CHAPTER 02

02 STATE OF DC PUBLIC SCHOOLS SY2017-18

2.1 SCHOOL FACILITY CONDITIONS AND TRENDS

This section describes and analyzes SY2017-18 conditions and trends related to school facilities in Washington, DC's public school system. Where data availability permits, the analysis covers both DCPS and public charter school facilities. The school facility topics include facility modernization, facility condition, specialized program distribution, health and safety, and other facility availability. Conclusions drawn from this analysis, found in Section 2.4, set the stage for enrollment projections, gap analysis, and development of options for improving the public school facilities.

2.1.1 Overview of Public School Facilities

In total there are 238 educational facilities in Washington, DC. This section reviews the 212 facilities that are currently used as schools.

The unit of analysis for Section 2.1 is school facilities rather than schools, while the units of analysis for Section 2.2 (School Enrollment and Demand) are facilities and schools. These two units differ, as some single school facilities house multiple schools, while some schools operate within multiple facilities. The District collects and manages supply-side information at the facility level, as it helps inform decisions about physical improvements such as renovations. **Table 2.1** compares the number of SY2017-18 school facilities with the number of schools by sector. While there were 212 educational facilities utilized as schools in SY2017-18, an additional 26 educational facilities in the District-owned facility inventory are discussed in the following section.

Table 2.1 Number of SY2017-18 Schools and School Facilities by Sector

SECTOR	NUMBER OF FACILITIES	NUMBER OF SCHOOLS
DCPS	108	112
PCS	95	119
Co-located	9	18
Total	**212**	**249**

Source: DME 2017, AECOM 2018;
Note: Youth Services and Inspiring Youth are not included in the analysis. Seven of the Co-located school facilities house two public charter LEAs, while two Co-located school facilities house a DCPS and public charter LEA

The 212 school facilities are distributed across Washington, DC's eight wards (see **Figure 2.1** and **Table 2.2**). School facilities are classified by sector as District of Columbia Public Schools (DCPS), Public Charter Schools (PCS), or Co-located schools. Co-located schools are facilities that house two or more schools from different LEAs; such facilities include either a combination of DCPS and PCS schools or two or more public charter schools. School facilities housing multiple schools with different grade bands are referred to as multi-schools. Multi-schools can be from the same LEA or different LEAs (co-location). Education campuses are facilities with one school that span several grade bands.

The 212 school facilities include elementary schools, middle schools, high schools, adult education centers, alternative schools, and special education facilities. The highest concentration of school facilities is found in Wards 5 and 8, with 38 school facilities each. The lowest concentration of school facilities is found in Wards 2 and 3, with ten school facilities each. The supply of school facilities in Washington, DC has been dynamic and reflects substantial DCPS facility closures, as well as public charter school facilities opening and closing over time. **Table 2.3** shows that between 2013 and 2017, Ward 1 had the greatest net loss of school facilities while Ward 5 had the greatest net increase (more details on school facilities by ward and sector can be found in Appendix A.1).

The ownership status of the 238 educational facilities in Washington, DC is shown in **Table 2.4**. Of these, 212 facilities are currently used as schools. The majority of SY2017-18 school facilities are District-owned (141 of 212, or 67%), with 78% of District-owned school

Table 2.2 Number of School Facilities by Ward, SY2017-18

WARD	NUMBER OF SCHOOL FACILITIES
Ward 1	22
Ward 2	10
Ward 3	10
Ward 4	32
Ward 5	38
Ward 6	32
Ward 7	30
Ward 8	38
Total	**212**

Source: DME 2017, AECOM 2018

Table 2.3 Change in Number of School Facilities by Ward, 2013-2017

WARD	2013	2014	2015	2016	2017	TOTAL CHANGE
Ward 1	28	27	25	23	22	-6
Ward 2	9	8	8	9	9	0
Ward 3	10	10	10	10	10	0
Ward 4	28	31	32	32	33	5
Ward 5	30	35	37	38	38	8
Ward 6	29	29	32	31	32	3
Ward 7	27	27	28	29	30	3
Ward 8	34	36	37	38	38	4
Total	**195**	**203**	**209**	**210**	**212**	**17**

Source: DME 2017, AECOM 2018
Note: These counts exclude Inspiring Youth and Youth Services

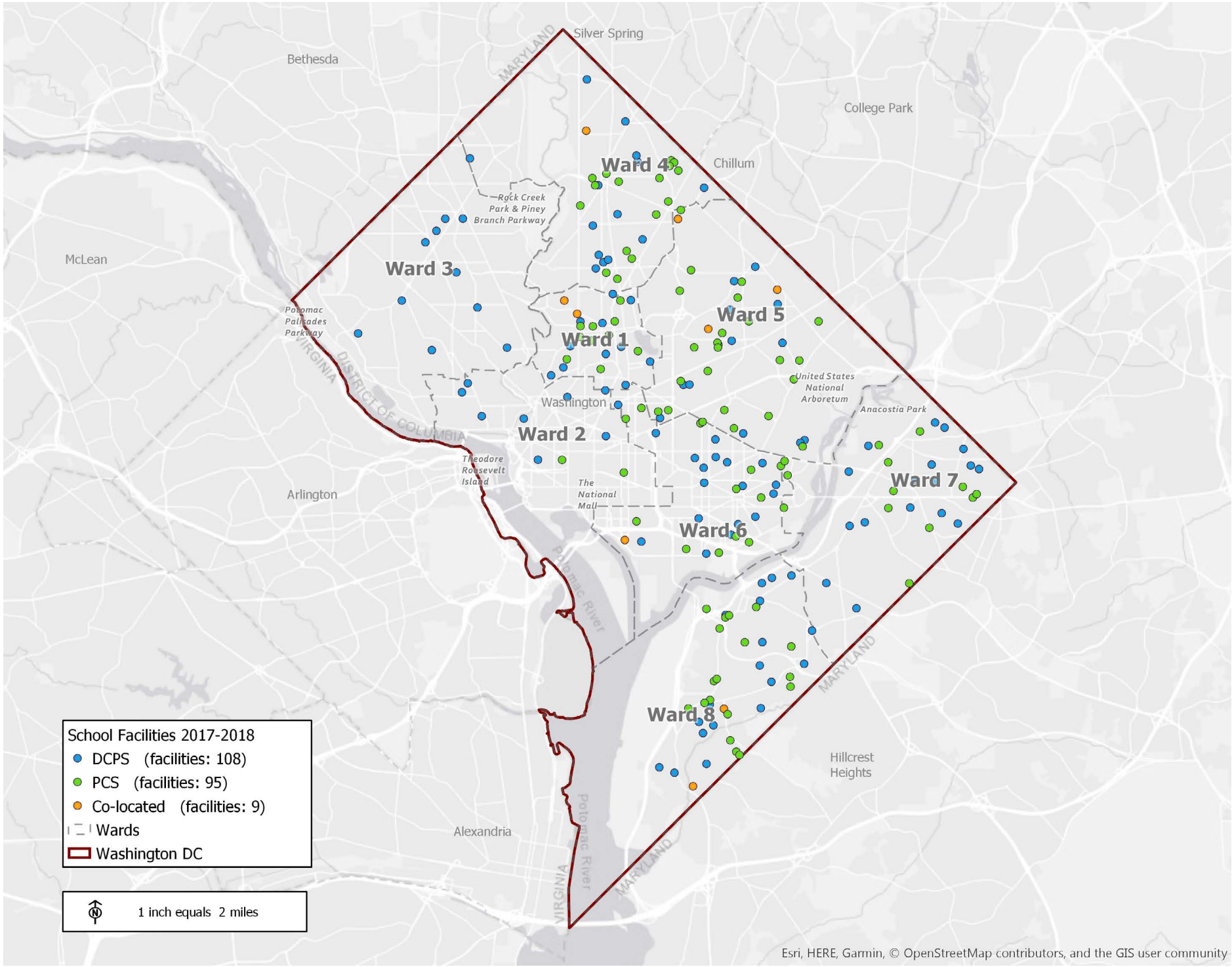

Figure 2.1 School Facilities by Sector
Source: DME 2017, AECOM 2018

facilities used by DCPS (110 of 141)[1] and 22% used by public charter schools (31 of 141). Of the 31 public charter schools in District-owned facilities, 25 are under long-term leases, four are under incubator leases, and two have leases pending. The remaining 71 school facilities are not District-owned and are utilized by public charter schools. Of these 71 facilities, 40 are commercially leased (56%), 22 are owned through private acquisition (31%), and nine are former DCPS facilities. In total, 40 former DCPS buildings are leased or owned by public charter schools.

In addition to the 212 facilities used as schools, there are 26 more District-owned facilities that are used for various reasons. Thirteen are used for educational purposes and the other 13 are used by other agencies. Of the 13 District-owned facilities used for educational purposes, there are five swing locations that are critical to the District's robust school facility modernization program. The remaining eight vacant and administrative facilities could be considered for potential future capacity or programmatic growth, as discussed in Sections 3 and 4 later in this report. **Figure 2.2** shows the ownership status of the 238 educational facilities in Washington, DC.

Table 2.4 Educational Facility Ownership Status, SY2017-18

OWNERSHIP STATUS	NUMBER
District-owned	**167**
DCPS School	110
PCS School	31
DCPS Swing, Admin, or Vacant	13
Used by Other Entity	13
Not District-owned	**71**
PCS School - Commercial Lease	40
PCS School - Own, Former DCPS Facility	9
PCS School - Own, Private Acquisition	22
Total	**238**

Source: DME 2017, AECOM 2018
Note: The two Co-located facilities that are District-owned and include DCPS schools are included with the 108 DCPS facilities.

2.1.2 Facility Modernization

At the turn of the 21st century, DCPS school facilities were suffering from decades of neglect. In 1998, the U.S. Army Corps of Engineers judged that 84% of facilities were "in poor physical condition."[2] Heating and ventilation systems failed to adequately regulate temperatures in many classrooms, roofs leaked, and windows needed replacing. The poor quality of the built environment was considered detrimental to the quality of public education in Washington, DC.[3]

The District of Columbia began the process of addressing this investment backlog in 2000 with the first MFP, which aimed "to modernize, not just renovate, Washington, DC's public schools."[4] The 2000 MFP envisioned $3.5 billion in financing on full-scale modernizations, to be carried out ten schools at a time over a 10- to 15-year period. Some modernizations were completed by 2003, but the financing stalled by the middle of the decade.

