27
WALKER-JONES EC	332	Ward 6	2015	280	100	74	0.38
WALKER-JONES EC	332	Ward 6	2016	290	112	85	0.40
WALKER-JONES EC	332	Ward 6	2017	302	96	72	0.36
WASHINGTON METROPOLITAN HS	474	Ward 1	2015	31	52	12	0.67
WASHINGTON METROPOLITAN HS	474	Ward 1	2016	33	69	17	0.72
WASHINGTON METROPOLITAN HS	474	Ward 1	2017	28	153	13	0.86
WATKINS ES (CAPITOL HILL CLUSTER)	333	Ward 6	2015	324	135	52	0.37
WATKINS ES (CAPITOL HILL CLUSTER)	333	Ward 6	2016	297	140	42	0.38
WATKINS ES (CAPITOL HILL CLUSTER)	333	Ward 6	2017	301	127	32	0.35
WEST EC	336	Ward 4	2015	207	68	18	0.29
WEST EC	336	Ward 4	2016	223	67	33	0.31
WEST EC	336	Ward 4	2017	218	83	44	0.37
WHEATLEY EC	335	Ward 5	2015	237	80	122	0.46
WHEATLEY EC	335	Ward 5	2016	213	83	78	0.43
WHEATLEY EC	335	Ward 5	2017	195	98	62	0.45

TABLE 6 (CONTINUED)

Mobility Measures for DCPS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
WHITTIER EC	338	Ward 4	2015	240	96	57	0.39
WHITTIER EC	338	Ward 4	2016	243	64	66	0.35
WHITTIER EC	338	Ward 4	2017	221	78	51	0.37
WILSON HS	463	Ward 3	2015	1409	218	162	0.21
WILSON HS	463	Ward 3	2016	1446	205	190	0.21
WILSON HS	463	Ward 3	2017	1535	281	180	0.23
YOUTH SERVICES CENTER	861	Ward 5	2015	<10	23	10	1.00
YOUTH SERVICES CENTER	861	Ward 5	2016	<10	49	16	0.97
YOUTH SERVICES CENTER	861	Ward 5	2017	<10	44	26	0.97

TABLE 7

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
ACHIEVEMENT PREPARATORY PCS-ES	217	Ward 8	2015	130	132	92	0.63
ACHIEVEMENT PREPARATORY PCS-ES	217	Ward 8	2016	132	257	108	0.73
ACHIEVEMENT PREPARATORY PCS-ES	217	Ward 8	2017	277	134	133	0.49
ACHIEVEMENT PREPARATORY PCS-MS	1100	Ward 8	2015	166	205	52	0.61
ACHIEVEMENT PREPARATORY PCS-MS	1100	Ward 8	2016	202	256	33	0.59
ACHIEVEMENT PREPARATORY PCS-MS	1100	Ward 8	2017	240	236	27	0.52
APPLETREE EARLY LEARNING PCS- SOUTHEAST	3072	Ward 8	2015	60	27	92	0.66
APPLETREE EARLY LEARNING PCS- SOUTHEAST	3072	Ward 8	2016	46	36	113	0.76
APPLETREE EARLY LEARNING PCS- SOUTHEAST	3072	Ward 8	2017	52	37	91	0.71
APPLETREE EARLY LEARNING PCS-COLUMBIA HEIGHTS	140	Ward 1	2015	53	12	81	0.64
APPLETREE EARLY LEARNING PCS-COLUMBIA HEIGHTS	140	Ward 1	2016	57	23	79	0.64
APPLETREE EARLY LEARNING PCS-COLUMBIA HEIGHTS	140	Ward 1	2017	56	25	80	0.65
APPLETREE EARLY LEARNING PCS-LINCOLN PARK	3073	Ward 6	2015	12	<10	35	0.76
APPLETREE EARLY LEARNING PCS-LINCOLN PARK	3073	Ward 6	2016	19	14	29	0.69
APPLETREE EARLY LEARNING PCS-LINCOLN PARK	3073	Ward 6	2017	18	<10	29	0.68
APPLETREE EARLY LEARNING PCS-OKLAHOMA AVENUE	1137	Ward 7	2015	47	33	83	0.71
APPLETREE EARLY LEARNING PCS-OKLAHOMA AVENUE	1137	Ward 7	2016	39	26	90	0.75
APPLETREE EARLY LEARNING PCS-OKLAHOMA AVENUE	1137	Ward 7	2017	46	25	70	0.67
APPLETREE EARLY LEARNING PCS-SOUTHWEST	141	Ward 6	2015	31	17	44	0.66
APPLETREE EARLY LEARNING PCS-SOUTHWEST	141	Ward 6	2016	30	19	57	0.72
APPLETREE EARLY LEARNING PCS-SOUTHWEST	141	Ward 6	2017	39	<10	55	0.61
BASIS DC PCS	3068	Ward 2	2015	237	332	31	0.61
BASIS DC PCS	3068	Ward 2	2016	283	300	36	0.54
BASIS DC PCS	3068	Ward 2	2017	310	288	31	0.51
BREAKTHROUGH MONTESSORI PCS	289	Ward 4	2015	<10	<10	<10	
BREAKTHROUGH MONTESSORI PCS	289	Ward 4	2016	<10	39	<10	1.00
BREAKTHROUGH MONTESSORI PCS	289	Ward 4	2017	64	28	19	0.42

