CHAPTER 03

03 FUTURE STATE OF DC PUBLIC SCHOOLS

3.1 CAPITAL IMPROVEMENTS PLANNING

The District of Columbia's Capital Improvements Plan (CIP) is a six-year plan for preparing, financing, acquiring and implementing permanent improvement projects for the District's fixed assets. This section summaries the current Capital Improvements Plan (FY2019-FY2024) which was signed into law by the Mayor (and the Office of the Chief Financial Officer) on July 10, 2018 and went into effect on October 1, 2018. Understanding the DCPS school facility investments that have already been programmed for the next five years is an important input to assessing facility needs during the second half of the MFP planning period.

The FY2019-FY2024 CIP calls for investment of $1.6 billion in 32 modernization projects involving DCPS elementary, middle, and high school facilities. Facility modernizations are structured in three-year cycles: design is carried out in Year 1, while construction is programmed for Year 2 and Year 3. Some of the projects in the FY2019-FY2024 CIP will be carried over from the FY2018-FY2023 CIP; others will be initiated and constructed during the FY2019-FY2024 CIP; and others still will be initiated with a planning and/or design phase and will carry over into future CIPs. Appendix A.14 presents the investment cost breakdown of this CIP by project, grade band, ward and year. **Figure 3.1** below shows the investment costs by year.

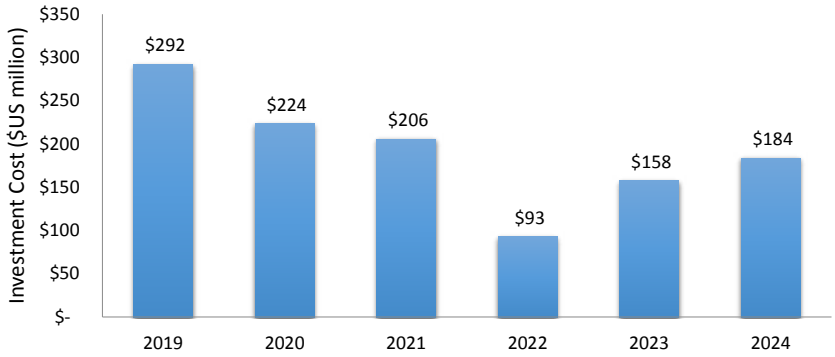


Figure 3.1 FY2019–FY2024 CIP Investment Costs by Year
Source: FY2019-FY2024 CIP

Figure 3.2 shows the investment by ward. Wards 1, 4, 6 and 7 will receive the largest share of funding under the FY2019-FY2024 CIP. As shown in **Figure 3.3**, about half of all investment will be in elementary schools, with the remainder divided fairly equally among middle schools, high schools and education campuses.

With the passage of the PACE Act of 2016,[1] the methodology for prioritizing modernizations was changed. The data-driven PACE methodology is based on clear selection criteria for inclusion and prioritization of facilities to be modernized. Four school facilities in the FY2019-FY2024 CIP were prioritized for modernization using the PACE methodology. The modernization prioritization that was developed utilizing the PACE methodology can be found in Appendix A.15.

The PACE Act also required the preparation of 10-year Master Facilities Plans to evaluate and respond to the school facility needs of LEAs in Washington, DC. (Previously, the MFP planning period was five years.) This Master Facilities Plan 2018 was prepared in satisfaction of the PACE Act requirement.

[1] Planning Actively for Education Facilities Amendment Act of 2016, District of Columbia Code 38-2803.

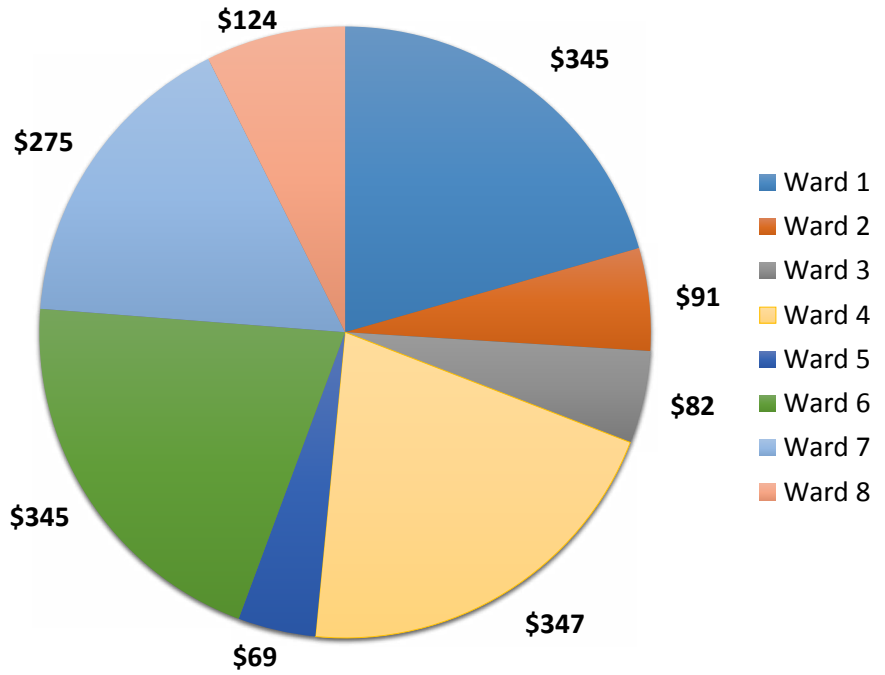


Figure 3.2 Investment by Ward under the FY2019-FY2024 CIP ($US million)
The figure includes a $10 million investment in an early childhood education center in Ward 2.
Total investment includes estimated total project costs for modernizations continuing construction past FY2019-FY2024 CIP.
Source: FY2019-FY2024 CIP, DCPS School Facility CIP FY2019-FY2024, AECOM, 2018

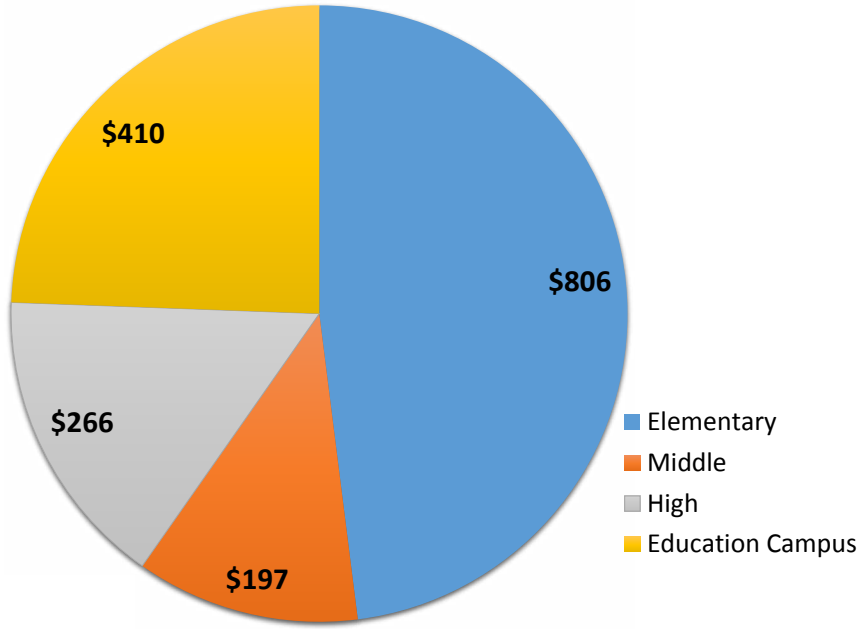


Figure 3.3 Investment by Grade Band under the FY2019-FY2024 CIP ($US million)
The figure includes a $10 million investment in an early childhood education center, under the 'Elementary' category.
Grade bands as of SY2017-18.
Total investment includes estimated total project costs for modernizations continuing construction past FY2019-FY2024 CIP.
Source: FY2019-FY2024 CIP, DCPS School Facility CIP FY2019-FY2024

Table 3.1 PACE Modernization Prioritization Criteria

CATEGORY	CATEGORY TOTAL	SUBCATEGORY	SUBCATEGORY WEIGHT
Facility Condition	55%	Date and type of last major construction through the preceding fiscal year	20%
		Expenditures for major construction projects for the preceding 10 fiscal years per square foot of the school facility	15%
		School facility condition score based on the most recent assessment completed by the Department of General Services	20%
Demand	20%	Average percentage of the school's enrollment growth over the past five school years based on audited enrollment	10%
		Average percent of facility's building utilization over the past five school years	10%
Community Need	10%	Number of in-boundary children who would be served by the facility's educational program divided by the facility's capacity	5%
		Projected percent change in the number of children who would be served by the facility's educational program in the neighborhood cluster over a prospective six-year time period	5%
Equity	15%	Total number of square feet in the school's feeder pattern that have had a major construction in the preceding 10 fiscal years divided by total square footage of the feeder pattern	5%
		Number of at-risk students enrolled in the school based on the current school year enrollment projection	10%

Source: District of Columbia Code 38-2803 - Planning Actively for Comprehensive Education Facilities Amendment Act of 2016.

3.2 EDUCATION FACILITY FINANCING

The methods for financing school facilities differ for DCPS and public charter schools. Both DCPS and PCS LEAs receive instructional funding through the Uniform per Student Funding Formula (UPSFF), which bases funding on enrollment. Capital funding for facilities is allocated differently by sector: DCPS schools are in District-owned buildings that are maintained by the District Department of General Services (DGS), while public charter school LEAs are responsible for securing and maintaining their own facilities using an annual per-student facilities allowance.

DCPS Facility Funding

DCPS schools occupy District-owned and controlled property, and do not pay rent, though they do pay for maintenance, such as custodian services and utilities. DGS centrally manages repairs and renovations to the District-owned DCPS schools, as well as to many other District assets. Funding for construction and renovation are budgeted for in the DCPS capital budget, which is reworked every year with the capital budget for the entire District. The amount submitted in the budget is guided by the Capital Improvements Plan (CIP), a six-year plan for capital construction, including DCPS school facilities, with specific projects listed along with their funding and construction schedule. (See Section 3.1 for more information about the CIP.) The CIP typically includes modernization and replacements, small capital projects, and system and component replacements. As with those of other District agencies, DCPS' capital budget is largely financed with borrowing through general obligation municipal bonds issued by District government.

Public Charter School Funding

Public charter schools are responsible for securing and maintaining their own buildings relying on their facility allowance provided through the annual UPSFF (described below). Public charter LEAs can lease or purchase buildings from a private entity; in addition, the District has made vacant school buildings available to charter schools for short-term or long-term leases. (Previously the District allowed public charters to purchase District buildings, but that now happens infrequently.) As of SY2017-18, public charter schools leased 31 District-owned buildings and owned nine former District school facilities.

Charter LEAs receive a per-pupil allowance for funding facilities, which can be used for school building acquisition, leasing, renovation, and expansion. This is part of the annual UPSFF process (DC code 38-1804.01). As of FY2019, public charter schools are provided $3,263 per student each year, and funding is provided to public charter schools in three annual payments, ending with reconciliation against audited student enrollment. DC code 38–2908 provides an annual 2.2% increase to the facility allowance until FY21. Public charter schools that do not use all of their facility allowance on facility expenses are allowed to use those funds for other purposes. In contrast, if a charter school has facility expenses that exceed the per-pupil allowance in a given year, it may need to use other sources — such as private funding or its instructional portion of the UPSFF operating funds — to meet these needs. In FY19, public charter schools are budgeted to receive approximately $149 million from the District in facility allowance.