The advent of mayoral control by then-Mayor Adrian Fenty marked a major turning point in modernization efforts. The Public Education Reform Amendment Act of 2007[5] restructured DCPS, establishing it as a cabinet-level agency within the Mayor's office. The Office of Public Education Facility Modernization (OPEFM) was created as a separate executive branch entity to plan and coordinate the modernization work. OPEFM adopted a phased strategy for improvements. For elementary and middle schools, Phase 1 modernizations addressed immediate classroom improvements, such as furniture, air quality, lighting, and technology. Phase 2 included improvements to "support components" such as gymnasiums, cafeterias, and school grounds. Phase 3 addressed "system components:" mechanical, electrical, plumbing, and security. Larger schools, including high schools, were considered separately, and received "full modernizations," which were based on a more traditional renovation approach (or in some cases, demolition followed by reconstruction).

[1] The two co-located facilities that are District-owned and include DCPS schools are included with the 108 DCPS facilities.

[2] Parents United, "Separate and Unequal: The State of the District of Columbia Public Schools Fifty Years after Brown and Bolling," 2005, p. 21.

[3] 21st Century School Fund and Brookings Institution, "DC Public School and Public Charter School Capital Budgeting, Task 3 Report," 2005.

[4] Ibid, p. 22.

[5] L17-0009, effective June 12, 2007.

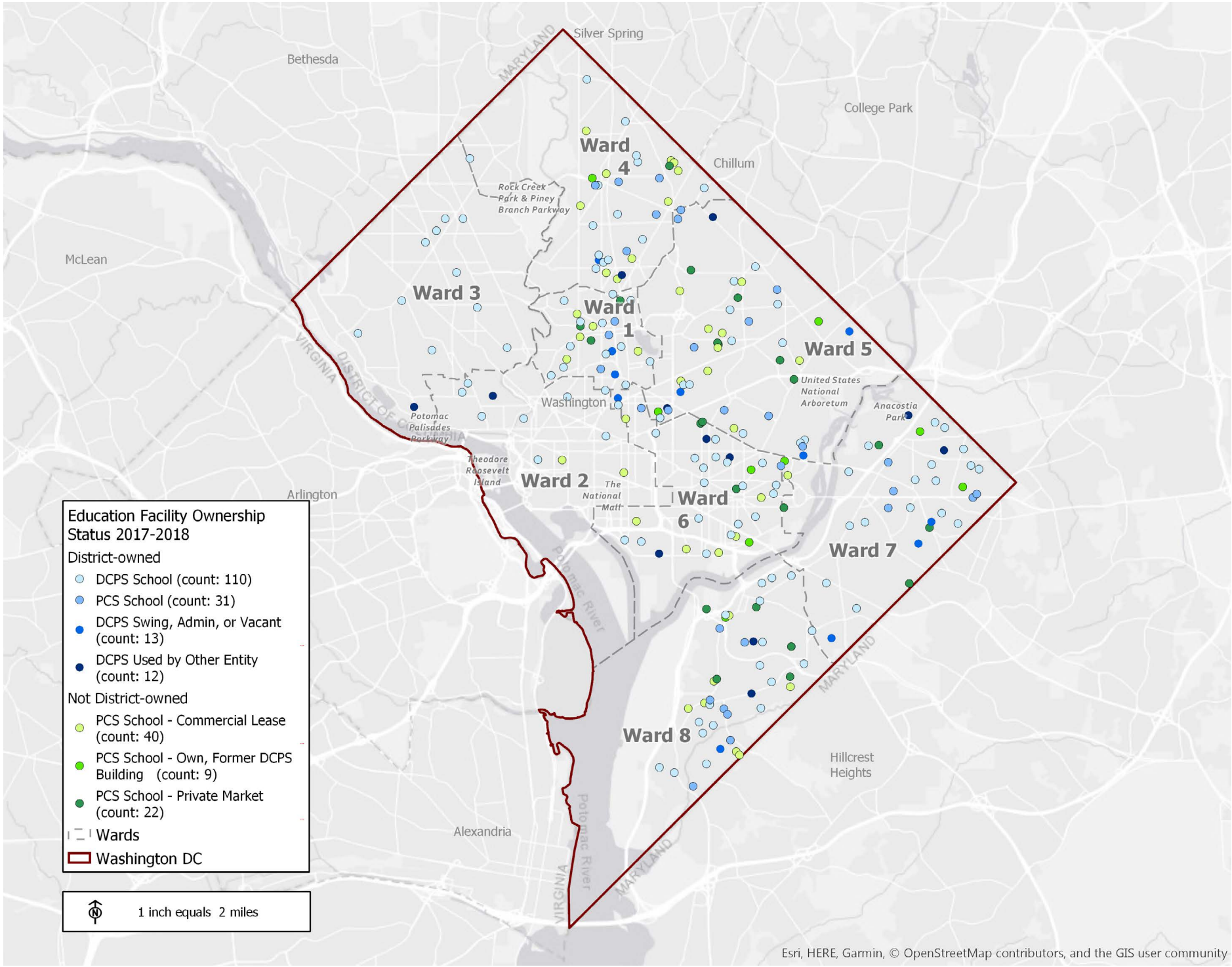

Figure 2.2 School Facilities by Ownership Status
Source: DME 2017, AECOM 2018

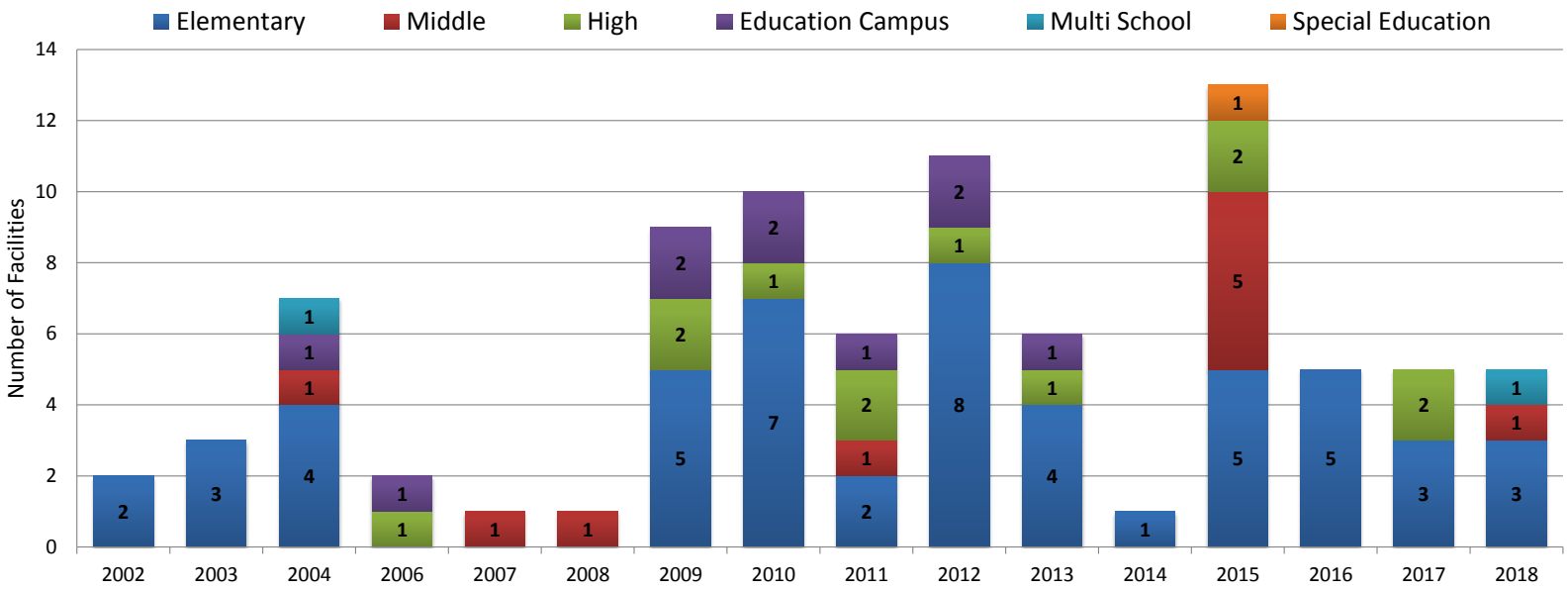

Figure 2.3 Count of DCPS Facility Modernization by Year and Grade Band
Source: DME 2017, AECOM 2018
Note: Two DCPS facilities are categorized as multi-schools, McKinley Middle School/High School and Bancroft Elementary School (co-located with Briya PCS)

OPEFM was later consolidated into the Department of General Services (DGS), which is responsible for maintenance of all District facilities, but the modernization approach remained the same throughout the 2010s, with facility modernization projects added annually to rolling six-year CIPs.

From 2002 to 2018, 79% of DCPS facilities (87 of 110)[6] were modernized or renovated. **Figure 2.3** demonstrates that most of these renovations and modernizations have occurred since 2009, with 82% (71 of 87) taking place in that span. An additional 20 school modernizations have been planned between fiscal years 2019 and 2024.

The highest number of total modernizations (both Phase I and full) have been carried out in Ward 8, followed by Wards 6 and 7, as shown in **Figure 2.4**. However, improvements were less evenly distributed when differentiating between types of modernizations. Ward 8 has received 16 facility modernizations, and 50% (8 of 16) of the modernizations were Phase 1 renovations. Ward 3 has received full modernizations for 100% (9 of 9) of its school facilities. Facilities depicted on the map are also shown in **Table 2.5** (see Appendix A.2 and Appendix A.3 for additional information on school modernizations).

One limitation of the data presented here is that it does not include data on DGS and DCPS small capital improvement projects, which are used to maintain facilities in proper condition before and after modernizations as warranted by the facility's maintenance needs. Additionally, the data presented here does not reflect all facility improvement activity during this period. The District completes school modernizations on DCPS school facilities only; public charter schools program and implement their own improvement projects and are not included in this section.

[6] The two Co-located facilities that are District-owned and include DCPS schools are included with the 108 DCPS facilities.