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
BRIDGES PCS	142	Ward 5	2015	189	67	50	0.38
BRIDGES PCS	142	Ward 5	2016	208	69	80	0.42
BRIDGES PCS	142	Ward 5	2017	254	89	38	0.33
BRIYA PCS	126	Ward 1	2015	<10	<10	16	0.70
BRIYA PCS	126	Ward 1	2016	<10	<10	15	0.74
BRIYA PCS	126	Ward 1	2017	14	<10	15	0.63
CAPITAL CITY PCS- HS	1207	Ward 4	2015	190	106	<10	0.38
CAPITAL CITY PCS- HS	1207	Ward 4	2016	219	93	16	0.33
CAPITAL CITY PCS- HS	1207	Ward 4	2017	222	113	21	0.38
CAPITAL CITY PCS-ES	184	Ward 4	2015	233	58	58	0.33
CAPITAL CITY PCS-ES	184	Ward 4	2016	232	59	67	0.35
CAPITAL CITY PCS-ES	184	Ward 4	2017	241	51	61	0.32
CAPITAL CITY PCS-MS	182	Ward 4	2015	142	178	<10	0.57
CAPITAL CITY PCS-MS	182	Ward 4	2016	150	175	<10	0.55
CAPITAL CITY PCS-MS	182	Ward 4	2017	158	176	<10	0.53
CARLOS ROSARIO INTERNATIONAL PCS	1119	Ward 1	2015	<10	<10	<10	
CARLOS ROSARIO INTERNATIONAL PCS	1119	Ward 1	2016	<10	<10	<10	
CARLOS ROSARIO INTERNATIONAL PCS	1119	Ward 1	2017	<10	<10	<10	
CEDAR TREE ACADEMY PCS	188	Ward 8	2015	182	62	114	0.49
CEDAR TREE ACADEMY PCS	188	Ward 8	2016	168	66	155	0.57
CEDAR TREE ACADEMY PCS	188	Ward 8	2017	189	65	136	0.52
CENTER CITY PCS - BRIGHTWOOD	1103	Ward 4	2015	166	81	17	0.37
CENTER CITY PCS - BRIGHTWOOD	1103	Ward 4	2016	191	69	<10	0.29
CENTER CITY PCS - BRIGHTWOOD	1103	Ward 4	2017	202	44	<10	0.20
CENTER CITY PCS - CAPITOL HILL	1104	Ward 6	2015	112	129	34	0.59
CENTER CITY PCS - CAPITOL HILL	1104	Ward 6	2016	117	114	50	0.58
CENTER CITY PCS - CAPITOL HILL	1104	Ward 6	2017	133	108	42	0.53
CENTER CITY PCS - CONGRESS HEIGHTS	1105	Ward 8	2015	167	69	35	0.38
CENTER CITY PCS - CONGRESS HEIGHTS	1105	Ward 8	2016	147	91	27	0.45
CENTER CITY PCS - CONGRESS HEIGHTS	1105	Ward 8	2017	153	89	25	0.43
CENTER CITY PCS - PETWORTH	1106	Ward 4	2015	181	70	20	0.33
CENTER CITY PCS - PETWORTH	1106	Ward 4	2016	164	73	19	0.36
CENTER CITY PCS - PETWORTH	1106	Ward 4	2017	180	54	19	0.29

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
CENTER CITY PCS - SHAW	1107	Ward 6	2015	150	85	31	0.44
CENTER CITY PCS - SHAW	1107	Ward 6	2016	143	91	24	0.45
CENTER CITY PCS - SHAW	1107	Ward 6	2017	163	73	15	0.35
CENTER CITY PCS - TRINIDAD	1108	Ward 5	2015	125	80	42	0.49
CENTER CITY PCS - TRINIDAD	1108	Ward 5	2016	96	86	53	0.59
CENTER CITY PCS - TRINIDAD	1108	Ward 5	2017	95	107	39	0.61
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CAPITOL HILL	153	Ward 6	2015	150	168	18	0.55
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CAPITOL HILL	153	Ward 6	2016	205	104	40	0.41
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CAPITOL HILL	153	Ward 6	2017	193	66	31	0.33
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CHAVEZ PREP	127	Ward 1	2015	159	161	41	0.56
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CHAVEZ PREP	127	Ward 1	2016	144	129	47	0.55
CESAR CHAVEZ PCS FOR PUBLIC POLICY - CHAVEZ PREP	127	Ward 1	2017	135	159	57	0.62
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE HS	109	Ward 7	2015	212	132	18	0.41
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE HS	109	Ward 7	2016	211	137	35	0.45
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE HS	109	Ward 7	2017	234	133	37	0.42
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE MS	102	Ward 7	2015	167	126	20	0.47
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE MS	102	Ward 7	2016	152	117	28	0.49
CESAR CHAVEZ PCS FOR PUBLIC POLICY - PARKSIDE MS	102	Ward 7	2017	136	121	25	0.52
CITY ARTS & PREP PCS	210	Ward 5	2015	234	181	93	0.54
CITY ARTS & PREP PCS	210	Ward 5	2016	277	195	97	0.51
CITY ARTS & PREP PCS	210	Ward 5	2017	322	143	71	0.40