According to the Fiscal Year 2017 DC Public Charter School Board Fiscal Analysis Report, the local facilities funding that public charter schools received in 2017 accounted for 15% of their total revenue per student, but occupancy expenses amounted to 16% of the total revenue. The report further notes that some charter schools spend as much as 30% of their revenue on occupancy expenses.[2] The evidence suggests that the facility allowance is not sufficient to cover costs. Collecting data of actual facility costs incurred by all public schools would help to address this issues.

Public charter schools may request an adjustment to the annual facility payment received, provided that the request is submitted no later than April 1st of the fiscal year preceding the payment, which then must be approved by the Mayor and the District of Columbia Council.[3]

In addition, public charter schools that lease a school facility subject to property tax under the District Code can receive a rebate of a portion of that tax equal to the public charter school's pro rata share of the lessor's tax on the property.

The Office of State Superintendent of Education (OSSE), a State Education Agency, oversees all federal education programs and grants in the District of

[2] District Public Charter School Board FY 2017 Financial Analysis Report; accessed via https://www.Districtpcsb.org/report/school-finances
[3] Title 38 Section 1804.01 Code of the District of Columbia; accessed via https://code.Districtcouncil.us/District/council/code/titles/38/chapters/18/subchapters/IV/

Columbia. It distributes federal funding to DCPS and public charter schools and also monitors schools for compliance with federal guidelines. In the case of DCPS, federal funds from OSSE are passed on to the central office, which then makes allocations to individual schools in accordance with federal guidelines.

OSSE also houses the Office of Public Charter School Financing and Support (OPCSFS) which receives federal charter-specific funding. This includes the Credit Enhancement for Charter School Facilities Program, which provides grants to public agencies to enable charter schools to attain financing through enhancing the school's credit. It does not provide for direct funding of school facility acquisition, construction or renovation, but rather provides leverage through guarantee of debt or leases, assisting in finding financing, or providing incubator spaces. It also receives State Charter School Facilities Incentive Grants, a federal program that provides grants on a declining matching basis to states with per-pupil facilities aid programs for charter schools. Under this grant, the maximum federal share of facilities funds decreases each year (from 90% in the first year to 20% in year five) and phases out entirely after five years. The District of Columbia is one of five eligible state education agencies because of its charter facilities funding structure. Aside from the facility allowance, the OPCSFS also administers the following grant and loan opportunities for charter schools:

+ **Scholarships for Opportunity and Results (SOAR) Act Grant:** the SOAR grant is a federal funding program unique to the District of Columbia and provides grants to low-income students to attend public school, but also provides facility financing to improve DCPS and charter school facilities through the Facilities Grant. In FY17, $4 million was made available in facilities grants, which could only be used by "high-quality DC public charter schools" to renovate leased former District public schools or facilities owned by charter schools.
+ **Credit Enhancement Revolving Fund:** According to OSSE, the fund "provides enhanced credit, lease guarantees, and access to financial assistance to eligible public charter schools for the acquisition, renovation, and/or construction of school facilities." The program offers guarantees or collateral to enable charter schools to obtain affordable financing for facility projects.
+ **Direct Loan Fund:** Initially funded in 2013, the program aims to "structure and provide loans to District of Columbia public charter schools for the purpose of construction, acquisition, renovation, and/or maintenance of public charter school facilities." The loans are for a maximum of $2 million per school, and are often used as gap financing with other loans.
+ **Charter School Programs (Title V, Part B) grants:** According to OSSE, the federal Title V, Part B program provides funding for charter school planning and implementation, the study of charter school outcomes, and to encourage States to fund charter school facilities at the same level as traditional public schools. From a facilities perspective, the funds from the three grant types that fall under this umbrella may only be used for identification of appropriate facilities, not for the actual design, construction, financing (such as debt service or loan acquisition), or operation of the facility. This is the only program available directly to schools.
+ **Charter School Incubator Facility Initiative (CSII):** This program is a non-profit entity formed by a charter school education nonprofit Building Hope in partnership with OSSE. It provides financing for the establishment of incubator facilities in lower-income areas, to encourage the formation of charter schools there. The charter schools may lease space for one to three-years at below-market rates.

3.3 ENROLLMENT PROJECTIONS

Knowing the number of students who must be served by the District's public school facilities is a critical step in understanding the District's current and future facility needs. As such, the MFP integrates five-year and ten-year enrollment projections in the analysis of the future state. Typically, the District prepared one-year projections for budgeting purposes, and so moving toward consistently evaluating the number and location of potential students five and ten years in the future advances the city's proactive facility planning.

The MFP considered three components to estimate future space needs: baseline enrollment projections based on population growth and capture rates of schools for DCPS and capture rates of the sector for public charter schools; DCPS growth plans; and public charter school growth plans, as provided by individual public charter school LEAs. This section explains and quantifies each of these components, which form the basis for the gap analysis in Section 3.4.

3.3.1 Base Projections of Student Age Population

Projections are by their nature uncertain; the future is difficult to predict, and the projections analysis turns to past trends to predict future enrollment. While making projections of any data can be challenging, doing so for enrollment at the District's schools has particular challenges, including estimating population growth, a changing supply of schools and facilities, and school choice, which means that students in Washington, DC do not need to enroll in their in-boundary school. The District's school system is built upon by right neighborhood schools supplemented with choice. As illustrated in the historical enrollment data presented in section 2, District students and their parents exercise their opportunity to choose their school. Approximately 47% of students enrolled in public charter schools in SY2017-28, 26% enrolled at an in-boundary DCPS school, and another 27% enrolled at an out-of-boundary or other citywide or selective DCPS school. As noted, the element of choice, however, complicates the already challenging task of projecting enrollment. In addition to the challenges of choice, population growth, and a changing supply of schools and facilities, making projections at a smaller level of analysis (the school facility) versus District-wide, reduces the level of accuracy.

This MFP includes 5-year and 10-year projections by school for DCPS schools, and overall projections by sector and by grade band (Pre-K 3&4, elementary, middle, and high). While both sectors of the Washington, DC public school system also serve alternative and adult populations, this analysis focuses on meeting the needs of the students required to go to school by law. Though Pre-K grades are not compulsory, early childhood education has also been a focus in establishing good educational outcomes for District students. Recognizing this, the District has universal Pre-K, and DCPS is working to expand Pre-K offerings. It is included in the analysis for several reasons: it can assist in understanding trends in Pre-K enrollment, thereby informing the process of sizing elementary schools and can allow the District to assess overall compulsory elementary school enrollment for future years. Enrollment in adult and alternative educational facilities is added to the by-grade totals based on historical enrollment in those programs.

Nationally, many public school systems use a cohort survival method for projecting student enrollments, which essentially takes existing enrollment and moves groups of students forward through the school and school system as they progress in grade levels. DCPS uses this methodology for projecting the next year's enrollment for budgeting purposes. This process also involves adding additional students from outside, as necessary, to represent new students. For example, to project Elementary School A's third grade enrollment in SY2017-18, the analyst would take the number of students in the school's second grade and, based on historic trends, estimate that approximately 80% continue to the next grade in the same school. Using these same historical trends, an analyst can then estimate the additional enrollment that a school will receive from students outside of the current enrollment (for example, 10% of the population). That amount is added to the students retained from the previous year for a total third grade enrollment.

Because the MFP takes a longer view of facilities planning, a different methodology has been developed to account for population growth by geography and the ability of students to choose where they go to school. The analysis is geographically based, using historical enrollment trends by school, as well as the number of expected children by grade in the future.

Enrollment projections for the MFP use several methods, depending on the sector and level of detail. The process included the steps below, which are described in further detail in the following paragraphs:

1. Projecting the universe of school-age students in the District for SY2022-23 and SY2027-28
2. Projecting the enrollment at individual DCPS schools
3. Estimating total future District enrollment by grade level
4. Estimating potential enrollment in the PCS sector, using SY2017-18 enrollment shares

The MFP study also considers what each sector has described as their growth plans, which are evaluated in conjunction with the enrollment projections and will be explained in the next two sections.

Projecting Future School-Age District Residents

Before projecting the number of students attending public charter schools and DCPS schools, it is necessary to estimate the universe of total potential students in the District. Student age population projections for the MFP are based on population projections by single age produced by the District Office of Planning (OP) for all 46 neighborhood clusters in the District for 2015, 2020, 2025, and 2030. The OP used the U.S. Census Population Estimates Program as a basis for its estimates, and used the cohort-component method to forecast future District population to 2030. They used 2015 population by age as the baseline, and projected it forward, based on assumptions about fertility, mortality, and migration. The OP projections also incorporate assumptions about planned housing development growth, using 2015 permit data. The OP population projections include both high and low population growth scenarios. The high-level growth scenario assumes that future growth will be similar to the rate of population growth in the District between 2010 and 2015. The high scenario also assumes that "improved public school performance and government initiatives like universal Pre-K will continue to attract and retain a greater percentage of families with children."[4] The differences between OP's low and high population projections for school-aged students are relatively small, with only a 225-child difference from the ages represented in the grade bands Pre-K 3 through high school. Therefore, the MFP uses the high scenario to develop the baseline enrollment projections and related gap analysis.

Because the years of the MFP (SY2022-23 and SY2027-28) do not match that of the OP population projections, the MFP extrapolates the OP data to estimate student age population in those years. The analysis estimates the SY2017-18 population by applying the annual growth rates used by OP for the 2020 projections to the 2015 population; the SY2017-18 population provides the base year for projections. Similarly, the SY2022-23 and SY2027-28 population estimates are developed by applying the growth rates used by OP between 2020 and 2025 to the 2020 population estimates. For example, to project the estimated number of elementary-age children in Neighborhood Cluster 1 in 2017, the analysis takes the average annual growth rate of that population between 2015 and 2020. In 2015, OP estimated that there were 478 elementary-aged children in Neighborhood Cluster 1. In 2020, OP projected that there would be 567 elementary-aged children, which translates to a population growth rate of 4% annually. To estimate the number of children in 2017, the analysis takes the estimated 478 children in 2015 and grows the population by 4% each year for two years, resulting in 514 children in the cluster in 2017. The same approach was then used to project that population to 2022. The OP 2020 to 2025 population projection annual growth rates for each cluster were then applied to the 2020 cluster population estimates for a period of two years, in order to estimate the number of children in 2022 in each cluster. Those same annual growth rates were then applied to the 2025 cluster population estimates for a two-year period, to generate an estimate of the number of elementary-age children in each cluster in 2027.

[4] District Office of Planning, "Single Age Population Forecast Methodology," 2015

For the enrollment projections, the population is sorted into grade band groups:

- **Pre-K 3&4** – Ages 3 and 4
- **Elementary School** – Ages 5–10
- **Middle School** – Ages 11–13
- **High School** – Ages 14–17

High schools often have students older than 17; however, because not all of the population 18 and over in the District are school students, using the population projections for those students would overly-inflate the numbers. Because the capture rates are developed using full enrollment (including those age 18 or over) and the population of ages 14 through 17, these students are accounted for in the capture rates developed to estimate future enrollment. **Figure 3.4** shows overall children by grade band. In 2017, there are an estimated 96,250 children ages 3 to 17 in Washington, DC. Of these children, 18% are ages 3 and 4, 43% are elementary school-aged, 17% are middle school-aged, and 22% are high school-aged (through age 17). This distribution changes slightly over the 5 and 10-year periods.