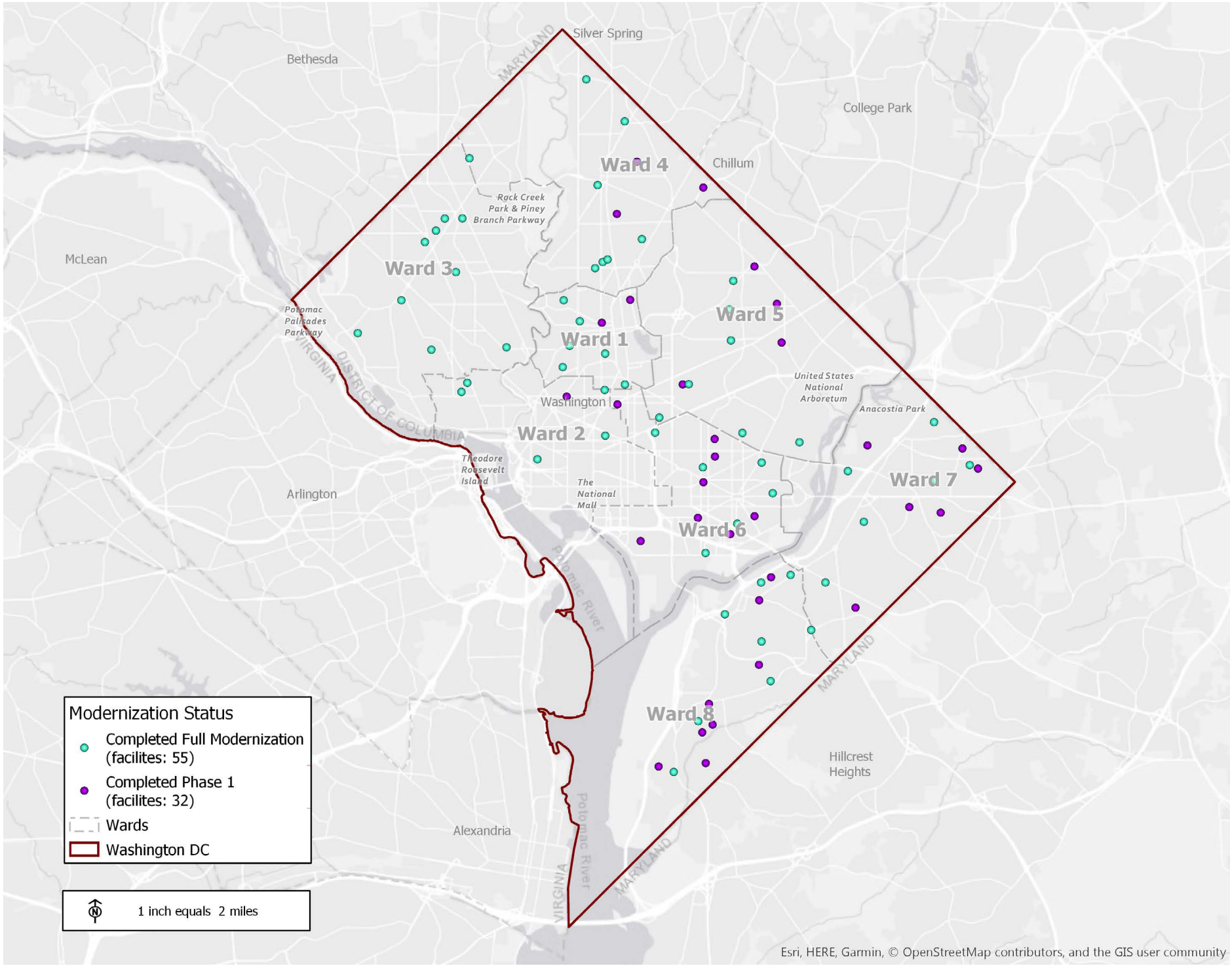

Figure 2.4 Status of Modernization of DCPS Facilities, 2002-2018
Source: DME 2017, AECOM 2018

Table 2.5 Modernization Status

COMPLETED FULL MODERNIZATION (55)				
Noyes EC	Thomson ES	Brookland MS	Janney ES	Marie Reed ES
Phelps Architecture Construction and Engineering HS	Eastern HS	Moten ES	Roosevelt HS; Roosevelt STAY	Watkins ES (Capitol Hill Cluster)
Savoy ES	Takoma EC	Turner ES	Deal MS	Duke Ellington School for the Arts
Sousa MS	Cleveland ES	Patterson ES	Van Ness ES	MacFarland MS Dual Language Program
Luke Moore Alternative HS	Wilson HS	Dunbar HS	Shepherd ES	Boone ES
Wheatley EC	Anacostia HS	Hearst ES	Stanton ES	Bancroft ES
H.D. Woodson HS	Cardozo EC	Mann ES	Key ES	Murch ES
H D Cooke ES	Randle Highlands ES	Ballou HS; Ballou STAY	Powell ES	Barnard ES
Walker-Jones EC	Oyster Adams Bilingual School (Oyster)	Stuart-Hobson MS (Capitol Hill Cluster)	Lafayette ES	Brightwood EC
School Without Walls SHS	River Terrace ES	Kelly Miller MS	Ron Brown College Preparatory High School	Columbia Heights EC (CHEC)
Stoddert ES	Miner ES	Hardy MS	Garrison ES	McKinley Technology HS

COMPLETED PHASE 1 (32)		
Burrville ES	Simon ES	Ludlow-Taylor ES
Whittier EC	Ketcham ES	Beers ES
King, M L ES	Amidon-Bowen ES	Plummer ES
Tyler ES	Burroughs EC	Kramer MS
Langley EC	LaSalle-Backus EC	Johnson John Hayden MS
Hart MS	Nalle ES	Payne ES
Seaton ES	Leckie ES	Langdon EC
Ross ES	Peabody ES (Capitol Hill Cluster)	Brent ES
Bunker Hill ES	Hendley ES	Bruce Monroe ES at Park View
Drew ES	J O Wilson ES	Thomas ES
Truesdell EC	Tubman ES	

2.1.3 Facility Conditions

The District of Columbia recently adopted a new, robust, systematic facility assessment program, with the intention of promoting comprehensive and effective management of the District's real assets, including schools. The District is currently in the middle of a three-year process (2017-2020) of assessing the condition of all school facilities under its ownership. After this initial three-year effort to establish the complete and up-to-date baseline of school facility condition, DGS will be responsible for evaluating the physical condition of each of the District-owned school facilities every three years.

This section reports on the results of 65 Facility Condition Assessments (FCAs) completed in SY2017-18 for District-owned school facilities[7,8]. The facilities covered by these FCAs accommodate DCPS schools, public charter schools leased from DGS, and co-located schools. Using the same engineering consultant, a third party has financed an additional 49 FCAs on non-District-owned school facilities occupied by public charter schools. In total, 114 FCAs have been prepared in SY2017-18. **Table 2.6** shows a breakdown of the 114 FCAs by sector (refer to Appendix A.4 and Appendix A.5 for details on FCAs for the 114 school facilities).

The FCAs calculate Facility Condition Index (FCI) scores for each facility. A relative indicator of condition, the FCI is calculated by dividing the cost of necessary maintenance, repairs, and/or replacement of deficient components or equipment, by the current replacement value of the entire facility. The FCIs in this report are based on a ten-year cost of necessary maintenance. As the cost of maintenance and repairs approaches the cost of replacement for a facility, the worse the condition of the asset and the higher the FCI value.[9] The respective FCI of DCPS and public charter school facilities in District-owned buildings are shown in **Figure 2.5** and **Figure 2.6**. Co-located facilities housing public charter schools are shown alongside PCS-only facilities in District-owned buildings.

Overall, the results of the SY2017-18 FCAs demonstrate that the District's assessed school facilities are generally in good condition. **Figure 2.7** breaks down FCI scores for school facilities District-wide; 90 of the 114 facilities assessed received a "Good" or "Fair" FCI score,

Table 2.6 School Facilities with FCA SY2017-18 by Sector

SECTOR	NUMBER OF FACILITIES
Co-located	4
DCPS	35
PCS	75
Grand Total	**114**

Source: DME 2017, AECOM 2017

[7] An FCA is an evaluation of the physical condition of a facility, focusing typically on building structure, materials and systems (ventilation, plumbing, etc.). With a 10-year horizon, the FCAs referred to in this section can be used by LEAs to plan repairs and capital investments to their school facilities.

[8] The District performed an additional 26 FCAs for district-owned facilities after the study period.

[9] Note that FCI scores are inverted: the higher the score, the worse the condition of the facility.

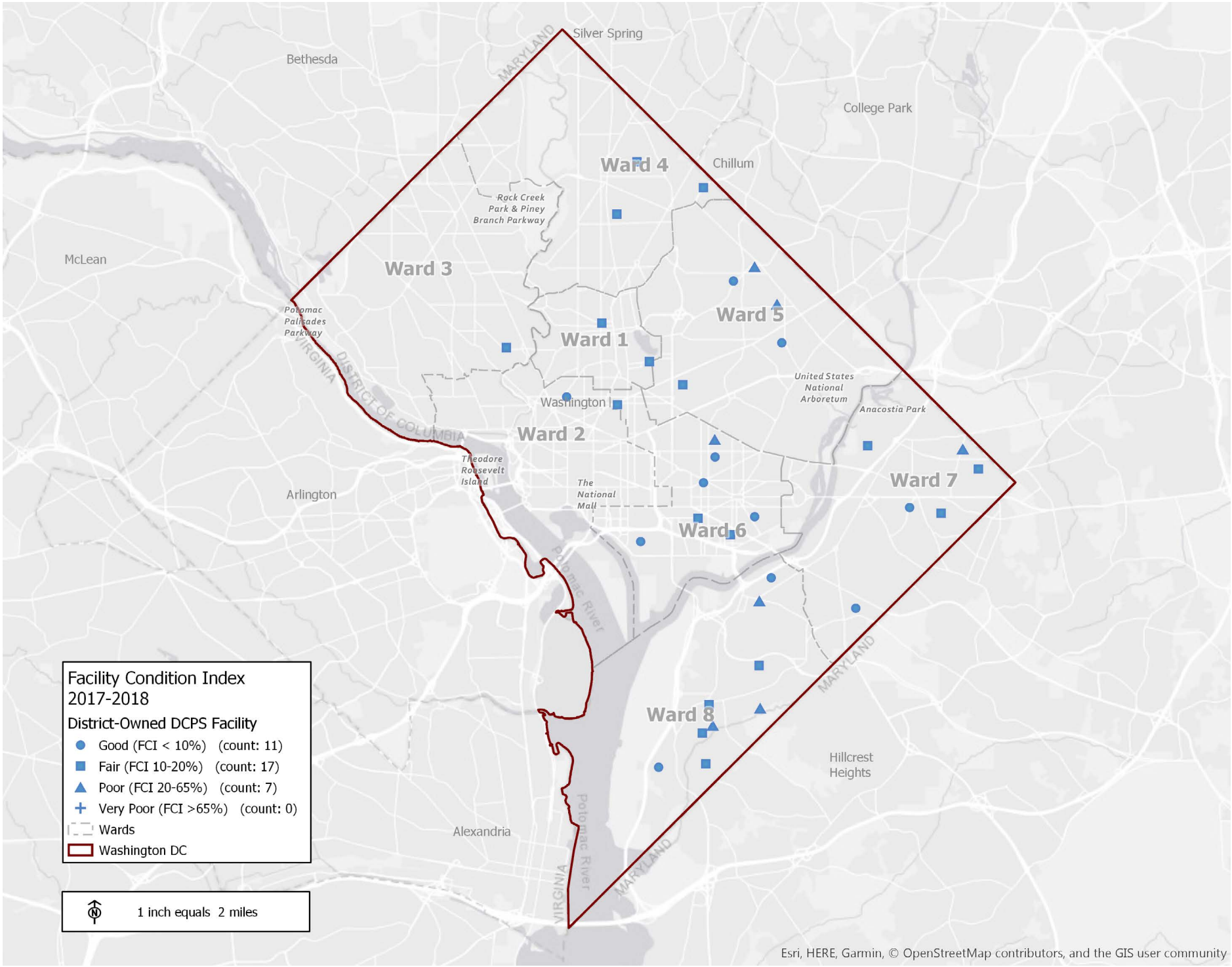

Figure 2.5 Facility Condition Index of District-Owned DCPS Facilities
Source: DME 2017, AECOM 2018