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
CREATIVE MINDS INTERNATIONAL PCS	3069	Ward 5	2015	162	22	11	0.17
CREATIVE MINDS INTERNATIONAL PCS	3069	Ward 5	2016	208	77	<10	0.29
CREATIVE MINDS INTERNATIONAL PCS	3069	Ward 5	2017	278	107	17	0.31
DC BILINGUAL PCS	199	Ward 5	2015	232	108	60	0.42
DC BILINGUAL PCS	199	Ward 5	2016	297	67	26	0.24
DC BILINGUAL PCS	199	Ward 5	2017	353	51	15	0.16
DC PREP PCS - ANACOSTIA CAMPUS	276	Ward 8	2015	<10	59	<10	1.00
DC PREP PCS - ANACOSTIA CAMPUS	276	Ward 8	2016	96	42	30	0.43
DC PREP PCS - ANACOSTIA CAMPUS	276	Ward 8	2017	151	69	36	0.41
DC PREP PCS- BENNING ES	1110	Ward 7	2015	315	45	95	0.31
DC PREP PCS- BENNING ES	1110	Ward 7	2016	309	55	109	0.35
DC PREP PCS- BENNING ES	1110	Ward 7	2017	326	55	102	0.33
DC PREP PCS- EDGEWOOD ES	130	Ward 5	2015	299	49	103	0.34
DC PREP PCS- EDGEWOOD ES	130	Ward 5	2016	331	24	87	0.25
DC PREP PCS- EDGEWOOD ES	130	Ward 5	2017	313	56	100	0.33
DC PREP PCS- EDGEWOOD MS	196	Ward 5	2015	152	152	20	0.53
DC PREP PCS- EDGEWOOD MS	196	Ward 5	2016	175	152	13	0.49
DC PREP PCS- EDGEWOOD MS	196	Ward 5	2017	158	174	34	0.57
DC PREP. PCS- BENNING MS	218	Ward 7	2015	59	162	11	0.75
DC PREP. PCS- BENNING MS	218	Ward 7	2016	126	154	19	0.58
DC PREP. PCS- BENNING MS	218	Ward 7	2017	173	162	22	0.52
DC SCHOLARS PCS	3070	Ward 7	2015	269	86	54	0.34
DC SCHOLARS PCS	3070	Ward 7	2016	306	126	52	0.37
DC SCHOLARS PCS	3070	Ward 7	2017	354	100	83	0.34
DEMOCRACY PREP CONGRESS HEIGHTS PCS	234	Ward 8	2015	234	283	217	0.68
DEMOCRACY PREP CONGRESS HEIGHTS PCS	234	Ward 8	2016	319	247	162	0.56
DEMOCRACY PREP CONGRESS HEIGHTS PCS	234	Ward 8	2017	374	230	156	0.51
DISTRICT OF COLUMBIA INTERNATIONAL SCHOOL	248	Ward 1	2015	193	209	<10	0.52
DISTRICT OF COLUMBIA INTERNATIONAL SCHOOL	248	Ward 1	2016	274	240	10	0.48
DISTRICT OF COLUMBIA INTERNATIONAL SCHOOL	248	Ward 1	2017	378	426	<10	0.53
E.L. HAYNES PCS GEORGIA AVENUE - MS	146	Ward 1	2015	181	191	<10	0.52
E.L. HAYNES PCS GEORGIA AVENUE - MS	146	Ward 1	2016	183	163	12	0.49
E.L. HAYNES PCS GEORGIA AVENUE - MS	146	Ward 1	2017	174	179	18	0.53