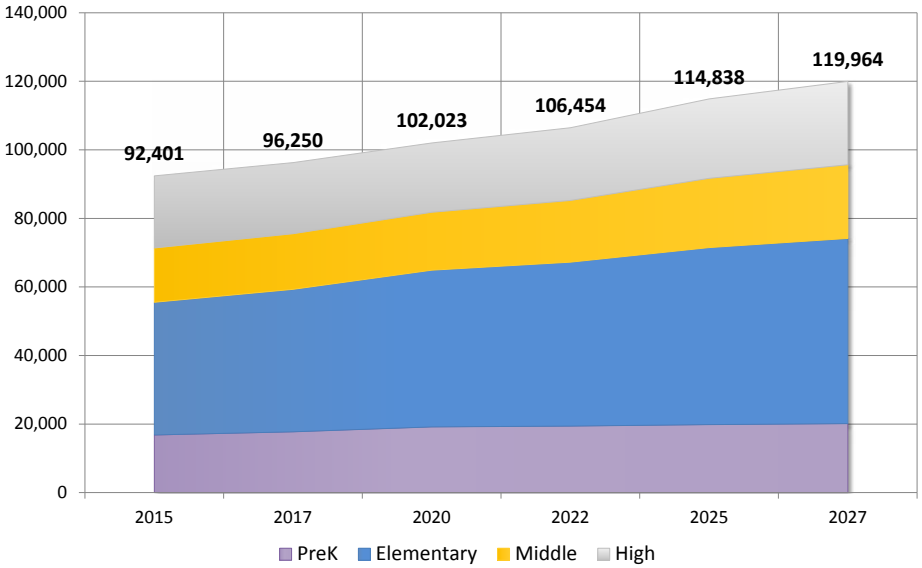


Figure 3.4 Estimated DC School Age Children by Grade Band
Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population These estimates do not include potential students age 18 and above."

DCPS School-Level Enrollment Projections

The DCPS school-level enrollment projections use a neighborhood cluster-by-cluster analysis of student age population and historical enrollment. Because students are entitled to enroll at their school of right at any time during the year, the MFP analyzes enrollment at the school level for DCPS schools, to account for both in-boundary students and those who choose to attend through the lottery to assist in future facility planning.

The data components included in the school-level enrollment projections are student age populations (for SY2015-16, and extrapolated as described above for SY2017-18, SY2022-23, and SY2027-28) and anonymized public school student-level data, which provides the school in which the student was enrolled, the student's neighborhood cluster of residence, and whether the student was in-boundary for his or her school.

Using the DCPS student data for SY2015-16 and SY2017-18, enrollment is summarized by school by grade band into one of 92 categories based upon where its students reside: 46 in-boundary neighborhood clusters and 46 out-of-boundary neighborhood clusters.

School boundaries often fall into multiple neighborhood clusters, and so it is possible to have in-boundary students originating from several neighborhood clusters. Conversely, it is also possible to have some students from a neighborhood cluster who are in-boundary while others are out-of-boundary, but who attend the same school. For example, both Student A and Student B, who go to Elementary School A, live in Neighborhood Cluster 1. However, Student A lives outside of the boundary for Elementary School A. Therefore, Student A would be added to the "Out-of-Boundary Neighborhood Cluster 1" category, while Student B, who lives inside the boundary, would be added to the "In-Boundary Neighborhood Cluster 1" category. Their classmate, Student C, is from Neighborhood Cluster 2, and would be in the category "Out-of-Boundary Neighborhood Cluster 2." This process was done for every school.

Some of the students in the data are not mapped to a specific neighborhood cluster; as a result, in some cases there are schools with students living in an unspecified geography. In the analysis, these students are distributed into the 92 categories according to the overall distribution at the school of the students who are mapped to specific addresses.

Once each school has each member of its student body assigned to one of the 92 possible geographic categories, the number of students in each category is compared to the total student-age population in that neighborhood cluster, in order to determine the school's capture rates (see **Figure 3.5**). The capture rate represents the percentage of the total student-age population that attends each school from a specific category. Each school has 92 capture rates: one for each of the student categories described earlier. Capture rates are determined by dividing the student data for two years, SY2015-16 and SY2017-18, by the student age population projections for that year. In the case of SY2017-18, which falls between the years of OP's projections 2015 and 2020, the number is extrapolated at an average annual rate.

The capture rates for SY2022-23 are then adjusted according to how they have changed between SY2015-16 and SY2017-18. The school's estimated capture rate by neighborhood cluster for SY2017-18 is adjusted upward or downward at half the growth rate experienced between SY2015-16 and SY2017-18. The reduced rate of change is applied as a conservative measure to lessen the impact of dramatic swings and avoid any over or under-counting of students. This is repeated for each of the 92 geographic categories by school by grade band. In doing this calculation, capture rates are constrained to stay within 0 percent and 100 percent. To determine future enrollment (see **Figure 3.6**), the resulting capture rates are multiplied with the student age projections by neighborhood cluster to determine the estimated number of students per neighborhood cluster. The 92 results are added together to result in the total enrollment by in-boundary or out-of-boundary status, by grade band, which is intended to enhance DCPS's planning for potential by right enrollment at the school. The results are then added together to estimate enrollment at the school level. The estimated enrollment projections are also summarized by facility, to contribute to the gap analysis for DCPS. See **Table 3.2** for total DCPS enrollment by grade band and Appendix A.16 for school level enrollment.

Capture Rate Determination

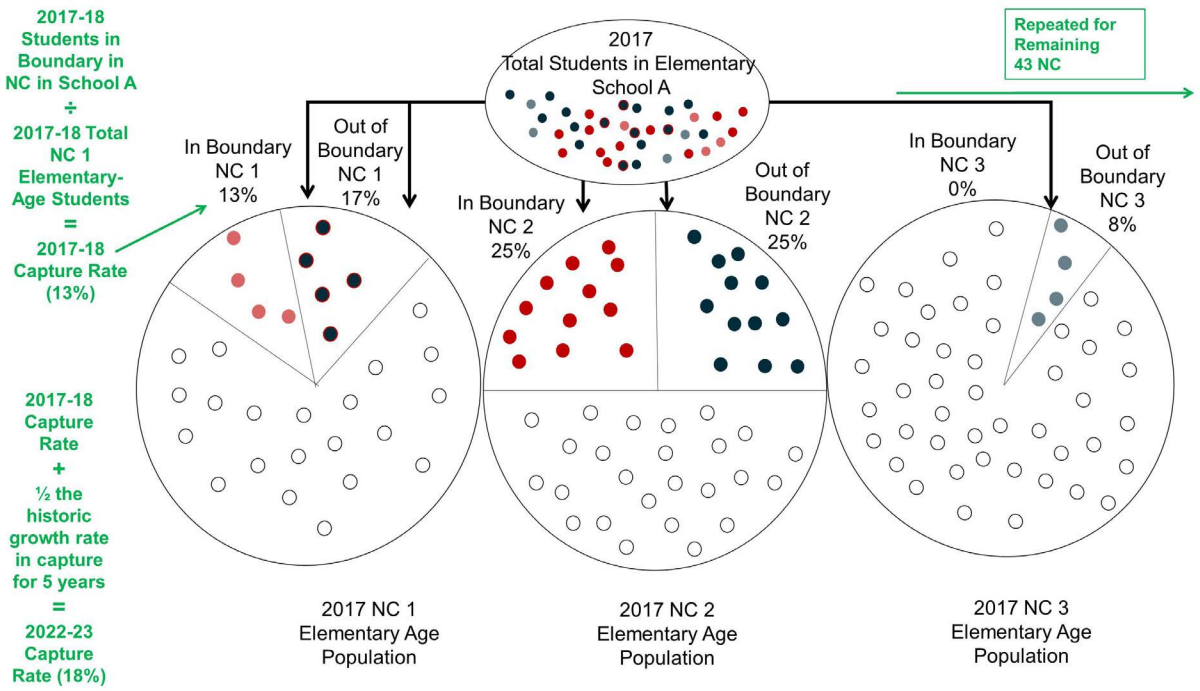


Figure 3.5 Illustration of 2017-2018 Capture Rate Determination
Source: AECOM, 2018

Using Capture Rates and Population to Estimate 2022-2023 Enrollment

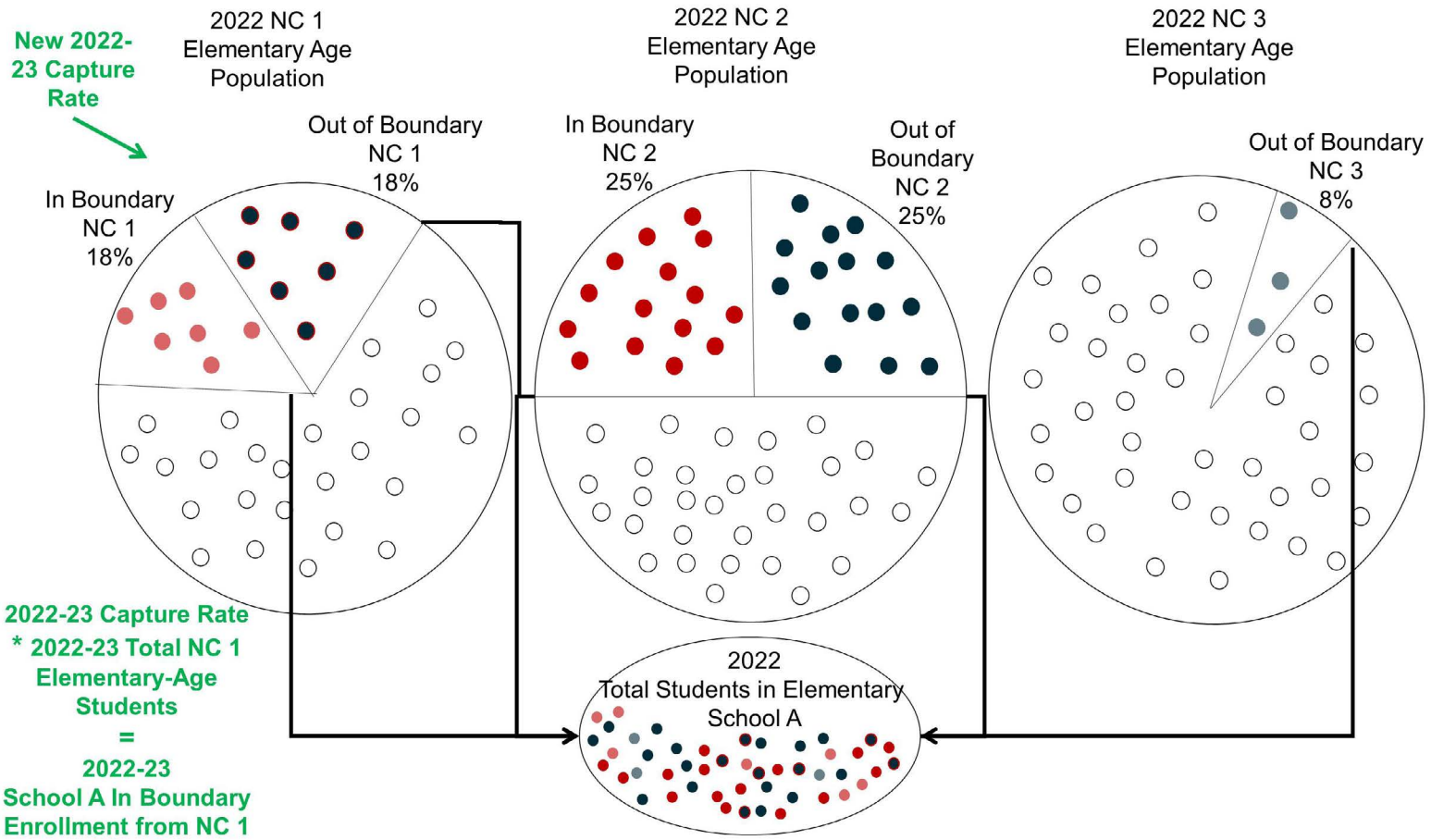


Figure 3.6 Illustration of DCPS School-Level Enrollment Projections
Source: AECOM, 2018