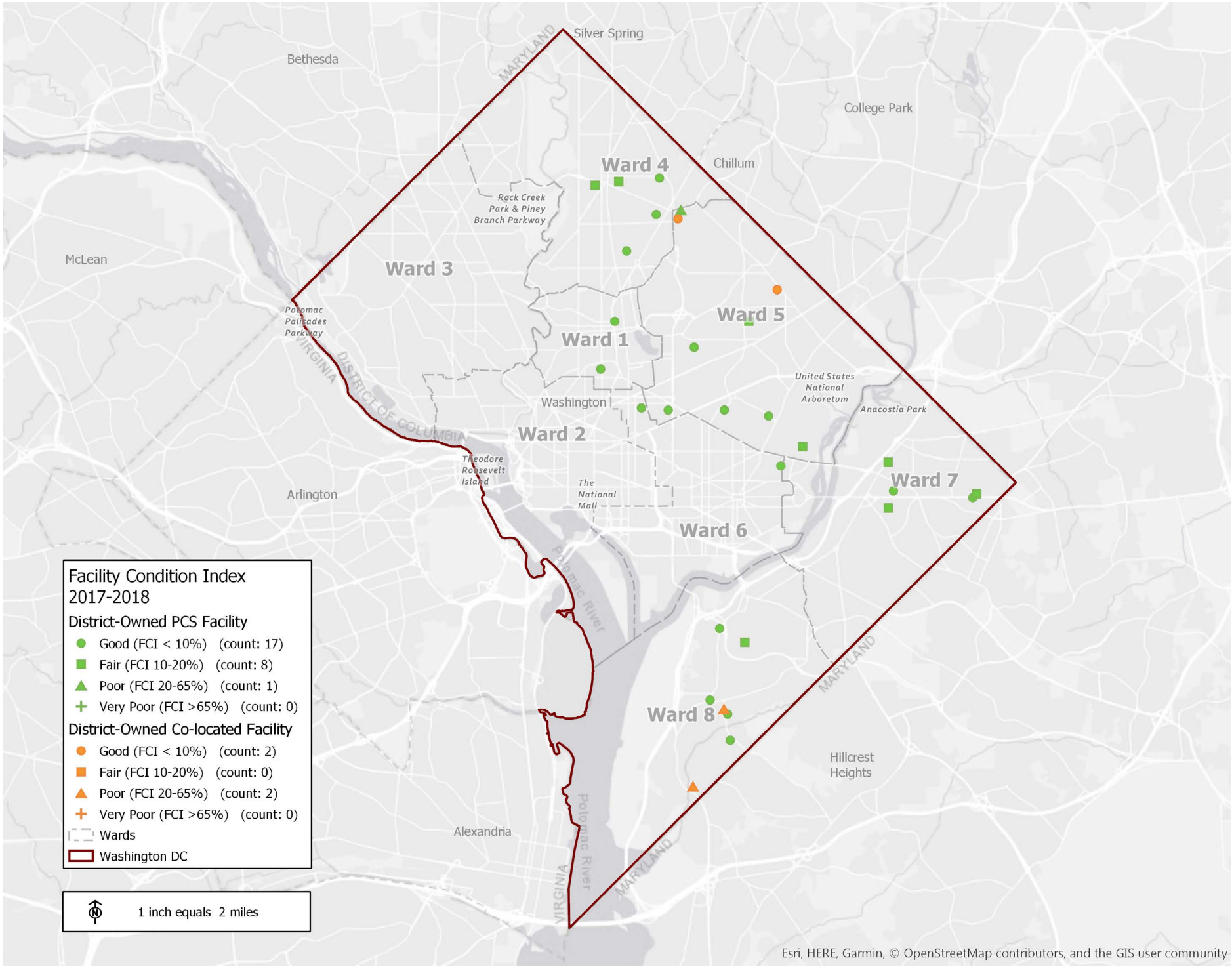

Figure 2.6 Facility Condition Index of District-Owned PCS Facilities
Source: DME 2017, AECOM 2018

meaning that their FCI scores were less than or equal to 10% (Good) or between 10% and 20% (Fair). Only 24 facilities received a Poor score (corresponding to an FCI of between 20% and 65%), while no facilities received a Very Poor score (FCI > 65%).

Of all the District-owned facilities (DCPS, public charter schools, and co-located schools), 85% (55 of 65) received a Good or Fair FCI score. Of the public charter schools in non-District-owned facilities, 71% received a Good or Fair FCI score.

For public charter schools in non-District-owned facilities, 29% received a Poor FCI score, while 12% of public charter schools in District-owned facilities scored Poor (see Appendix A.4 and Appendix A.5 for details on facility FCI scores).

Overall, the results of the SY2017-18 FCAs demonstrate that the District's school facilities are in good to fair condition.

Facility condition is clearly worse in non-District-owned facilities than in District-owned facilities. One factor contributing to this finding is the significant level of investment that the District has made since 2008 in its owned and maintained school facilities. Another possible factor is that the funding distributed to public charter schools for facilities (facilities allotment) has been insufficient to maintain charter school facilities to the same standard that DGS maintains the District-owned school buildings. Many public charter school representatives expressed this sentiment during the MFP study. Furthermore, many public charter schools lease their school facilities and do not have control over maintenance or investments. Section 4 recommends undertaking a facility cost study as a first step in considering how to promote equitable facility conditions across sectors. Section 4 also recommends more data transparency.

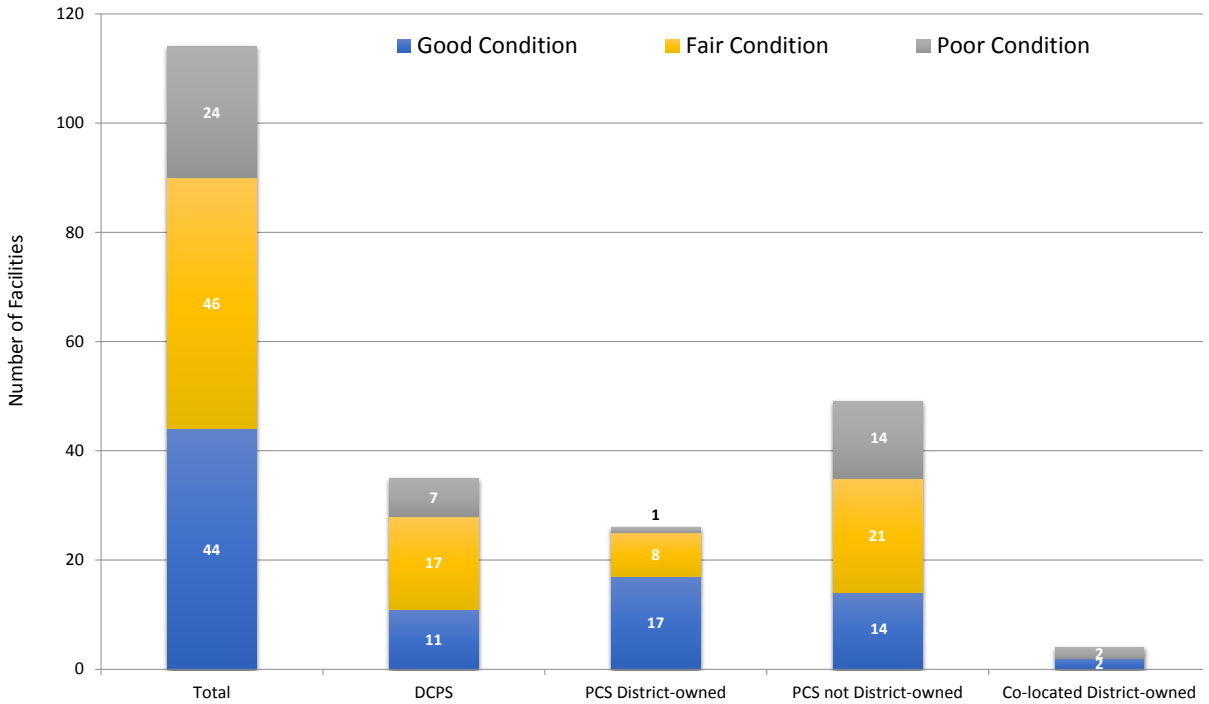

Figure 2.7 District-wide School Facility FCA, SY2017-18
Source: DME 2017, AECOM 2018

Table 2.7 shows the ten District-owned school facilities graded as Poor condition, their sectors, and their modernization status. Of the seven DCPS facilities, six have received Phase 1 renovations. Malcolm X Elementary School at Green has not received a Phase 1 renovation or a modernization; planning and design for its modernization will begin in Fiscal Year (FY) 2024, along with planning and design for modernizations of schools that received Phase 1 modernizations. Because the capital plans of public charter schools are not included in the CIP, this report can only indicate the conditions of these facilities but not if or when they are scheduled for modernization.

Table 2.7 Characteristics of Facilities with Poor FCIs

SCHOOL	WARD	SECTOR	FCI STATUS	10 YR FCI SCORE	GRADE BAND	MODERNIZATION STATUS
Ingenuity Prep PCS; National Collegiate Preparatory PCHS	Ward 8	Co-located	Poor	35.69%	Multi School	N/A - PCS
Ketcham ES	Ward 8	DCPS	Poor	34.90%	Elementary	Phase 1 Renovation
Malcolm X ES at Green	Ward 8	DCPS	Poor	29.71%	Elementary	In FY19-24 CIP
Burroughs EC	Ward 5	DCPS	Poor	28.01%	Elementary	Phase 1 Renovation
Somerset Preparatory Academy PCS; Community College Preparatory Academy PCS [Wheeler Road]	Ward 8	Co-located	Poor	26.89%	Multi School	N/A - PCS
Bunker Hill ES	Ward 5	DCPS	Poor	23.13%	Elementary	Phase 1 Renovation
Hart MS	Ward 8	DCPS	Poor	22.77%	Middle	Phase 1 Renovation
Burrville ES	Ward 7	DCPS	Poor	21.34%	Elementary	Phase 1 Renovation
DC Bilingual PCS	Ward 5	PCS	Poor	21.31%	Elementary	N/A - PCS
J O Wilson ES	Ward 6	DCPS	Poor	21.08%	Elementary	Phase 1 Renovation

2.1.4 Program Distribution

This section examines specialized academic program data provided by DCPS and public charter schools. Specialized programs are based on definitions provided by My School DC (MSDC) and are agreed upon by DCPS and the DC Public Charter School Board (DC PCSB) (see Appendix A.6). For this reason, this data used for this analysis may not include a complete listing of all specialized programming in schools.