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
E.L. HAYNES PCS KANSAS AVENUE - ES	1206	Ward 4	2015	242	44	89	0.35
E.L. HAYNES PCS KANSAS AVENUE - ES	1206	Ward 4	2016	250	49	59	0.30
E.L. HAYNES PCS KANSAS AVENUE - ES	1206	Ward 4	2017	252	52	78	0.34
E.L. HAYNES PCS KANSAS AVENUE - HS	1138	Ward 4	2015	233	110	<10	0.34
E.L. HAYNES PCS KANSAS AVENUE - HS	1138	Ward 4	2016	275	125	<10	0.33
E.L. HAYNES PCS KANSAS AVENUE - HS	1138	Ward 4	2017	276	154	25	0.39
EAGLE ACADEMY PCS - CAPITOL RIVERFRONT	1125	Ward 6	2015	93	18	33	0.35
EAGLE ACADEMY PCS - CAPITOL RIVERFRONT	1125	Ward 6	2016	79	30	40	0.47
EAGLE ACADEMY PCS - CAPITOL RIVERFRONT	1125	Ward 6	2017	96	30	37	0.41
EAGLE ACADEMY PCS - CONGRESS HEIGHTS	195	Ward 8	2015	530	99	170	0.34
EAGLE ACADEMY PCS - CONGRESS HEIGHTS	195	Ward 8	2016	506	103	199	0.37
EAGLE ACADEMY PCS - CONGRESS HEIGHTS	195	Ward 8	2017	506	157	159	0.38
EARLY CHILDHOOD ACADEMY PCS	138	Ward 8	2015	157	52	59	0.41
EARLY CHILDHOOD ACADEMY PCS	138	Ward 8	2016	145	41	74	0.44
EARLY CHILDHOOD ACADEMY PCS	138	Ward 8	2017	143	52	62	0.44
ELSIE WHITLOW STOKES COMMUNITY FREEDOM PCS	159	Ward 5	2015	287	15	<10	0.07
ELSIE WHITLOW STOKES COMMUNITY FREEDOM PCS	159	Ward 5	2016	289	30	<10	0.11
ELSIE WHITLOW STOKES COMMUNITY FREEDOM PCS	159	Ward 5	2017	290	29	<10	0.10
EXCEL ACADEMY PCS	1113	Ward 8	2015	408	243	100	0.46
EXCEL ACADEMY PCS	1113	Ward 8	2016	463	186	145	0.42
EXCEL ACADEMY PCS	1113	Ward 8	2017	409	172	137	0.43
FRIENDSHIP PCS - ARMSTRONG	269	Ward 5	2015	<10	357	<10	1.00
FRIENDSHIP PCS - ARMSTRONG	269	Ward 5	2016	279	92	83	0.39
FRIENDSHIP PCS - ARMSTRONG	269	Ward 5	2017	269	65	84	0.36
FRIENDSHIP PCS - BLOW PIERCE ES	361	Ward 7	2015	254	72	82	0.38
FRIENDSHIP PCS - BLOW PIERCE ES	361	Ward 7	2016	242	68	116	0.43
FRIENDSHIP PCS - BLOW PIERCE ES	361	Ward 7	2017	241	83	112	0.45
FRIENDSHIP PCS - BLOW-PIERCE MS	362	Ward 7	2015	85	71	16	0.51
FRIENDSHIP PCS - BLOW-PIERCE MS	362	Ward 7	2016	79	130	11	0.64
FRIENDSHIP PCS - BLOW-PIERCE MS	362	Ward 7	2017	107	135	26	0.60

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
FRIENDSHIP PCS - CHAMBERLAIN ES	363	Ward 6	2015	229	69	107	0.43
FRIENDSHIP PCS - CHAMBERLAIN ES	363	Ward 6	2016	223	92	101	0.46
FRIENDSHIP PCS - CHAMBERLAIN ES	363	Ward 6	2017	261	59	92	0.37
FRIENDSHIP PCS - CHAMBERLAIN MS	364	Ward 6	2015	161	150	24	0.52
FRIENDSHIP PCS - CHAMBERLAIN MS	364	Ward 6	2016	159	158	18	0.53
FRIENDSHIP PCS - CHAMBERLAIN MS	364	Ward 6	2017	173	150	14	0.49
FRIENDSHIP PCS - COLLEGIATE ACADEMY	186	Ward 7	2015	535	225	31	0.32
FRIENDSHIP PCS - COLLEGIATE ACADEMY	186	Ward 7	2016	471	230	45	0.37
FRIENDSHIP PCS - COLLEGIATE ACADEMY	186	Ward 7	2017	441	241	57	0.40
FRIENDSHIP PCS - ONLINE	268	Ward 4	2015	<10	123	<10	1.00
FRIENDSHIP PCS - ONLINE	268	Ward 4	2016	51	93	20	0.69
FRIENDSHIP PCS - ONLINE	268	Ward 4	2017	62	117	15	0.68
FRIENDSHIP PCS - SOUTHEAST ACADEMY	113	Ward 8	2015	413	51	46	0.19
FRIENDSHIP PCS - SOUTHEAST ACADEMY	113	Ward 8	2016	376	104	61	0.30
FRIENDSHIP PCS - SOUTHEAST ACADEMY	113	Ward 8	2017	418	84	40	0.23
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY HIGH	1164	Ward 8	2015	<10	<10	<10	
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY HIGH	1164	Ward 8	2016	<10	222	<10	1.00
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY HIGH	1164	Ward 8	2017	150	103	17	0.44
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY MIDDLE	1124	Ward 8	2015	329	202	25	0.41
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY MIDDLE	1124	Ward 8	2016	173	83	187	0.61
FRIENDSHIP PCS - TECHNOLOGY PREPARATORY MIDDLE	1124	Ward 8	2017	146	109	31	0.49
FRIENDSHIP PCS - WOODRIDGE ES	365	Ward 5	2015	198	40	55	0.32
FRIENDSHIP PCS - WOODRIDGE ES	365	Ward 5	2016	197	64	59	0.38
FRIENDSHIP PCS - WOODRIDGE ES	365	Ward 5	2017	201	47	69	0.37
FRIENDSHIP PCS - WOODRIDGE MS	366	Ward 5	2015	80	96	<10	0.56
FRIENDSHIP PCS - WOODRIDGE MS	366	Ward 5	2016	91	107	<10	0.56
FRIENDSHIP PCS - WOODRIDGE MS	366	Ward 5	2017	106	112	<10	0.53
GOODWILL EXCEL CENTER PCS	297	Ward 2	2015	<10	<10	<10	1.00
GOODWILL EXCEL CENTER PCS	297	Ward 2	2016	<10	282	<10	1.00
GOODWILL EXCEL CENTER PCS	297	Ward 2	2017	<10	330	<10	1.00