PCS Sector-Level Enrollment Projections

PCS enrollment by grade band is estimated for the entire sector based on historical enrollment shares. The enrollment projections are not provided on a school-by-school or LEA basis, because charter schools do not have the same by-right enrollment requirements as DCPS schools. The total student age population by grade band is calculated by the historic capture rate of students by the public school system, which is then calculated using the SY2017-18 share by sector. These are based on population changes and could include growth at individual existing LEAs or growth in new LEAs. The result is added to the DCPS school-level projections made above to result in the total projected public school enrollment. See **Table 3.2** for the total enrollment projections by year. While this analysis keeps the share of charter schools to DCPS schools at the SY2017-18 level (47%), it is acknowledged that this could shift. The implications of the changes in sector enrollment share is shown in Section 3.3.4.

Table 3.2 Enrollment by Grade Band and Sector, Audited SY2017-18, Projected SY2022-23, and Projected SY2027-2028

GRADE BAND	DCPS			PCS			ALL PUBLIC SCHOOL STUDENTS		
	2017-18	2022-23	2027-28	2017-18	2022-23	2027-28	2017-18	2022-23	2027-28
Pre-K	5,797	6,952	7,228	6,913	7,566	7,842	12,710	14,518	15,070
Elementary	23,552	26,527	29,941	16,862	19,413	21,929	40,414	45,940	51,870
Middle	6,802	6,771	8,097	7,753	8,570	10,250	14,555	15,341	18,347
High	10,307	10,669	11,902	6,857	7,033	8,053	17,164	17,702	19,955
Above Grade Bands	**46,458**	**50,919**	**57,168**	**38,385**	**42,582**	**48,074**	**84,843**	**93,501**	**105,242**
Other	1,686	1,263	1,263	4,955	5,497	6,206	6,641	6,760	7,469
Total	**48,144**	**52,182**	**58,431**	**43,340**	**48,079**	**54,280**	**91,484**	**100,261**	**112,711**

Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population Projections; DME; AECOM, 2018
Note: Pre-K includes ages 3-4; Elementary includes ages 5 to 10; Middle includes ages 11 to 13; High includes ages 14 to 17 plus a factor to account for students ages 18 and above. "Other" for DCPS schools includes adult and alternative programs and special education schools. Projected enrollment for PCS "Other" is to account for similar programs. This enrollment was calculated by taking the SY2017-18 proportion of PCS students that fall into adult, alternative, and special education programs and applying the share to the total projected enrollment for the Pre-K through High School Grade Bands.

Total Public School Enrollment Projections

Total public school enrollment is projected to increase from 91,484 in SY2017-18 to 100,261 in SY2022-23 and to 112,711 in SY2027-28. These include an estimate of students who do not fit into traditional grade bands, calculated as part of the projection, and based on historical enrollment shares. **Figure 3.7** shows the total enrollment and the sector split between DCPS and public charter school from the SY2017-18 through the SY2027-28 school years. Because the share of PCS students remains constant, the variation is a result of population growth and the individual school-level capture share at the neighborhood cluster level, causing fluctuation in the DCPS projection.

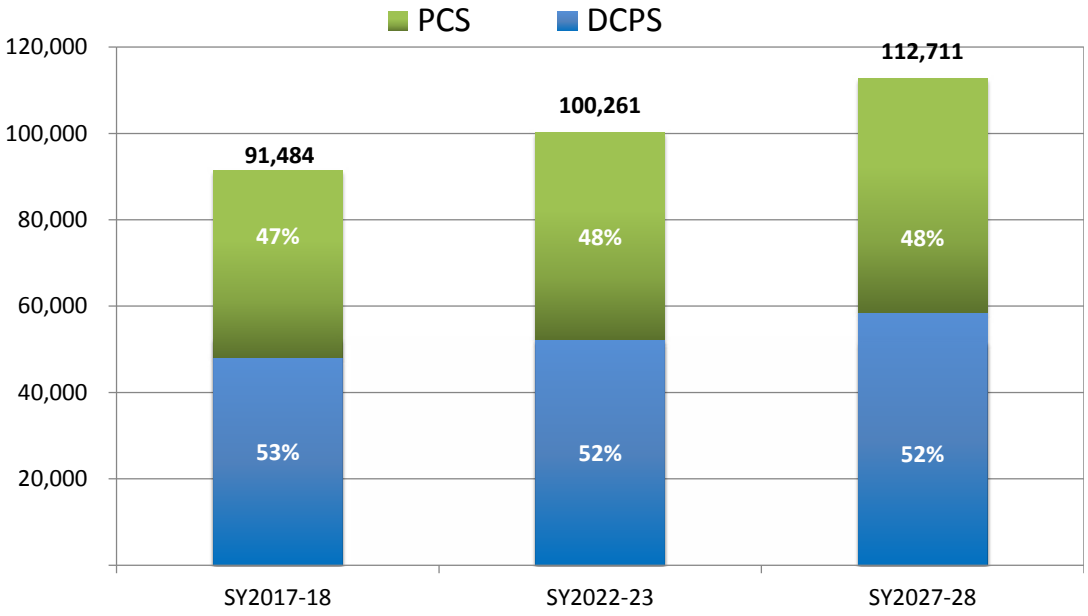


Figure 3.7 Total Enrollment and Sector Share, Audited SY2017-18 and Projected SY2022-23 and SY2027-28
Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population Projections; DME; AECOM, 2018

3.3.2 DCPS Growth Plans and Projections

As mentioned in 3.3.1, in addition to projecting DCPS projections at the school level, the MFP also considers DCPS's ongoing programmatic planning, including adding grades, adding schools, adding classroom space, and expanding comprehensive and special programs. Some of DCPS's ongoing changes in enrollment are captured in the school-level projections. However, some are not, if the programs or schools are not in place as of SY2017-18. So, these schools are inserted into the MFP using DCPS's planned enrollment and considered in the Gap Analysis in Section 4. By SY2022-23, DCPS plans for another potential 3,269 students and for 89 above that by SY2027-28. These are in addition to the enrollment projections presented in the previous section. Changes include one new Pre-K-only facility, added Pre-K programs and classrooms at existing elementary schools and education campuses (which are converting to elementary-only facilities), an additional middle school in the north part of Washington, DC, one current public charter school (Excel Academy) that is converting to a DCPS school, and one new high school (Bard High School).

Adding these to the enrollment projections presented in Section 3.3.1, DCPS enrollment could reach a total of 55,451 by SY2022-23 and 61,789 by SY2027-28, as shown in **Figure 3.8** and **Table 3.3**. Appendix A.16 shows SY2022-23 and SY2027-28 enrollment projections for DCPS schools, and Appendix A.17 shows the enrollment projections plus DCPS growth plans for the same years.

3.3.3 PCS Growth Plans and Projections

During the summer of 2018, the DC PCSB requested that public charter LEAs submit LEA growth plans that specified any plans that the LEAs have to expand enrollment or relocate their facilities over the next ten years. The objective of this request was to broaden the data available to the MFP on the future demand for school facilities in the District. Fifty-one of the 66 charter LEAs, representing 81% of total public charter school enrollment, submitted growth plans.

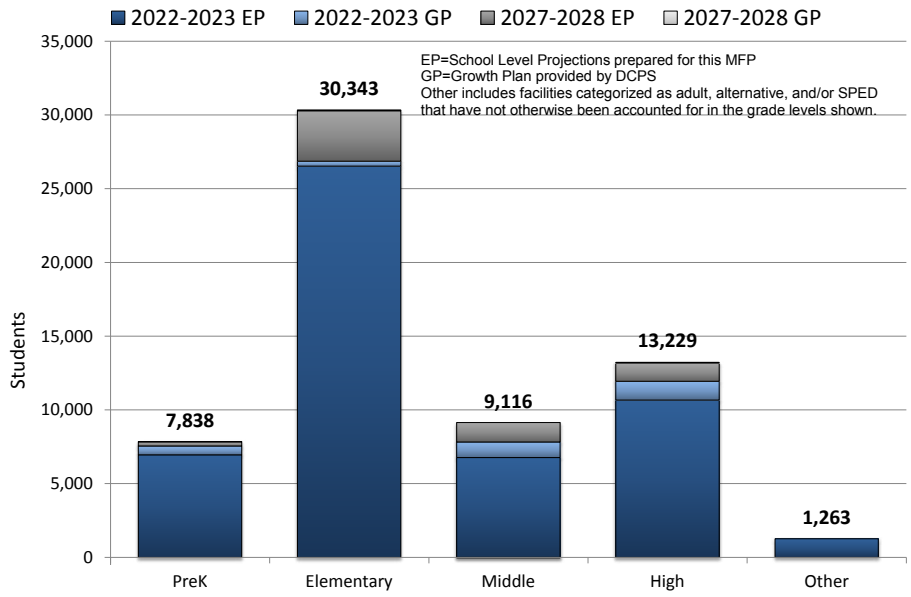


Figure 3.8 DCPS School-Level Enrollment Projections Plus Growth Plans through SY2027-28

Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population Projections; DCPS; DME; AECOM, 2018

Table 3.3 DCPS Projected Enrollment: School-Level Projections and Growth Plans

ENROLLMENT PROJECTIONS	2022-2023	2027-2028
Pre-K	6,952	7,228
Elementary	26,527	29,941
Middle	6,771	8,097
High	10,669	11,902
Other	1,263	1,263
Total	**52,182**	**58,431**
GROWTH PLAN		
Pre-K	605	610
Elementary	346	402
Middle	1,050	1,019
High	1,268	1,327
Other	0	0
Total	**3,269**	**3,358**
TOTAL		
Pre-K	7,557	7,838
Elementary	26,873	30,343
Middle	7,821	9,116
High	11,937	13,229
Other	1,263	1,263
Total	**55,451**	**61,789**

Note: Presented by student grade level. Other includes adult, alternative, and SPED-specific facilities.
Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population Projections; DCPS; DME; AECOM, 2018

The standardized growth plan template distributed by DC PCSB includes, for 5-year and 10-year future timeframes, data on grade range, enrollment, facility adequacy, relocation and expansion plans, reason for relocating, target ward and neighborhood cluster for any new facilities, and specialized programs. The results are by LEA, not by facility. The questionnaire is attached as Appendix A.19; the results of the growth plans are presented in Appendix A.18. The tables below summarize the salient results of the survey.