The following specialty programs are analyzed by location, sector, and grade band: International Baccalaureate (IB); Dual Language and Language Immersion; Extended Year Program; Montessori; Science, Technology, Engineering, and Math (STEM); Arts Integration; Career Technical Education; and "Other." Other Specialized Programs include Application High Schools, Alternative Diploma Granting, and Campus Dual College Enrollment. In cases where schools are co-located, they are counted individually in terms of specialized programs.

Out of all the DCPS, PCS, and co-located facilities offering SY2017-18 specialized programs, 36% of facilities (76 of 212) offer at least one of the listed specialized programs; 64% of those facilities are DCPS (49 of 76), 28% are PCS (21 of 76), and 8% are co-located (6 of 76), as seen in **Figure 2.9**.

Across Washington, DC, Dual Language/Language Immersion is the most frequently offered specialized program and accounts for 21% of all programs, as seen in **Figure 2.8**. Other Specialized Programs accounts for 21% of the specialized programs offered in Washington, DC. The two programs with the fewest offerings are Montessori and STEM, each accounting for 7% of all programs.

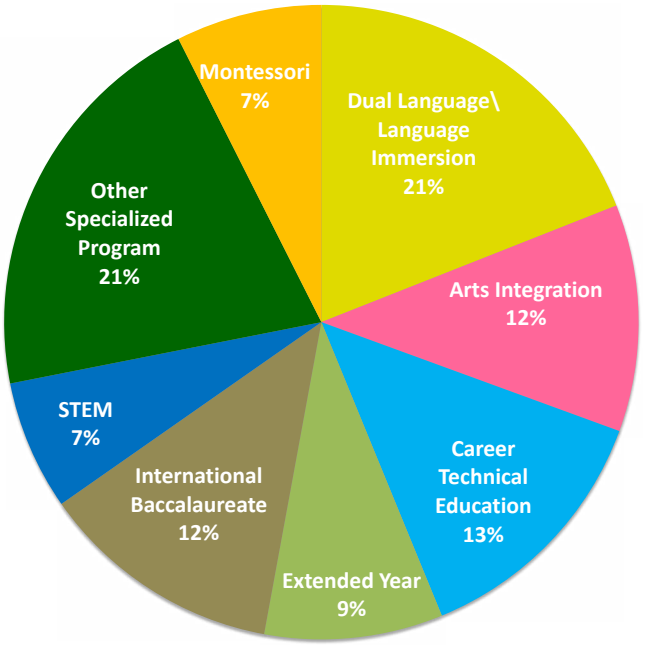

Figure 2.8 Breakdown of Specialized Programs District-wide, SY2017-18
Source: DME 2017, AECOM 2018

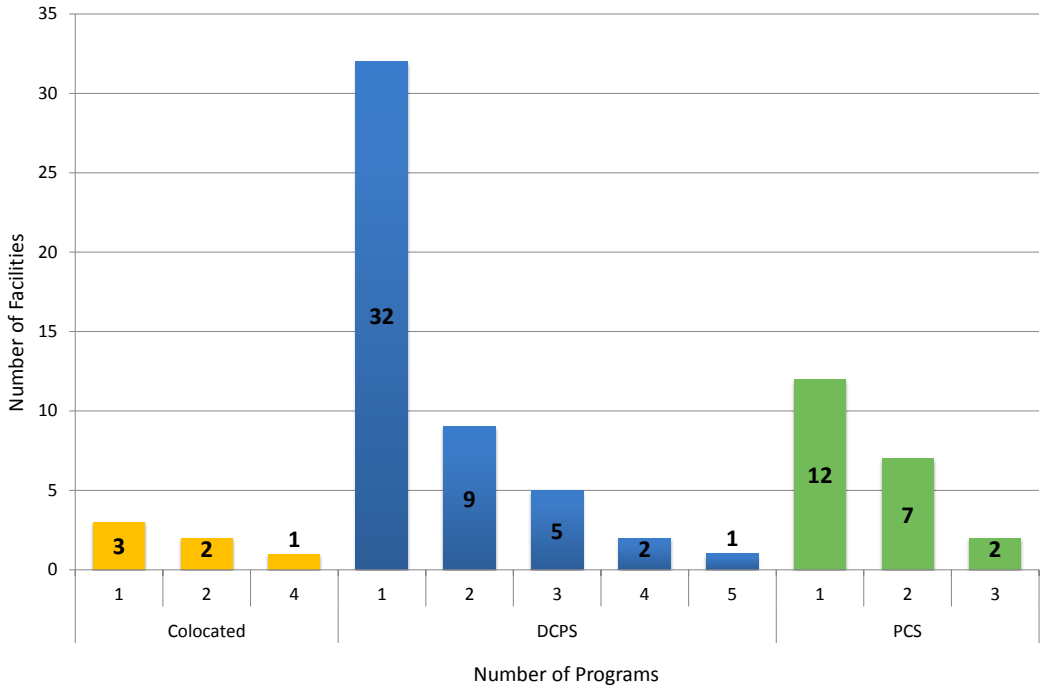

Figure 2.9 Number of Facilities by Number of Programs, SY2017-18
Source: DME 2017, AECOM 2018

As shown in **Figure 2.10**, schools in Ward 5 have the largest number of specialized programs, with 31 programs offered by various DCPS, PCS, and co-located facilities; Ward 8 ranks second with 20 programs. It should be noted that Wards 5 and 8 also have the most school facilities. **Figure 2.11** highlights the number of specialized programs offered within school facilities, across all wards. Schools in Wards 2 and 3 offer the fewest programs, with one specialized program per facility in Ward 3. It should be noted that Wards 2 and 3 also include the fewest number of school facilities across Washington, DC.

Figure 2.12 shows the locations and number of specialized programs: IB, Dual Language/Language Immersion, Extended Year, and Career Technical Education (see Appendix A.7 for list of schools by name). Ward 7 does not offer IB programs, and of the 13 school facilities that do offer IB, the largest concentration is in Ward 5, with four facilities. Schools in Wards 2 and 8 do not offer Dual Language/Language Immersion, and of the 22 school facilities offering Dual Language/Language Immersion, the highest concentration is found in Ward 4, with seven facilities. Extended Year programs are exclusively offered by DCPS, with nine of the 11 facilities being located in Wards 7 and 8. Like Extended Year programs, Career Technical programs are only offered in DCPS school facilities, with their highest concentration found within Ward 5.

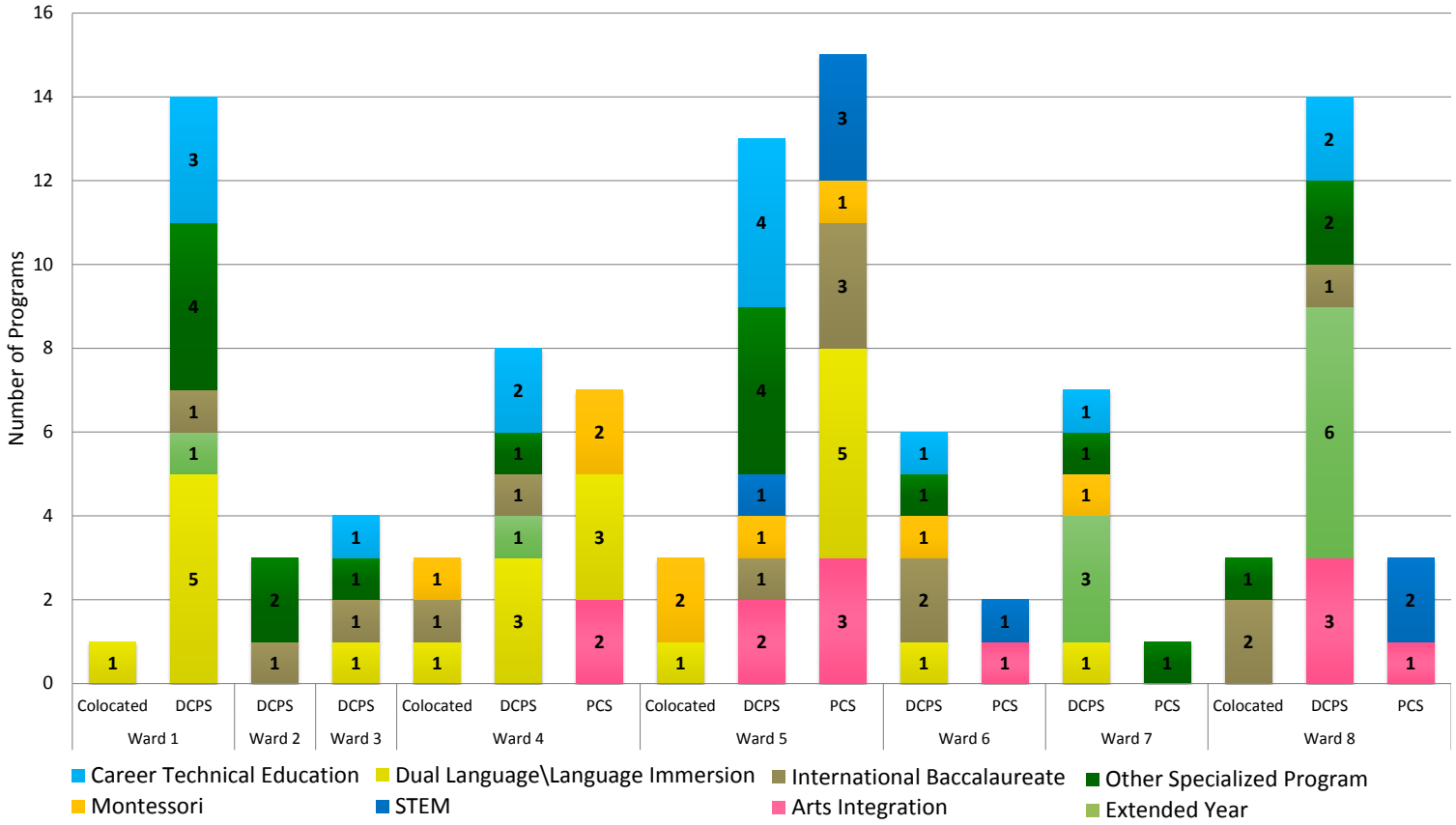

Figure 2.10 Specialized Programs Count by Sector and ward
Source: DME 2017, AECOM 2018