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
HARMONY DC PCS-SCHOOL OF EXCELLENCE	245	Ward 5	2015	36	66	16	0.69
HARMONY DC PCS-SCHOOL OF EXCELLENCE	245	Ward 5	2016	57	39	29	0.54
HARMONY DC PCS-SCHOOL OF EXCELLENCE	245	Ward 5	2017	40	54	33	0.69
HOPE COMMUNITY PCS - LAMOND	131	Ward 4	2015	188	82	83	0.47
HOPE COMMUNITY PCS - LAMOND	131	Ward 4	2016	205	59	59	0.37
HOPE COMMUNITY PCS - LAMOND	131	Ward 4	2017	187	61	58	0.39
HOPE COMMUNITY PCS - TOLSON	114	Ward 5	2015	352	125	28	0.30
HOPE COMMUNITY PCS - TOLSON	114	Ward 5	2016	367	122	36	0.30
HOPE COMMUNITY PCS - TOLSON	114	Ward 5	2017	340	101	88	0.36
HOWARD UNIVERSITY MIDDLE SCHOOL OF MATHEMATICS AND SCIENCE PCS	115	Ward 1	2015	114	139	47	0.62
HOWARD UNIVERSITY MIDDLE SCHOOL OF MATHEMATICS AND SCIENCE PCS	115	Ward 1	2016	149	128	19	0.50
HOWARD UNIVERSITY MIDDLE SCHOOL OF MATHEMATICS AND SCIENCE PCS	115	Ward 1	2017	166	112	30	0.46
IDEA PCS	163	Ward 7	2015	98	114	10	0.56
IDEA PCS	163	Ward 7	2016	121	105	25	0.52
IDEA PCS	163	Ward 7	2017	151	155	12	0.53
IDEAL ACADEMY PCS	134	Ward 4	2015	160	88	44	0.45
IDEAL ACADEMY PCS	134	Ward 4	2016	122	150	52	0.62
IDEAL ACADEMY PCS	134	Ward 4	2017	149	118	35	0.51
INGENUITY PREP PCS	200	Ward 8	2015	132	76	23	0.43
INGENUITY PREP PCS	200	Ward 8	2016	209	100	37	0.40
INGENUITY PREP PCS	200	Ward 8	2017	284	137	51	0.40
INSPIRED TEACHING DEMONSTRATION PCS	3064	Ward 5	2015	242	76	26	0.30
INSPIRED TEACHING DEMONSTRATION PCS	3064	Ward 5	2016	304	66	21	0.22
INSPIRED TEACHING DEMONSTRATION PCS	3064	Ward 5	2017	336	67	23	0.21
KINGSMAN ACADEMY PCS	267	Ward 6	2015	<10	163	<10	0.99
KINGSMAN ACADEMY PCS	267	Ward 6	2016	68	77	13	0.57
KINGSMAN ACADEMY PCS	267	Ward 6	2017	82	152	18	0.67
KIPP DC PCS AIM ACADEMY	116	Ward 8	2015	139	193	22	0.61
KIPP DC PCS AIM ACADEMY	116	Ward 8	2016	137	235	14	0.65
KIPP DC PCS AIM ACADEMY	116	Ward 8	2017	149	229	21	0.63
KIPP DC PCS ARTS & TECHNOLOGY ACADEMY	236	Ward 7	2015	106	39	84	0.54
KIPP DC PCS ARTS & TECHNOLOGY ACADEMY	236	Ward 7	2016	119	49	95	0.55
KIPP DC PCS ARTS & TECHNOLOGY ACADEMY	236	Ward 7	2017	163	55	98	0.48