Based on the survey data, median enrollment for public charter schools will remain nearly constant between SY2022-23 and SY2027-28. This modest growth rate masks large differences among individual public charter school LEAs, as shown in the tables in Appendix A.18.

Just over half of the LEAs that submitted growth plans have future enrollment targets that are within their enrollment ceiling; the projections of the other LEAs that submitted growth plans exceed their current enrollment ceilings. In order to accomplish their anticipated growth, these LEAs would be required to request and be approved for an enrollment ceiling increase from the DC PCSB.

ANTICIPATED ENROLLMENT	MEDIAN	MEAN	MIN	MAX
SY2022-2023	350	391	44	1650
SY2027-2028	350	409	44	1750

In terms of expansion and relocation plans, 82% of LEAs reported that they have no plans to move one of their charter schools to a new facility over the next five years. (Over the next ten years, the figure is 81%.) Only 26% of the participating LEAs reported that their facility is inadequate for the current 5-year timeframe; half of these named “Insufficient space for growth” as the main problem. “Insufficient space for program needs” was also cited as a problem by only 5% of respondents over both the 5-year and 10-year timeframes. The critiques of facilities and reasons for moving are generally consistent across the two timeframes.

The growth plan surveys also asked LEAs if they had any plans to open future schools. Of the LEAs that responded, 29% anticipated opening a new school between SY2022-23 and SY2027-28. Those LEAs that plan on opening a future school anticipate expanding in all wards except Ward 3, with the majority of new schools (23%) listing Ward 8 as their preference to open a new location by SY2027-28.

Using the growth plans, plus a “PCS static enrollment” number that takes into account the SY2017-18 enrollment minus known closures and other changes, the total public charter school enrollment would be 55,949 in SY2022-23 and 60,918 in SY2027-28, as shown in **Figure 3.9**. It is important to note that these growth plans anticipate the plans of existing LEAs but do not take into account possible new PCS LEAs. Over the past five years, an average of two public charter schools have opened per year and one has closed resulting in approximately a net gain of 400 additional students. These also do not take into account any unanticipated growth in LEAs who did not submit growth plans; their enrollment was held constant unless

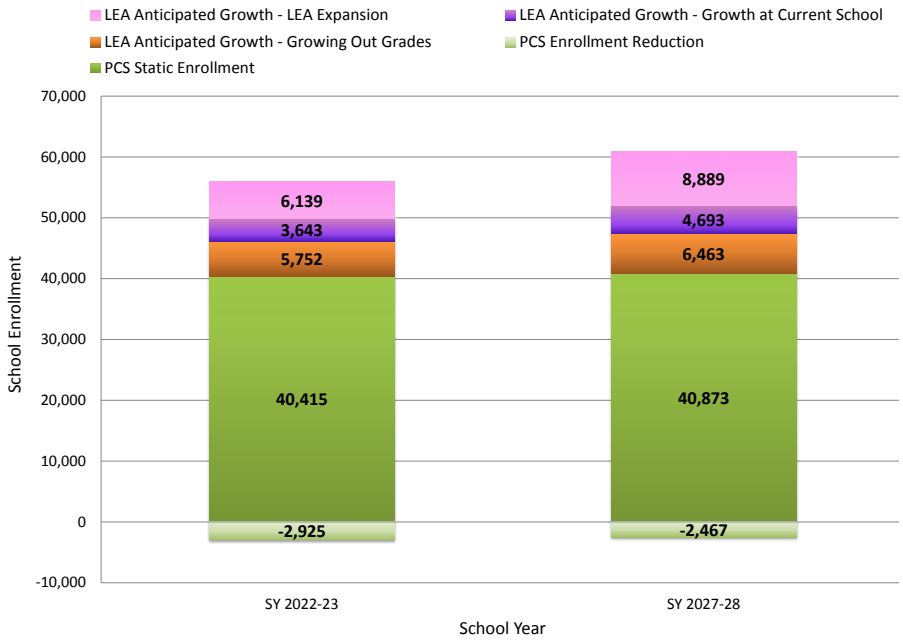


Figure 3.9 PCS Projected Enrollment Including Anticipated Growth

Source: DME 2017, AECOM 2018

PCS Enrollment Reduction includes public charter schools that closed at the end of SY2017-18 (Excel Academy PCS, Sustainable Futures PCS, and Washington Mathematics Science Technology PCHS) , fewer grades being offered at a school (e.g., SEED PCS MS and Cesar Chavez PCS for Public Policy - Parkside MS), and expected decreases in enrollment by the LEA.

Table 3.4 Reason Facility Is Inadequate (SY2022-23)

Facility Upgrades	1%
Insufficient space for growth	13%
Insufficient space for program needs	5%
Lease Expiring	2%
No plans to move	74%
Renovations necessary	4%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

Table 3.5 Reason Facility Is Inadequate (SY2027-28)

Insufficient space for growth	11%
Insufficient space for program needs	5%
Lease Expiring	2%
No plans to move	79%
Renovations necessary	3%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

Table 3.6 Primary Reason for Moving (SY2022-23)

...current lease is ending	4%
...current space is too expensive	1%
...insufficient space for planned growth	5%
...insufficient space for programmatic needs	4%
No plans to move	82%
Other	3%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

Table 3.7 Primary Reason for Moving (SY2027-28)

...current lease is ending	4%
...current space is too expensive	1%
...insufficient space for planned growth	5%
...insufficient space for programmatic needs	5%
No plans to move	81%
Other	3%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

Table 3.8 Move Plan (SY2022-23)

No Plans to Move	77%
Somewhat Likely	3%
Somewhat Unlikely	2%
Very Likely	10%
Very Unlikely	9%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

Table 3.9 Move Plan (SY2027-28)

No Plans to Move	74%
Somewhat Likely	4%
Somewhat Unlikely	2%
Very Likely	11%
Very Unlikely	9%
Total	**100%**

Note: Data only reflect those LEAs that submitted growth plans. Numbers may not add up to 100% due to rounding.

the school was still growing to fill existing grades. However, having the participation of the LEAs who completed the survey is key to gaining greater understanding of how enrollment in the sector may change, possible implications on the DCPS sector, and how facility planning can respond.

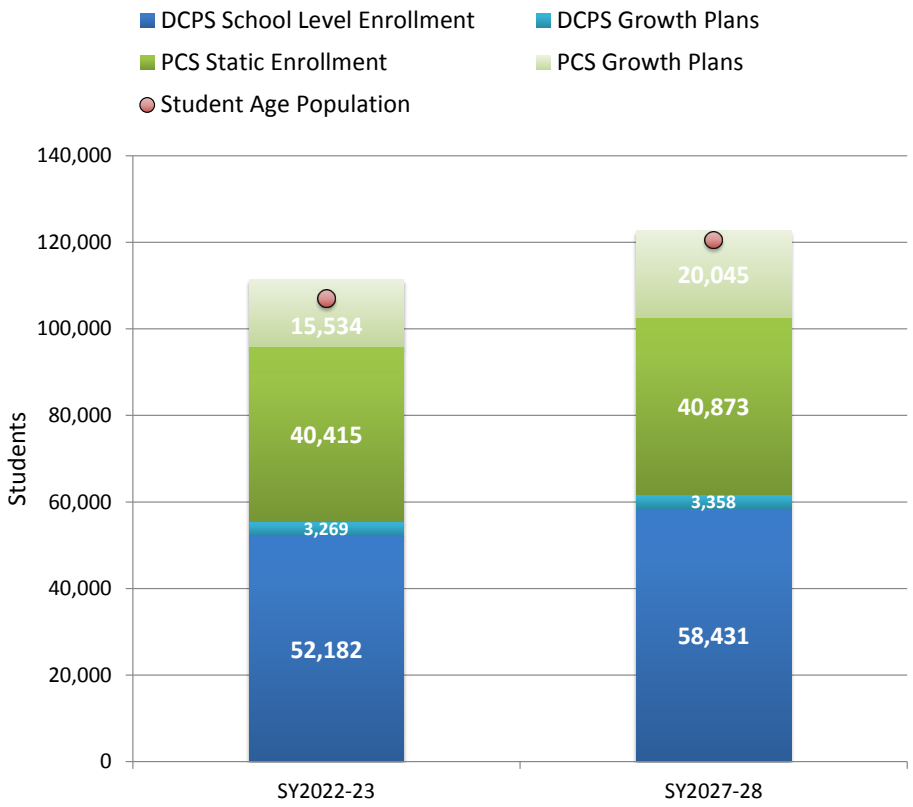


Figure 3.10 Enrollment Projections by Sector and by Source of Growth
Note: Projections and growth plans include adult students, while the student age population does not.
Source: OSSE Student Level Data and Audited Enrollment; DC OP Single Age Population Projections; DME; AECOM, 2018

3.3.4 Considerations in Planning for Future Enrollment

Taking the DCPS school-level projections and growth plans into account, as well as current public charter LEA growth plans in addition to their static enrollment to date, the total enrollment reaches 111,400 students in SY2022-23 and 122,707 students in SY2027-28. While recognizing that both DCPS and PCS have students aged 18 and over—in high schools, special education programs, and adult/alternative programs—using the student age population of 3 to 17 years of age as a benchmark, the totals exceed the projected student age population without taking private school enrollment into account, as shown in **Figure 3.10**.

As shown in the PCS growth plan section, the growth plans reflect a number of different enrollment growth drivers, some of which have more certainty (such as filling out grades they currently serve or growing at their current school facility), while others rely on additional factors that make them less certain (such as school expansion which would require either location of a new facility or an in situ facility expansion).

These numbers also do not consider the addition of new LEAs (one net new LEA has opened on average each year) or changes at LEAs that did not complete the growth plan survey with the exception of schools that are growing out grades, which have been estimated for this analysis.

The split between sectors is also an uncertainty. Since charter schools became an option for District public school students, the proportion of students choosing public charter schools has steadily increased; so, while baseline PCS enrollment projections (shown in Table 3.2) are based on the SY2017-18 share of students enrolling in public charter schools, this share could shift higher or lower, which in turn could impact DCPS enrollment. How this could potentially shift is shown in **Figure 3.11**: "Baseline" represents what has been used in the enrollment projections in Section 3.3.1; "Trend" shows the split using a straight line projection of how the shares have been changing since 2008, with public charter school consistently growing in share at approximately 1% per year; "Reduced

Trend" has public charter schools gaining share half as fast; and "Reversed Trend" shows somewhat of a trend reversal, with a greater share of students choosing to attend schools in DCPS versus PCS.

As there can be shifts in shares of students by sector, more District students could choose to attend public schools in both sectors rather than private schools—which has been a trend—and this could impact the overall share of students enrolling. Looking at the future enrollment components together illustrates the complexity of planning for the future facility needs and the need for coordination among sectors and schools. The likely growth scenario likely falls somewhere within the range of the population growth-based enrollment projections and the growth plans. The gap analysis in the next section examines how the projected enrollment from the three components described in this section aligns with the current and projected capacities at school facilities.