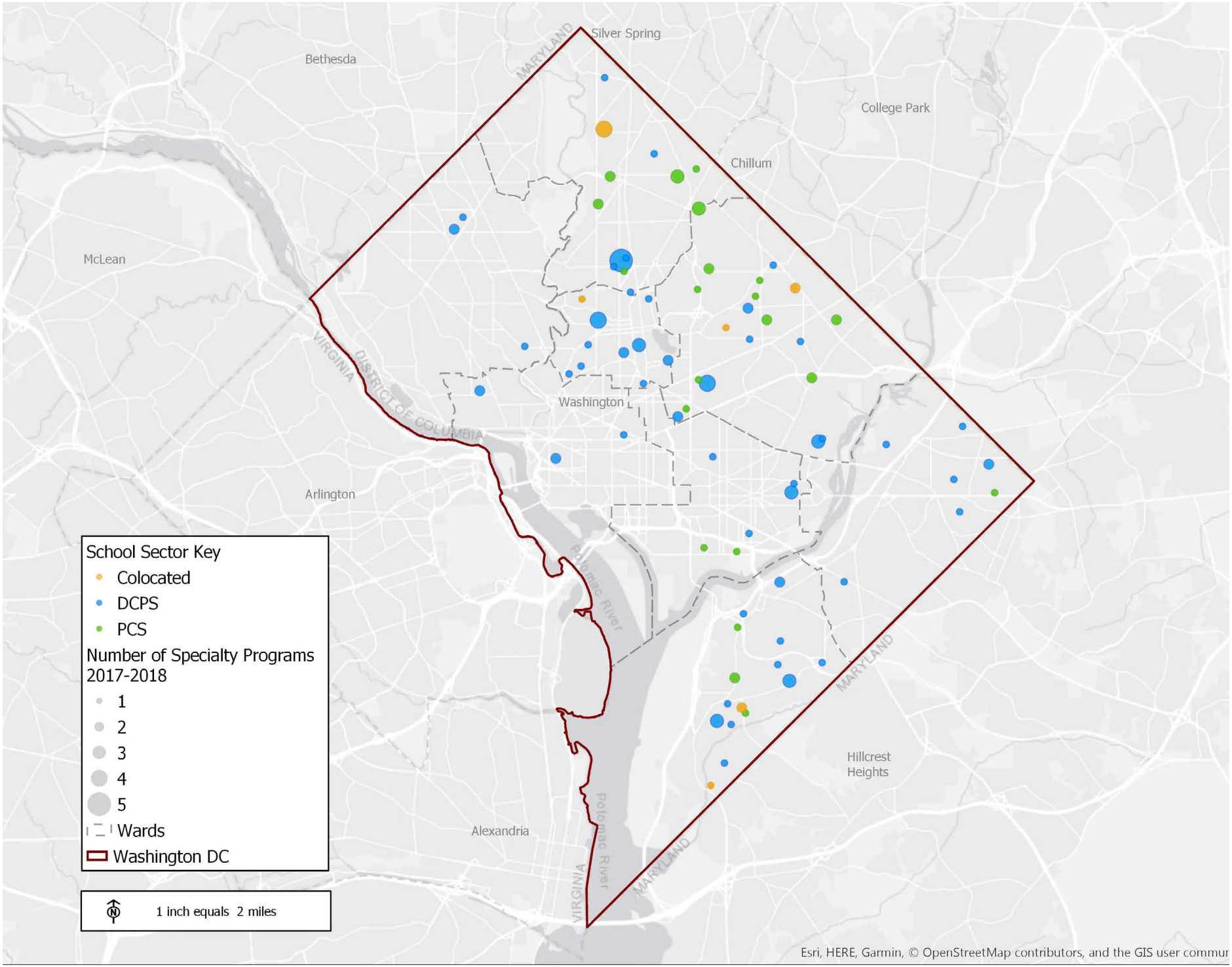

Figure 2.11 Number of Specialized Programs by Sector
Source: DME 2017, AECOM 2018