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
KIPP DC PCS COLLEGE PREP ACADEMY	1123	Ward 5	2015	254	174	17	0.43
KIPP DC PCS COLLEGE PREP ACADEMY	1123	Ward 5	2016	321	251	27	0.46
KIPP DC PCS COLLEGE PREP ACADEMY	1123	Ward 5	2017	430	283	43	0.43
KIPP DC PCS CONNECT ACADEMY	209	Ward 5	2015	173	34	112	0.46
KIPP DC PCS CONNECT ACADEMY	209	Ward 5	2016	183	31	115	0.44
KIPP DC PCS CONNECT ACADEMY	209	Ward 5	2017	183	32	125	0.46
KIPP DC PCS DISCOVER ACADEMY	1122	Ward 8	2015	182	57	130	0.51
KIPP DC PCS DISCOVER ACADEMY	1122	Ward 8	2016	192	50	130	0.48
KIPP DC PCS DISCOVER ACADEMY	1122	Ward 8	2017	195	49	152	0.51
KIPP DC PCS GROW ACADEMY	1129	Ward 6	2015	175	30	115	0.45
KIPP DC PCS GROW ACADEMY	1129	Ward 6	2016	193	27	112	0.42
KIPP DC PCS GROW ACADEMY	1129	Ward 6	2017	165	48	147	0.54
KIPP DC PCS HEIGHTS ACADEMY	3071	Ward 8	2015	281	132	102	0.45
KIPP DC PCS HEIGHTS ACADEMY	3071	Ward 8	2016	289	147	116	0.48
KIPP DC PCS HEIGHTS ACADEMY	3071	Ward 8	2017	304	157	121	0.48
KIPP DC PCS KEY ACADEMY	189	Ward 7	2015	141	195	17	0.60
KIPP DC PCS KEY ACADEMY	189	Ward 7	2016	157	174	<10	0.53
KIPP DC PCS KEY ACADEMY	189	Ward 7	2017	140	198	14	0.60
KIPP DC PCS LEAD ACADEMY	190	Ward 6	2015	268	153	18	0.39
KIPP DC PCS LEAD ACADEMY	190	Ward 6	2016	283	134	125	0.48
KIPP DC PCS LEAD ACADEMY	190	Ward 6	2017	269	136	122	0.49
KIPP DC PCS LEAP ACADEMY	132	Ward 7	2015	89	<10	181	0.68
KIPP DC PCS LEAP ACADEMY	132	Ward 7	2016	93	<10	111	0.55
KIPP DC PCS LEAP ACADEMY	132	Ward 7	2017	95	<10	92	0.50
KIPP DC PCS NORTHEAST ACADEMY	242	Ward 5	2015	57	172	<10	0.76
KIPP DC PCS NORTHEAST ACADEMY	242	Ward 5	2016	149	177	11	0.56
KIPP DC PCS NORTHEAST ACADEMY	242	Ward 5	2017	154	176	<10	0.55
KIPP DC PCS PROMISE ACADEMY	1121	Ward 7	2015	273	232	106	0.55
KIPP DC PCS PROMISE ACADEMY	1121	Ward 7	2016	365	155	124	0.43
KIPP DC PCS PROMISE ACADEMY	1121	Ward 7	2017	373	147	121	0.42
KIPP DC PCS QUEST ACADEMY	237	Ward 7	2015	150	168	73	0.62
KIPP DC PCS QUEST ACADEMY	237	Ward 7	2016	195	169	97	0.58
KIPP DC PCS QUEST ACADEMY	237	Ward 7	2017	216	175	127	0.58

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
KIPP DC PCS SPRING ACADEMY	214	Ward 5	2015	89	119	<10	0.58
KIPP DC PCS SPRING ACADEMY	214	Ward 5	2016	184	146	15	0.47
KIPP DC PCS SPRING ACADEMY	214	Ward 5	2017	262	148	<10	0.43
KIPP DC PCS VALOR ACADEMY	243	Ward 7	2015	<10	119	<10	1.00
KIPP DC PCS VALOR ACADEMY	243	Ward 7	2016	38	184	<10	0.83
KIPP DC PCS VALOR ACADEMY	243	Ward 7	2017	99	208	20	0.70
KIPP DC PCS WILL ACADEMY	121	Ward 6	2015	169	129	19	0.47
KIPP DC PCS WILL ACADEMY	121	Ward 6	2016	139	208	14	0.61
KIPP DC PCS WILL ACADEMY	121	Ward 6	2017	124	197	30	0.65
LATIN AMERICAN MONTESSORI BILINGUAL PCS	193	Ward 4	2015	298	11	12	0.07
LATIN AMERICAN MONTESSORI BILINGUAL PCS	193	Ward 4	2016	316	29	<10	0.10
LATIN AMERICAN MONTESSORI BILINGUAL PCS	193	Ward 4	2017	368	11	12	0.06
LAYC CAREER ACADEMY PCS	104	Ward 1	2015	<10	68	<10	1.00
LAYC CAREER ACADEMY PCS	104	Ward 1	2016	14	59	<10	0.81
LAYC CAREER ACADEMY PCS	104	Ward 1	2017	<10	<10	<10	1.00
LEE MONTESSORI PCS	228	Ward 5	2015	46	16	11	0.37
LEE MONTESSORI PCS	228	Ward 5	2016	74	20	15	0.32
LEE MONTESSORI PCS	228	Ward 5	2017	115	18	17	0.23
MARY MCLEOD BETHUNE PCS	135	Ward 5	2015	250	100	43	0.36
MARY MCLEOD BETHUNE PCS	135	Ward 5	2016	261	79	52	0.33
MARY MCLEOD BETHUNE PCS	135	Ward 5	2017	272	101	36	0.33
MAYA ANGELOU PCS - HS	101	Ward 7	2015	50	24	10	0.40
MAYA ANGELOU PCS - HS	101	Ward 7	2016	55	92	10	0.65
MAYA ANGELOU PCS - HS	101	Ward 7	2017	54	107	14	0.69