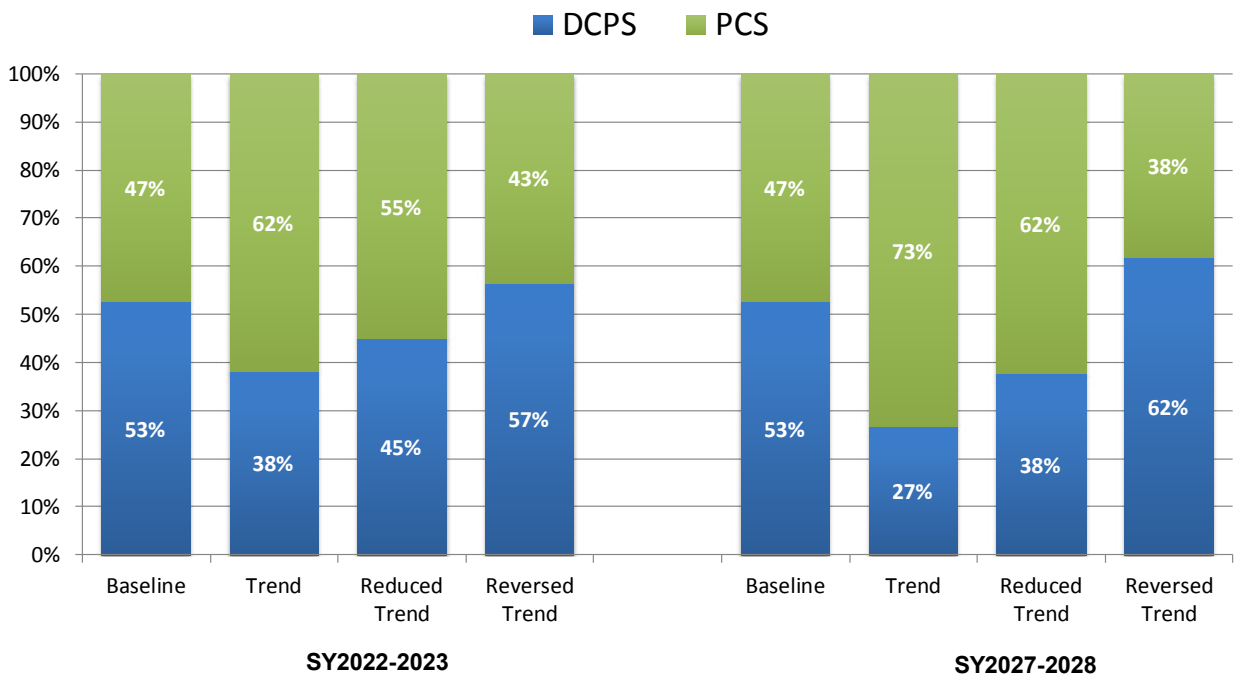


Figure 3.11 Illustrative Sector Split Scenarios, SY2022-23 and SY2027-28
Source: AECOM, 2018

3.4 GAP ANALYSIS

This section compares the enrollment projections to SY2017-18 programmatic capacity. For DCPS schools, the comparison is done at the facility level. For public charter schools, the comparison is done in aggregate.

The emphasis in this section is on trends by ward and by grade band rather than outcomes for individual facilities and schools. The first two subsections below present findings by sector; the third subsection discusses District-wide outcomes. Appendix A.20 and Appendix A.21 provide additional information at the individual DCPS and PCS facility level, while Appendix A.22 provides additional information at the PCS LEA level. This gap analysis utilizes enrollment projections and growth plans from the previous section for DCPS and PCS enrollments for SY2022-23 and SY2027-28.

3.4.1 Gap Analysis for DCPS Facilities

In the base year of the analysis (SY2017-18), DCPS had a surplus of about 13,900 seats. The surplus is projected to shrink to approximately 6,600 seats by SY2022-23 and 200 seats by SY2027-28. Essentially, this means that DCPS has enough seats in aggregate to absorb projected enrollment over the 10 year planning period, assuming the DCPS sector share remains constant.

This District-wide trend for DCPS facilities masks large disparities at the ward level. Ward 5 is anticipated to have a substantial surplus of seats throughout the 10-year planning period, while Wards 7 and 8 will still be operating within 80% and 85% of capacity, which is greater than the baseline year. Ward 6 is projected to exceed its current capacity of seats by SY2027-28. Ward 1 will be at equilibrium in SY2022-23 and will exceed the number of seats by SY2027-28. Ward 4 will just surpass its total capacity in SY2022-23 and will far exceed it by SY2027-28. Enrollment in Wards 2 and 3 outstrips capacity today, and the gap will continue to grow over the next ten years in the absence of DCPS facility expansion (see **Figure 3.12** and **Table 3.10**).

The analysis by grade band shows that DCPS elementary school facilities will have absorbed much of their current surplus of about 3,800 seats within the next five years, and then run up a deficit of approximately 2,700 seats by SY2027-28. On the other hand, middle school and high school facilities will continue to have a surplus of seats by SY2027-28. The gap for middle schools will shrink from about 4,000 (53% of base year capacity) during the base year to about 1,800 in SY2027-28. Similarly, the gap for high schools will shrink from about 3,800 (71% of base year capacity) during base year to about 1,500 students by the end of the planning period (see **Figure 3.13** and **Table 3.11**).

The analysis by feeder pattern depicts a varied capacity and utilization picture across different parts of Washington, DC. Appendix A.23 shows diagrams of high school feeder patterns for the base year (SY2017-18), 5-year and 10-year timeframes. The highly utilized, underutilized and well-aligned DCPS school facilities are color-coded. A number of the high school feeder patterns paint a picture of highly utilized or well-aligned (capacity with enrollment) elementary schools that feed into underutilized middle schools and high schools (Anacostia and Woodson, for example). Over the planning period, some of these middle and high schools achieve better alignment, while others are still underutilized in SY2027-28. The Wilson High School boundary exhibits overcrowding at all grade bands today and is anticipated to become more overcrowded on the 5-year and 10-year horizons. The Dunbar High School boundary, on the other hand, exhibits underutilized elementary, middle, and high schools throughout the 5-year and 10-year planning horizons. **Figure 3.14**, **Figure 3.15**, and **Figure 3.16** depict the utilizations for DCPS facilities in the SY2017-18, SY2022-23, and SY2027-28 timeframes, respectively, as well as the geographic high school boundaries in the District.

Figure 3.12 DCPS Ward Gap Analysis

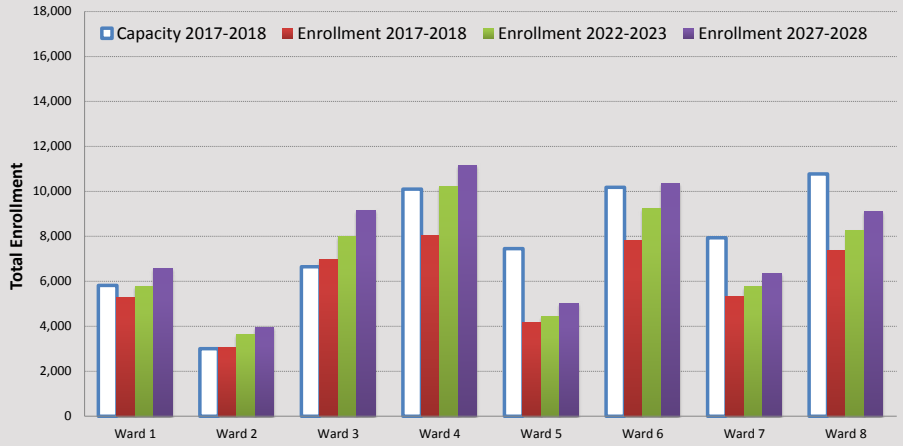


Table 3.10 DCPS Ward Gap Analysis

WARD	CAPACITY 2017-2018	ENROLLMENT 2017-2018	ENROLLMENT 2022-2023	ENROLLMENT 2027-2028
Ward 1	5,818	5,271	5,790	6,555
Ward 2	3,007	3,075	3,651	3,961
Ward 3	6,651	6,987	7,988	9,142
Ward 4	10,101	8,019	10,219	11,167
Ward 5	7,455	4,152	4,450	5,033
Ward 6	10,181	7,830	9,237	10,362
Ward 7	7,936	5,343	5,752	6,365
Ward 8	10,776	7,366	8,272	9,112
Total	**61,925**	**48,043**	**55,359**	**61,697**

Source: AECOM 2018, DME 2018
**Enrollments for Inspiring Youth and Youth Services Center have been excluded so totals will not match Table 3.2 or Table 3.3. See Appendix A.16 and A.17 for enrollment by school.*
***Enrollment numbers based on school-level projections and DCPS Growth Plans*

Figure 3.13 DCPS Grade Band Gap Analysis

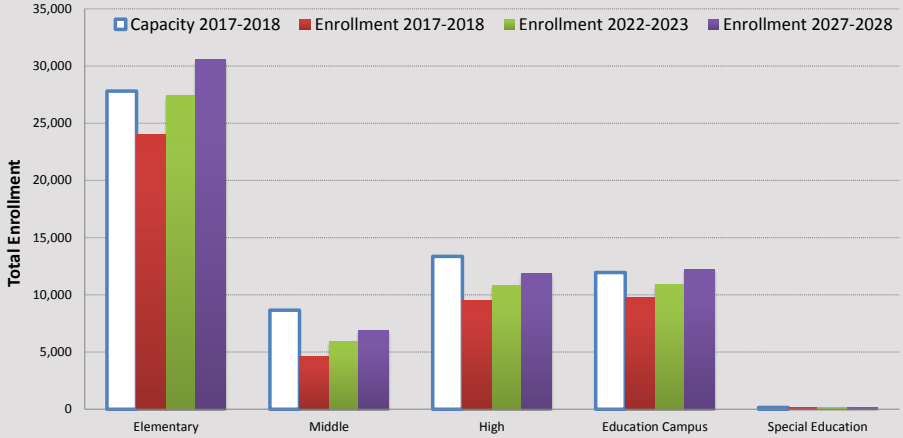


Table 3.11 DCPS Grade Band Gap Analysis

GRADE BAND	CAPACITY 2017-2018	ENROLLMENT 2017-2018	ENROLLMENT 2022-2023	ENROLLMENT 2027-2028
Elementary	27,807	24,018	27,467	30,549
Middle	8,653	4,610	5,960	6,892
High	13,354	9,536	10,864	11,861
Education Campus	11,951	9,742	10,908	12,235
Special Education	160	137	160	160
Total	**61,925**	**48,043**	**55,359**	**61,697**

Source: AECOM 2018, DME 2018
**Enrollments for Inspiring Youth and Youth Services Center have been excluded so totals will not match Table 3.2 or Table 3.3. See Appendix A.16 and A.17 for enrollment by school.*
***Enrollment numbers based on school-level projections and DCPS Growth Plans*
Note: Multi-schools are included in the Education Campus category