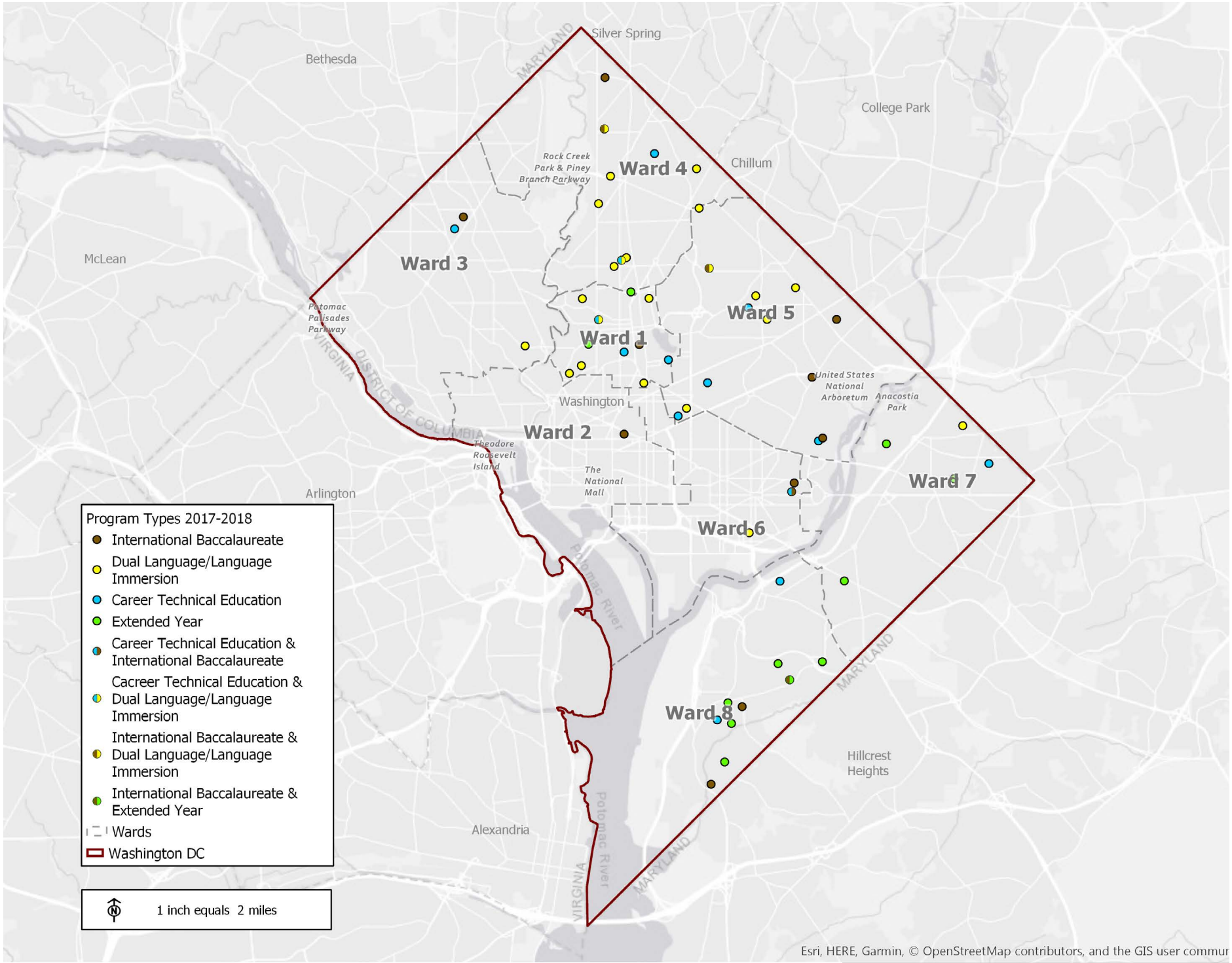

Figure 2.12 Program Types, SY2017–2018
Source: DME 2017, AECOM 2018

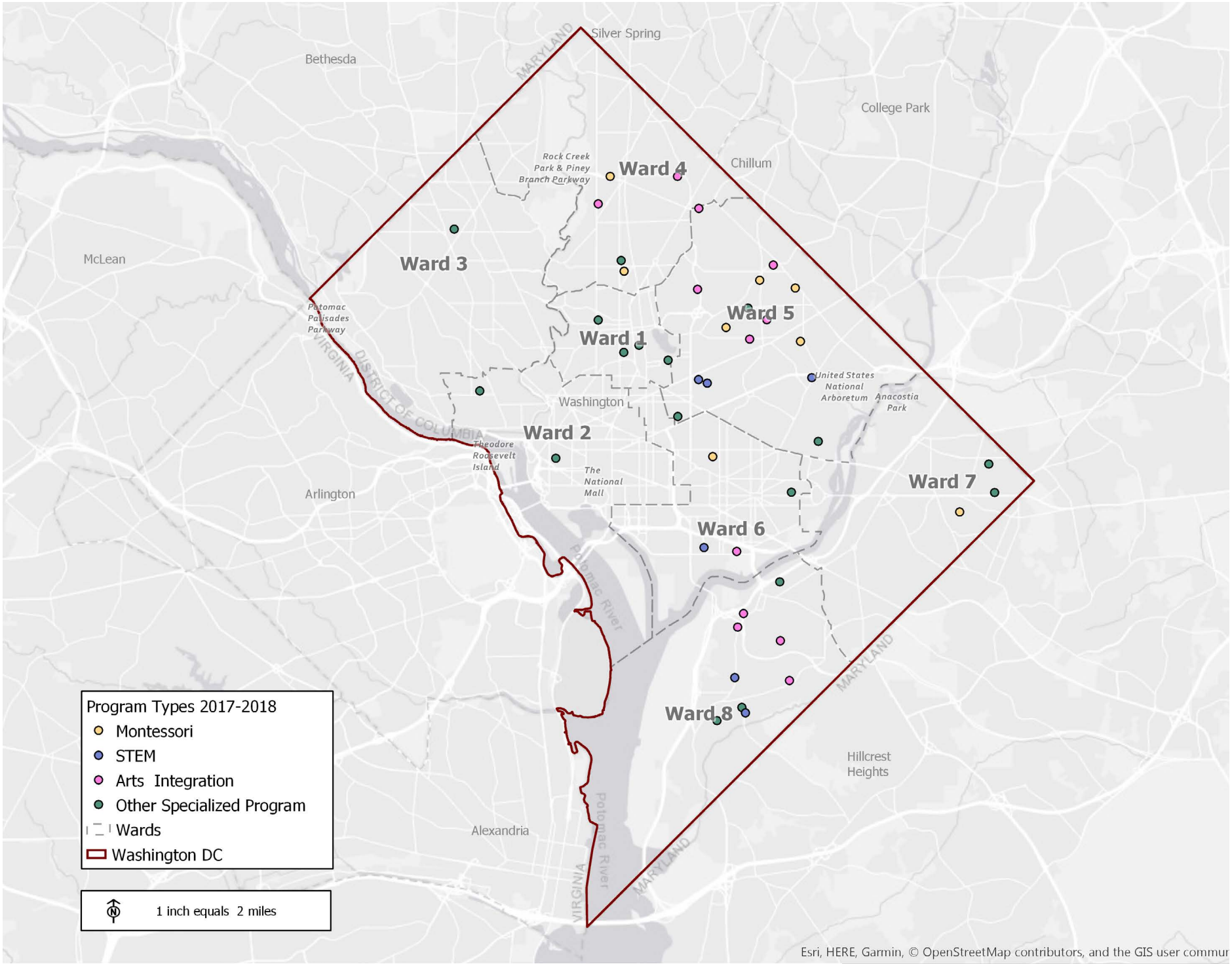

Figure 2.13 Program Types (continued), SY2017–2018
Source: DME 2017, AECOM 2018

Figure 2.13 shows the location and number of educational programs offered, including Montessori, STEM, Arts Integration, and Other Specialized Programs (see Appendix A.7 for list of schools by name). STEM and Montessori programs are the least represented among school facilities in Washington, DC, with only six and eight facilities, respectively, offering those programs. Arts Integration and Career Technical Education programs are the next most prevalent within Washington, DC, with Career Technical being more evenly distributed than Arts Integration, which is mostly found within Wards 5 and 8 of Washington, DC (refer to Appendix A.7).

Across grade bands, 54% of specialized programs (41 of 76) are offered by elementary school facilities. **Figure 2.14** shows that 14 of the 40 programs offered in elementary schools are Dual Language/Language Immersion programs; at the same time, only eight public education facilities reported having Dual Language/Language Immersion beyond the elementary school level. Arts Integration and Extended Year are the second most widespread programs, with seven facilities offering the program in the elementary school level. Middle school facilities offer the fewest number of programs overall, and the programs that are offered are offered only by DCPS middle schools. Program distribution by grade band is compared to enrollment by grade in Chapter 3 as part of the analysis of school facility supply and demand.

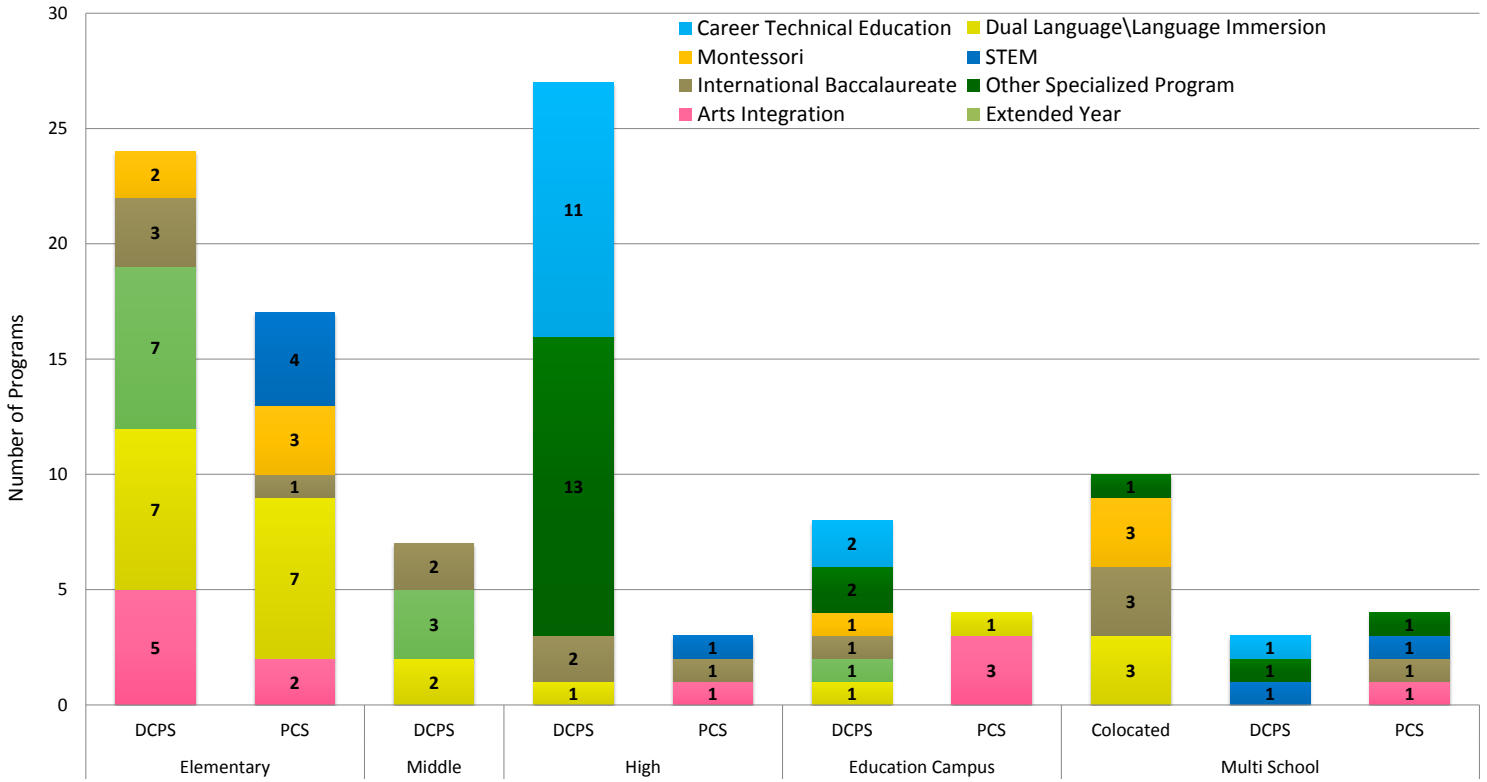

Figure 2.14 Specialized Program Count by Sector and Grade Band, SY2017-18
Source: DME 2017, AECOM 2018

2.1.5 Health and Safety

The District of Columbia has taken steps in recent years to address the most pressing issues related to health and safety in public schools. This section summarizes the efforts related to controlling lead in drinking water, monitoring and remediating asbestos, monitoring carbon monoxide, and enhancing readiness in case of emergencies.

Lead in Water

Lead in drinking water is toxic to humans, and is particularly harmful to youth and young children. The previously common use of lead service water lines and lead pipes in the United States continues to put young children and students at risk of exposure to lead in drinking water.

To reduce students' exposure to lead in drinking water, the District began a robust two-year effort in 2016 to install lead filters on all drinking water sources in all public school facilities. The District also has one of the most stringent lead filtration programs in the United States, with an actionable level of 5 parts per billion (ppb),[10] compared with the EPA-recommended actionable level of 15 ppb.

In 2017 the Childhood Lead Exposure Prevention Amendment Act of 2017 (DC Law 22-21) codified the District's efforts by requiring that all drinking water sources in all public schools be filtered for lead and each drinking water source be tested annually. The law also codifies the actionable level of lead at 5 ppb. Drinking water sources that have concentrations of lead in water above 5 ppb must be immediately removed from service and remediation steps must occur. The drinking water source cannot be returned to service until the concentration of lead in water is below 5 ppb.

Lead in water test results for both DCPS and public charter schools are publicly available online on DCPS and DC PCSB websites.

Asbestos Monitoring

The Asbestos Hazard Emergency Response Act (AHERA)[11] and its regulations require public and non-profit school districts (including charter schools) to inspect their school facilities for asbestos-containing material and to prepare asbestos management plans. The law requires an initial inspection as well as additional inspections every three years. The law also requires a yearly update to parents of any changes to the asbestos management plans as well as notification of the availability of the school's asbestos management plan upon request.[12]

For DCPS school facilities, DGS follows AHERA guidelines by conducting triennial inspections and biannual monitoring of schools and by maintaining an asbestos management plan for each school in the DCPS inventory. Asbestos

[10] US Government Accountability Office. (2018, July). ***Lead Testing of School Drinking Water Would Benefit from Improved Federal Guidance*** (GAO Publication No. 18-382). Washington, D.C.: U.S. Government Printing Office. Retrieved October 11, 2018 https://www.gao.gov/assets/700/692979.pdf.

[11] Retrieved October 24, 2018 https://www.gpo.gov/fdsys/pkg/USCODE-2009-title15/html/USCODE-2009-title15-chap53-subchapII.htm.

[12] Retrieved October 11, 2018 https://www.epa.gov/asbestos/asbestos-and-school-buildings.

management plans are available to the public upon request per AHERA.

Ninety-one DCPS facilities have been assessed with 6-month surveillance and 3-year re-inspections and, if necessary, remediated. All other school buildings are certified as asbestos-free per DGS's 2017 Healthy Public Building Assessment Act Report.[13]

The PCSB conducts an annual survey in which charter schools are asked if there are known asbestos hazards in its facilities. The PCSB has made asbestos hazards found in this survey available online.

CO Monitoring

DGS assesses facilities for carbon monoxide (CO) as part of its annual inspection of government facilities, including DCPS facilities, per the DC Healthy Public Buildings Assessment Act of 2016.[14]

The PCSB conducts an annual facilities survey in which charter schools are asked if their schools have CO monitors. The PCSB has made CO monitor concerns found in this survey available online.

Emergency Readiness

The District has developed the Safety Through Resiliency Assessment Planning (STRAP) Pilot Project to proactively address gaps in school-level emergency planning. The STRAP Pilot Project is led by the District of Columbia's Homeland Security Emergency Management Agency (HSEMA) in close collaboration with DCPS to conduct comprehensive assessments of the internal, external, and virtual components of District facilities.

The STRAP Pilot Project has two primary objectives:

1. Provide facilities with a better understanding of their site-specific vulnerabilities, enhancing safety and security efforts in the District of Columbia.

2. Provide a road map to District decision makers to cluster multiple and similar site vulnerabilities for improvement implementations.

This pilot project represents best-practices in identifying significant gaps in emergency planning before an incident occurs. It will be performed at 16 DCPS schools across all eight wards. After the completion of the pilot, HSEMA will explore extending assessments to all school facilities, both DCPS and charter.