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
MERIDIAN PCS	165	Ward 1	2015	425	205	69	0.39
MERIDIAN PCS	165	Ward 1	2016	464	151	96	0.35
MERIDIAN PCS	165	Ward 1	2017	432	145	93	0.36
MONUMENT ACADEMY PCS	260	Ward 6	2015	<10	34	<10	1.00
MONUMENT ACADEMY PCS	260	Ward 6	2016	<10	70	<10	1.00
MONUMENT ACADEMY PCS	260	Ward 6	2017	46	70	<10	0.62
MUNDO VERDE BILINGUAL PCS	3065	Ward 5	2015	366	115	10	0.25
MUNDO VERDE BILINGUAL PCS	3065	Ward 5	2016	486	39	31	0.13
MUNDO VERDE BILINGUAL PCS	3065	Ward 5	2017	445	98	25	0.22
NATIONAL COLLEGIATE PREPARATORY PCHS	1120	Ward 8	2015	161	90	18	0.40
NATIONAL COLLEGIATE PREPARATORY PCHS	1120	Ward 8	2016	124	115	34	0.55
NATIONAL COLLEGIATE PREPARATORY PCHS	1120	Ward 8	2017	146	131	25	0.52
PAUL PCS - INTERNATIONAL HS	222	Ward 4	2015	234	150	18	0.42
PAUL PCS - INTERNATIONAL HS	222	Ward 4	2016	258	193	26	0.46
PAUL PCS - INTERNATIONAL HS	222	Ward 4	2017	301	179	37	0.42
PAUL PCS - MS	170	Ward 4	2015	139	80	28	0.44
PAUL PCS - MS	170	Ward 4	2016	105	130	<10	0.57
PAUL PCS - MS	170	Ward 4	2017	107	121	20	0.57
PERRY STREET PREPARATORY PCS	161	Ward 5	2015	177	102	160	0.60
PERRY STREET PREPARATORY PCS	161	Ward 5	2016	161	120	61	0.53
PERRY STREET PREPARATORY PCS	161	Ward 5	2017	220	80	37	0.35
RICHARD WRIGHT PCS FOR JOURNALISM AND MEDIA ARTS	3067	Ward 6	2015	151	103	<10	0.43
RICHARD WRIGHT PCS FOR JOURNALISM AND MEDIA ARTS	3067	Ward 6	2016	156	115	21	0.47
RICHARD WRIGHT PCS FOR JOURNALISM AND MEDIA ARTS	3067	Ward 6	2017	182	100	16	0.39
ROCKETSHIP DC PCS	286	Ward 8	2015	<10	<10	<10	
ROCKETSHIP DC PCS	286	Ward 8	2016	<10	343	<10	1.00
ROCKETSHIP DC PCS	286	Ward 8	2017	297	145	85	0.44
ROOTS PCS	173	Ward 4	2015	42	37	13	0.54
ROOTS PCS	173	Ward 4	2016	45	43	23	0.59
ROOTS PCS	173	Ward 4	2017	83	16	11	0.25