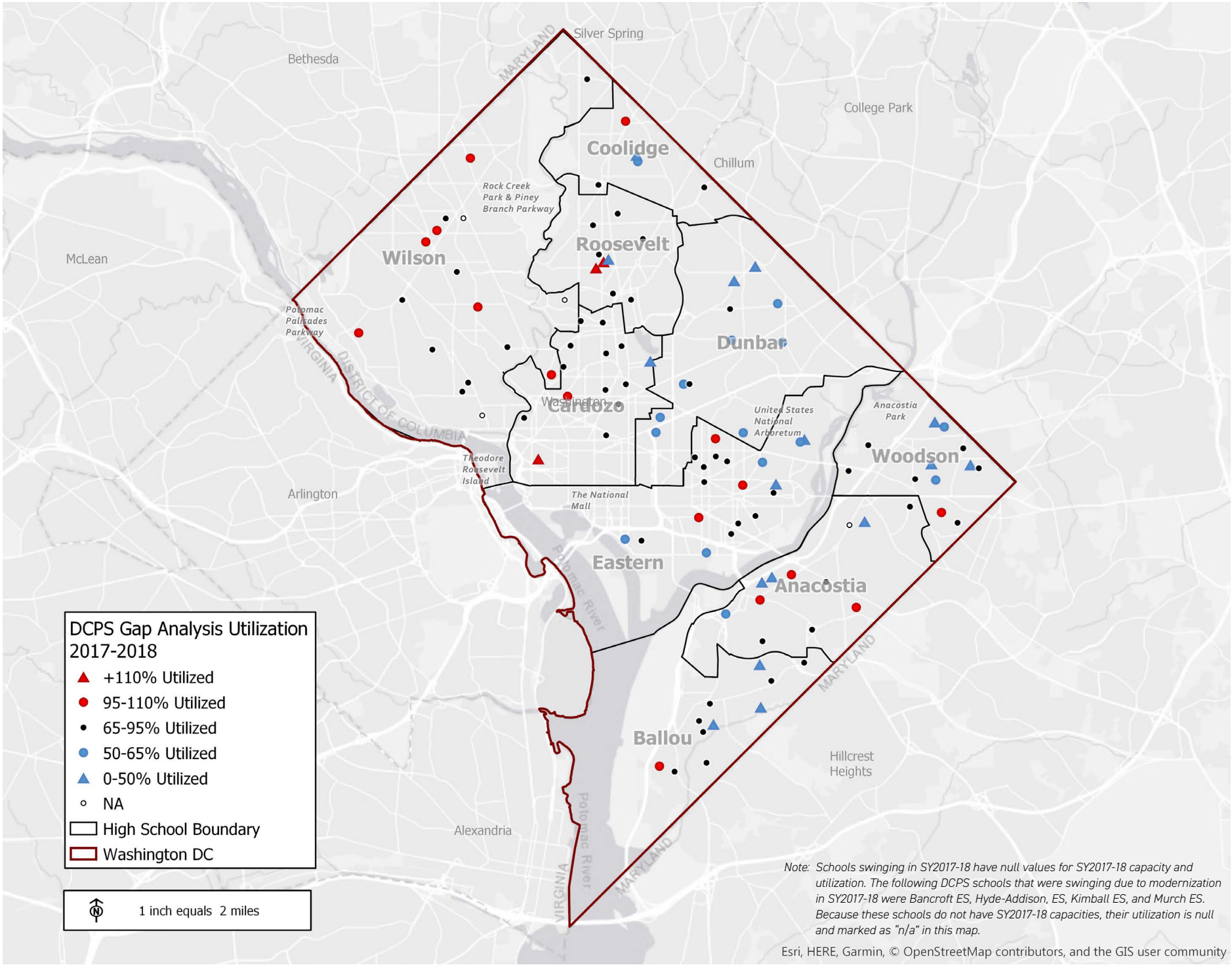


Figure 3.14 DCPS Geographic Gap Analysis 2017-2018

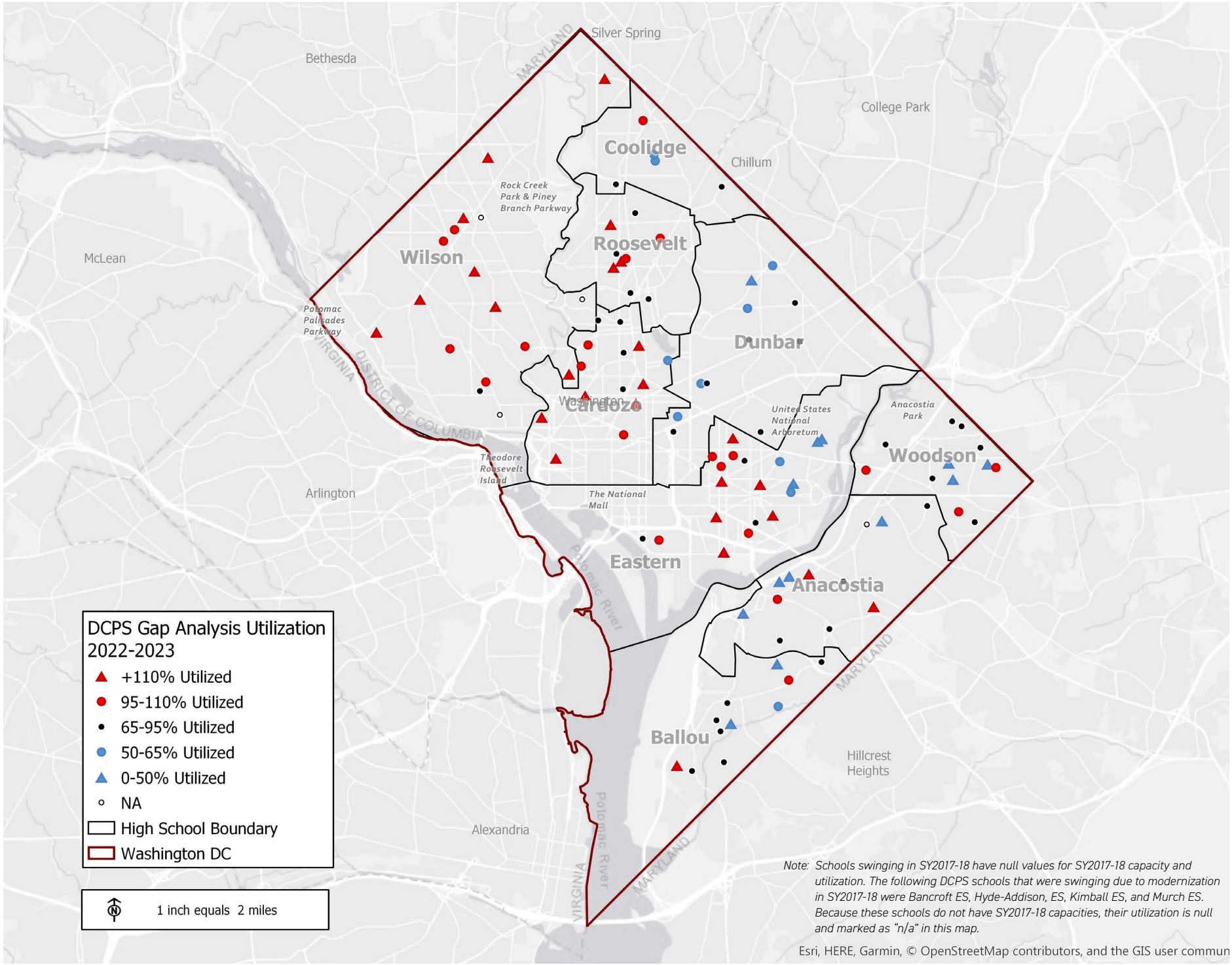


Figure 3.15 DCPS Geographic Gap Analysis 2022-2023

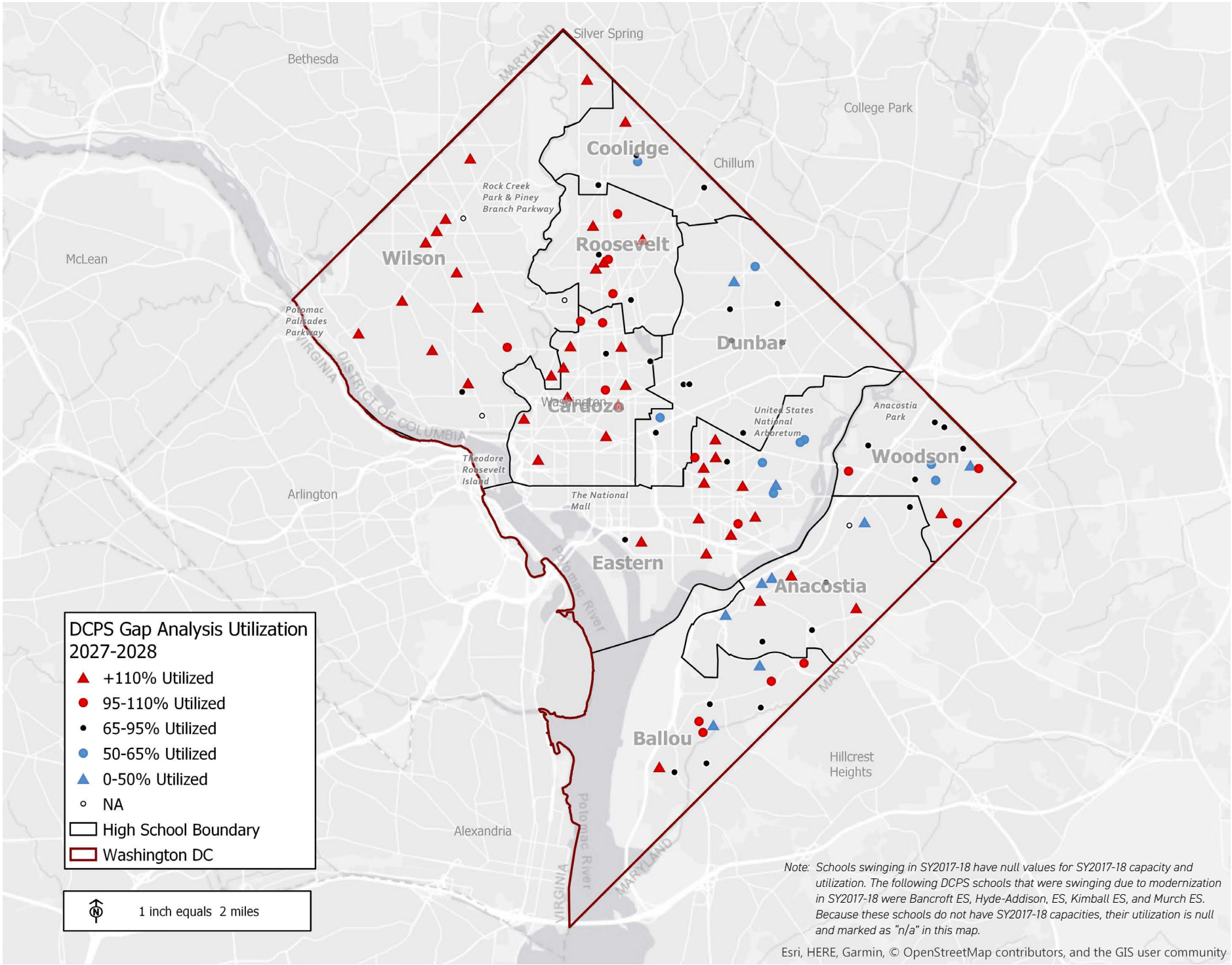


Figure 3.16 DCPS Geographic Gap Analysis 2027-2028

While the feeder pattern diagrams can be a valuable input to specific facility intervention strategies at the DCPS high school boundary level, the capacity and utilization data should first be interpreted in the context of the educational suitability of the surrounding public charter school facilities and the general quality of education at those schools. It was suggested during some of the community meetings that nearby public charter schools could also be taken into consideration in a high school boundary level analysis focused on identifying facility interventions that will not only help align capacity with enrollment but also contribute to better educational outcomes.

3.4.2 Gap Analysis for Public Charter Schools

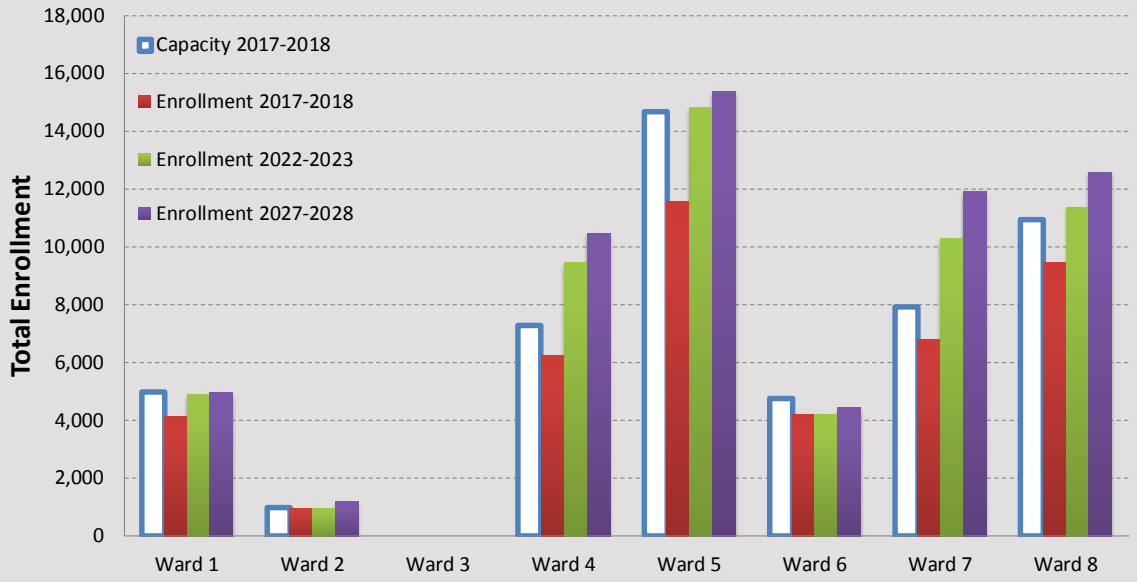
Analyzing the gap between enrollment and capacity for the public charter sector requires a different methodology, since public charter schools — unlike DCPS schools — are not required to act as schools of right. The enrollment projections for this sector are based on current enrollment plus the enrollment anticipated in the PCS growth plans. As described in Section 3.3, the growth plans are essentially aspirational, and some components of anticipated growth are more certain than others; the different levels of certainty can be used to nuance the gap analysis for the public charter sector.

The combined programmatic capacity of all public charter schools (51,499) exceeded enrollment in SY2017-18 by about 8,000 seats. Based on the aspirational enrollment growth reported in the public charter school LEA growth plans and discussed in Section 3.3, the surplus is anticipated to be absorbed and the existing public charter LEAs will need an additional 4,500 seats by SY2022-23 and almost 9,500 seats by SY2027-28. But of the projected growth of approximately 17,500 public charter school students over the planning period, about one-third (6,500 students) comes from schools that are still filling out grades (adding grades according to their approved development plans). This is the most certain part of the anticipated growth. The other growth components, including attracting more students to existing facilities and expanding to new facilities, are associated with a lower level of certainty. If only half of this most aspirational component (say 5,500 new students) were to be realized, then the deficit in SY2027-28 would drop to approximately 4,000 students. It is useful to think of the future gap as a range somewhere between 5,000 and 10,000 students.

The lack of certainty notwithstanding, this illustrative analysis is useful because it provides new information in a cross-sectoral perspective. It also allows policy makers, school leaders, and the public to understand this aspirational growth in comparison to DCPS projections and school-age population projections.

The breakdown by ward shows that existing public charter LEAs would like to expand in Wards 4, 5, 7 and 8, and this aspirational enrollment is expected to exceed existing capacity by the end of the planning period. In Wards 1 and 6, however, current facility capacity is sufficient for future enrollment growth, and capacity and enrollment are anticipated to be relatively well-aligned throughout the 10-year period (see **Figure 3.17** and **Table 3.12**). There are no public charter schools in Ward 3, and none of the submitted growth plans suggested that public charter schools intend to expand there.

Figure 3.17 PCS Gap Analysis by Ward



Source: AECOM 2018, DME 2018
There are no public charter schools currently in Ward 3

Table 3.12 PCS Gap Analysis by Ward

WARD	CAPACITY 2017-2018	ENROLLMENT 2017-2018	ENROLLMENT 2022-2023	ENROLLMENT 2027-2028
Ward 1	4,974	4,144	4,868	4,968
Ward 2	980	952	956	1,206
Ward 3	0	0	0	0
Ward 4	7,273	6,224	9,453	10,455
Ward 5	14,661	11,566	14,811	15,374
Ward 6	4,735	4,191	4,219	4,429
Ward 7	7,923	6,810	10,259	11,914
Ward 8	10,953	9,453	11,383	12,572
Total	**51,499**	**43,340**	**55,949**	**60,918**

Source: AECOM 2018, DME 2018
There are no public charter schools currently in Ward 3

3.4.3 District-Wide Gap Analysis

Combining the results of the DCPS and public charter school analysis allows for a sectorally integrated view of capacity and enrollment over the next ten years. As of SY2017-18, there was a surplus of about 22,000 seats across the DCPS and public charter schools compared to enrollment. Based on DCPS school-level enrollment projections and growth plans presented in Section 3.3 plus charter school enrollment projections using historic sector shares, the surplus of seats is anticipated to drop to approximately 10,000 seats over the next five years. Using the same calculation, in SY2027-28, a deficit of approximately 2,600 seats is expected. Again, this methodology assumes historically constant DCPS and PCS market shares.

A more nuanced view of total enrollment growth takes into account the different levels of certainty associated with different components of PCS Growth (see Section 3.3). This in turn allows for a more nuanced gap analysis. As discussed in the previous section, the greatest certainty is associated with the 5,800 students in SY2022-23 and 6,500 students by 2027-28 that will fill out new grades at selected public charter schools. If we withhold the other 9,800 students in SY2022-23 and 13,600 new students in SY2027-28 included in the PCS enrollment projections, then the surplus in seats across all public schools in SY2022-23 would be in the 11,900 range (down from 22,000 in the base year). Similarly, the deficit in SY2027-28 would become a surplus of about 4,400 seats. This suggests that facility capacity and student enrollment would be closer to equilibrium at the end of the planning period.

If the more aspirational growth plans for both sectors are taken into account, which assumes a more ambitious public charter sector market share, then the facility capacity surplus would be just slightly less than 2,100 seats in SY2022-23 and there would be a deficit of approximately 9,200 seats in SY2027-28. That said, a total estimated enrollment of about 122,700 public school students in Washington, DC ten years from now would exceed the projected total student-age population by approximately 2,700 students (without taking into account private school students, or public adult and alternative school students into account).

Enrollment in Wards 1, 4, and 7 will be increasing at a rate that will not be sustained by the capacity over the next ten years (see **Figure 3.18** and **Table 3.13**). By SY2022-23, the enrollment in Wards 4 and 7 will outstrip programmatic capacity. In ten years, enrollment in Wards 5, 6, and 8 will be well-aligned with programmatic capacity, but Ward 1 will experience a deficit of approximately 700 seats. Wards 2 and 3, already in excess of capacity during the base year, will experience a worsening deficit throughout the planning period as enrollment rises. The supply-demand mismatches at the ward level highlight the need for improved coordination among traditional schools and charter schools, especially at the level of the high school boundary, in order to identify facility investments capable of generating high benefit cost ratios.

Understanding whether Washington, DC will have a reasonable surplus or deficit depends on the methodology used. And the uncertainty presents a risk of not matching facilities to enrollment needs. One way to minimize this risk is to make more information available about enrollment projections and facility development plans by LEAs in both sectors; information sharing is one of the options proposed in Section 4. At the same time, it is likely that as the gap between capacity and enrollment narrows incrementally over the 10-year timeframe, LEAs active in the market will become aware of the shrinking number of additional students that could enroll in their school and therefore adjust their facility development plans to align better with market demand.

Figure 3.18 District-Wide Ward Gap Analysis

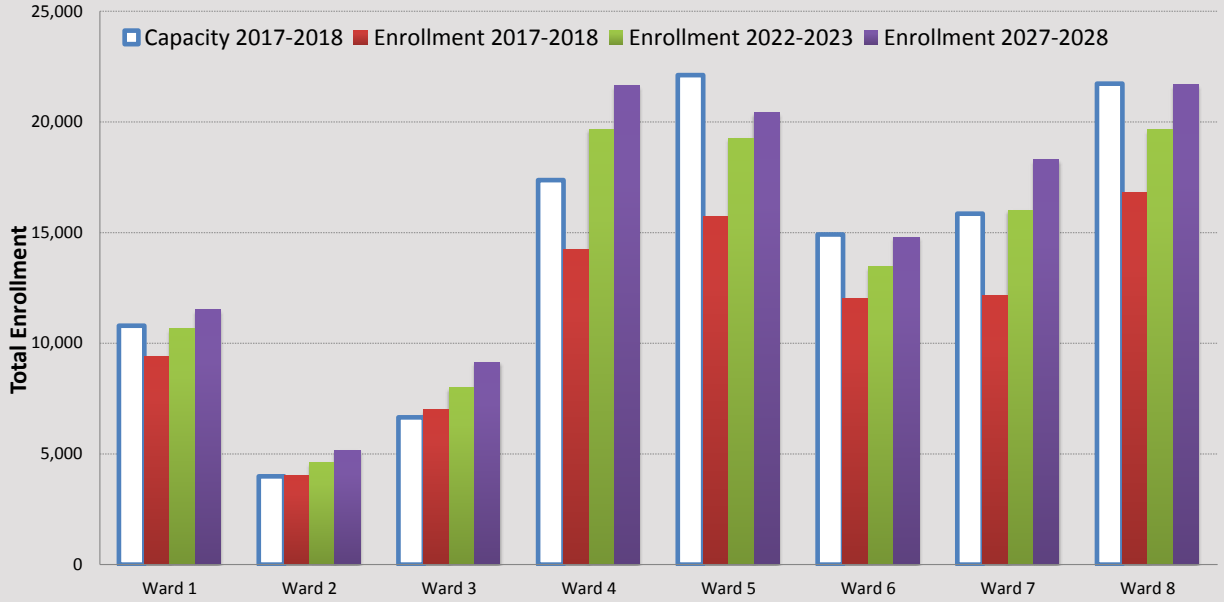


Table 3.13 District-Wide Ward Gap Analysis

WARD	CAPACITY 2017-2018	ENROLLMENT 2017-2018	ENROLLMENT 2022-2023	ENROLLMENT 2027-2028
Ward 1	10,792	9,415	10,658	11,523
Ward 2	3,987	4,027	4,607	5,167
Ward 3	6,651	6,987	7,988	9,142
Ward 4	17,374	14,243	19,672	21,622
Ward 5	22,116	15,718	19,261	20,407
Ward 6	14,916	12,021	13,456	14,791
Ward 7	15,859	12,153	16,011	18,279
Ward 8	21,729	16,819	19,655	21,684
Total	**113,424**	**91,383**	**111,308**	**122,615**

Source: AECOM 2018, DME 2018
**Inspiring Youth and Youth Services Center are not included in the enrollments.*