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
SEED PCS	174	Ward 7	2015	220	118	21	0.39
SEED PCS	174	Ward 7	2016	205	142	21	0.44
SEED PCS	174	Ward 7	2017	209	154	44	0.49
SELA PCS	197	Ward 4	2015	52	43	18	0.54
SELA PCS	197	Ward 4	2016	98	38	16	0.36
SELA PCS	197	Ward 4	2017	135	28	15	0.24
SHINING STARS MONTESSORI ACADEMY PCS	3066	Ward 5	2015	48	56	12	0.59
SHINING STARS MONTESSORI ACADEMY PCS	3066	Ward 5	2016	106	50	34	0.44
SHINING STARS MONTESSORI ACADEMY PCS	3066	Ward 5	2017	148	61	30	0.38
SOMERSET PREPARATORY ACADEMY PCS	187	Ward 8	2015	108	157	37	0.64
SOMERSET PREPARATORY ACADEMY PCS	187	Ward 8	2016	158	155	22	0.53
SOMERSET PREPARATORY ACADEMY PCS	187	Ward 8	2017	196	179	32	0.52
ST. COLETTA SPECIAL EDUCATION PCS	1047	Ward 7	2015	<10	248	<10	1.00
ST. COLETTA SPECIAL EDUCATION PCS	1047	Ward 7	2016	130	45	<10	0.26
ST. COLETTA SPECIAL EDUCATION PCS	1047	Ward 7	2017	123	52	<10	0.32
THE CHILDREN'S GUILD DC PCS	255	Ward 5	2015	<10	313	<10	1.00
THE CHILDREN'S GUILD DC PCS	255	Ward 5	2016	122	215	89	0.71
THE CHILDREN'S GUILD DC PCS	255	Ward 5	2017	203	172	59	0.53
THE NEXT STEP EL PROXIMO PASO PCS	168	Ward 1	2015	<10	<10	<10	
THE NEXT STEP EL PROXIMO PASO PCS	168	Ward 1	2016	<10	<10	<10	
THE NEXT STEP EL PROXIMO PASO PCS	168	Ward 1	2017	<10	<10	<10	
THURGOOD MARSHALL ACADEMY PCS	191	Ward 8	2015	189	123	18	0.43
THURGOOD MARSHALL ACADEMY PCS	191	Ward 8	2016	211	125	26	0.42
THURGOOD MARSHALL ACADEMY PCS	191	Ward 8	2017	218	165	29	0.47
TWO RIVERS PCS-4TH STREET	198	Ward 6	2015	383	102	23	0.25
TWO RIVERS PCS-4TH STREET	198	Ward 6	2016	368	118	34	0.29
TWO RIVERS PCS-4TH STREET	198	Ward 6	2017	378	114	32	0.28
TWO RIVERS PCS-YOUNG	270	Ward 5	2015	<10	128	<10	1.00
TWO RIVERS PCS-YOUNG	270	Ward 5	2016	141	44	15	0.30
TWO RIVERS PCS-YOUNG	270	Ward 5	2017	192	54	17	0.27

TABLE 7 (CONTINUED)

Mobility Measures for PCS Schools 2015/16 to 2017/18: By School and Year

School Name	School Code	Ward	Year	Total Stayer	Total Inflow	Total Outflow	Mobility Ratio
WASHINGTON GLOBAL PCS	263	Ward 6	2015	<10	97	<10	1.00
WASHINGTON GLOBAL PCS	263	Ward 6	2016	82	90	12	0.55
WASHINGTON GLOBAL PCS	263	Ward 6	2017	84	112	24	0.62
WASHINGTON LATIN PCS - HIGH SCHOOL	1118	Ward 4	2015	221	84	<10	0.28
WASHINGTON LATIN PCS - HIGH SCHOOL	1118	Ward 4	2016	237	93	<10	0.29
WASHINGTON LATIN PCS - HIGH SCHOOL	1118	Ward 4	2017	239	92	<10	0.29
WASHINGTON LATIN PCS - MS	125	Ward 4	2015	168	186	<10	0.53
WASHINGTON LATIN PCS - MS	125	Ward 4	2016	171	188	<10	0.53
WASHINGTON LATIN PCS - MS	125	Ward 4	2017	177	190	<10	0.52
WASHINGTON LEADERSHIP ACADEMY	283	Ward 5	2015	<10	<10	<10	
WASHINGTON LEADERSHIP ACADEMY	283	Ward 5	2016	<10	100	<10	1.00
WASHINGTON LEADERSHIP ACADEMY	283	Ward 5	2017	89	115	<10	0.57
WASHINGTON MATHEMATICS SCIENCE TECHNOLOGY PCHS	178	Ward 5	2015	163	113	17	0.44
WASHINGTON MATHEMATICS SCIENCE TECHNOLOGY PCHS	178	Ward 5	2016	165	115	26	0.46
WASHINGTON MATHEMATICS SCIENCE TECHNOLOGY PCHS	178	Ward 5	2017	147	81	38	0.45
WASHINGTON YU YING PCS	1117	Ward 5	2015	442	52	<10	0.12
WASHINGTON YU YING PCS	1117	Ward 5	2016	484	35	<10	0.08
WASHINGTON YU YING PCS	1117	Ward 5	2017	502	29	<10	0.06

About ODCA

The mission of the Office of the District of Columbia Auditor (ODCA) is to support the Council of the District of Columbia by making sound recommendations that improve the effectiveness, efficiency, and accountability of the District government.

To fulfill our mission, we conduct performance audits, non-audit reviews, and revenue certifications. The residents of the District of Columbia are one of our primary customers and we strive to keep the residents of the District of Columbia informed on how their government is operating and how their tax money is being spent.

Office of the District of Columbia Auditor
717 14th Street N.W.
Suite 900
Washington, DC 20005

Call us: 202-727-3600
Email us: odca.mail@dc.gov
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