[13] https://dgs.dc.gov/sites/default/files/dc/sites/dgs/publication/attachments/Healthy%20Building%20Act%20Report%202017%20Final%203.19.18.pdf.

[14] Healthy Public Buildings Assessment Act of 2016 (D.C. Law 21-237).

2.1.6 Transportation and Other District Facilities

Other District of Columbia Government facilities besides school facilities provide additional amenities that support the education and quality of life of public school children and families in Washington, DC, like public transportation, parks and recreation sites, and public libraries. The proximity of such amenities to schools make it more likely that students of nearby school facilities will use them, but there are other factors that also determine if and how students will use nearby amenities. The following analysis is spatial and does not take into account actual use patterns.

This section also investigates District-owned facilities that could potentially be converted to educational use in the future. Given the tight real estate market in Washington, DC, and the high proportion of public school development and operating costs to facility costs, the District could consider making underutilized real assets available for the purposes of aligning school capacity with future needs as necessary.

Public Transit Proximity and Level of Service

Proximity and level of service (LOS) of public transportation are important factors to consider when examining amenities that support school children and families. **Figure 2.15** shows the half-mile walking distance around public transit stops (Metrorail and bus stops) using the existing street network in Washington, DC. This basic proximity analysis helps to determine the overall coverage of the public transit system within Washington, DC. However, access to transit stops within half-mile walking distances does not guarantee a similar level of transit service; besides distance, the other important factor is the frequency of the service. People who live in places where the bus comes once an hour are not as well served by transit as people who live in areas where the bus comes every ten minutes. Additionally, the existence of a nearby bus or Metrorail line does not necessarily provide efficient transit to/from the home of students that may attend a given school facility.

94% of school facilities are within a half-mile walk from a public transit stop.

The public transit LOS is based on the frequency of transit trips available in the half-mile areas during a specific time window; in this case, Tuesday, from 6:00 to 9:00 a.m., which is selected as a representative time window for public school students. The frequency of transit trips is calculated in trips per hour, and is the number of times a bus or Metrorail picks up at a location over three hours. **Figure 2.16** identifies the level of public transit service within Washington, DC; well-served areas are represented in dark purple.

Wards 1 and 2 have the highest level of public transit service in Washington, DC.

Expanding upon the LOS analysis, **Figure 2.17** highlights the LOS for each school facility within Washington, DC. Much like the overall public transit LOS, the facility level of transit service is based on the number of transit trips available within a half-mile walk of each facility during the same Tuesday morning time window.[15] The size of each circle is proportional to the number of public transit trips available to each facility per hour between 6:00 to 9:00 a.m.

[15] All three figures utilize the Washington Metropolitan Area Transit Authority's (WMATA) trip planning data, which is stored in the General Transit Feed Specification (GTFS) data format.

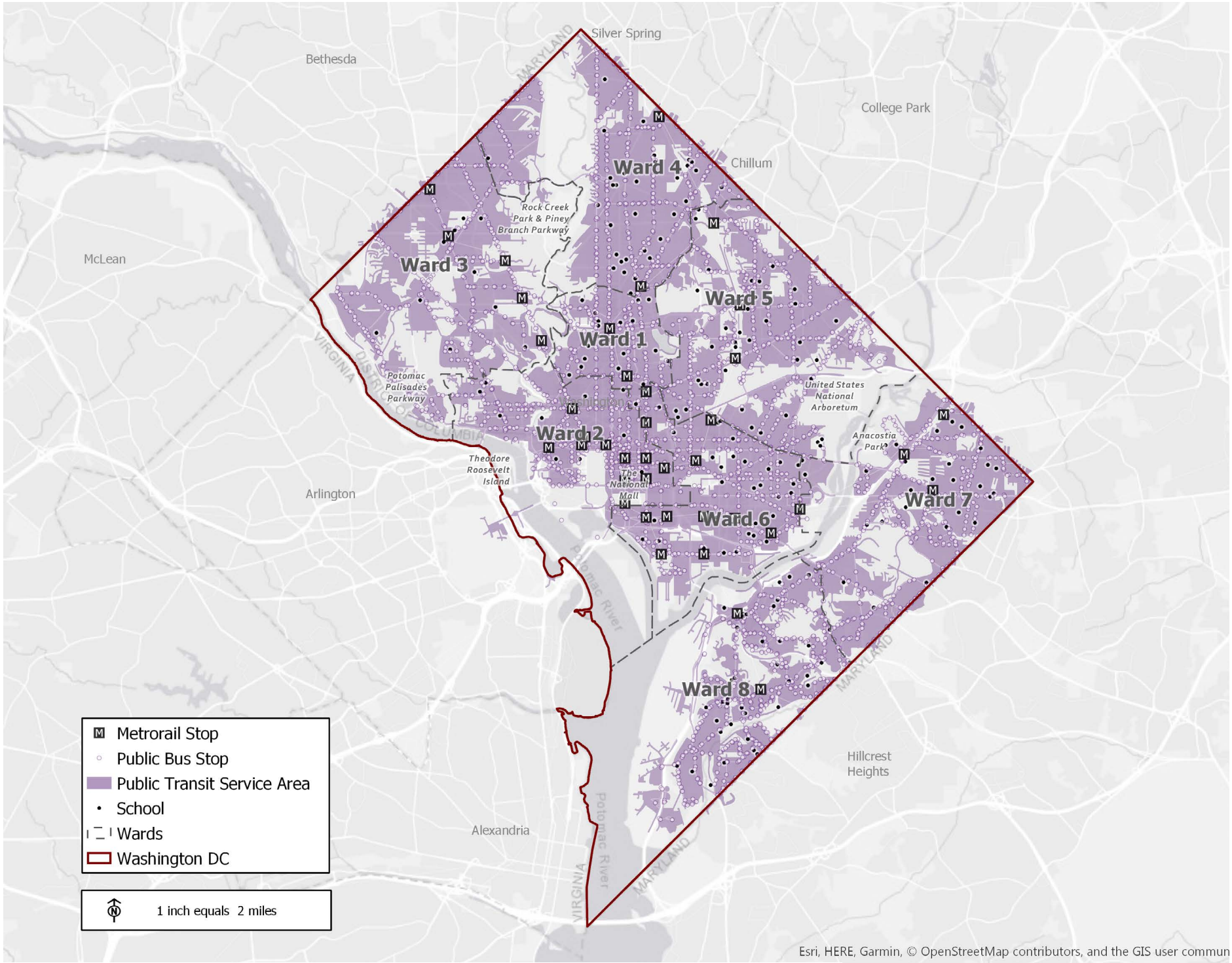

Figure 2.15 Public Transit Service Area
Source: DME 2017, WMATA 2018, AECOM 2018

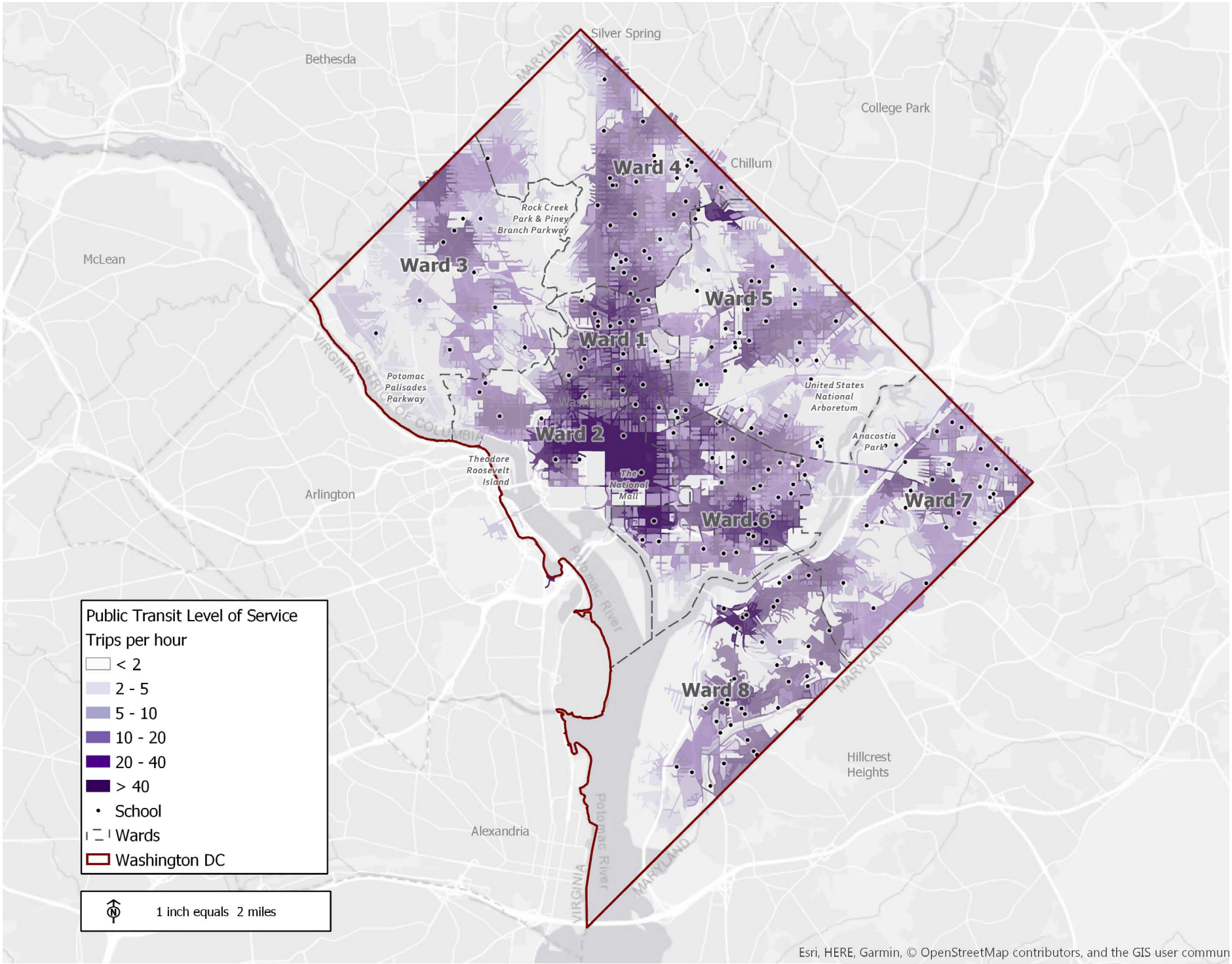

Figure 2.16 Transit Level of Service
Source: DME 2017, WMATA 2018, AECOM 2018

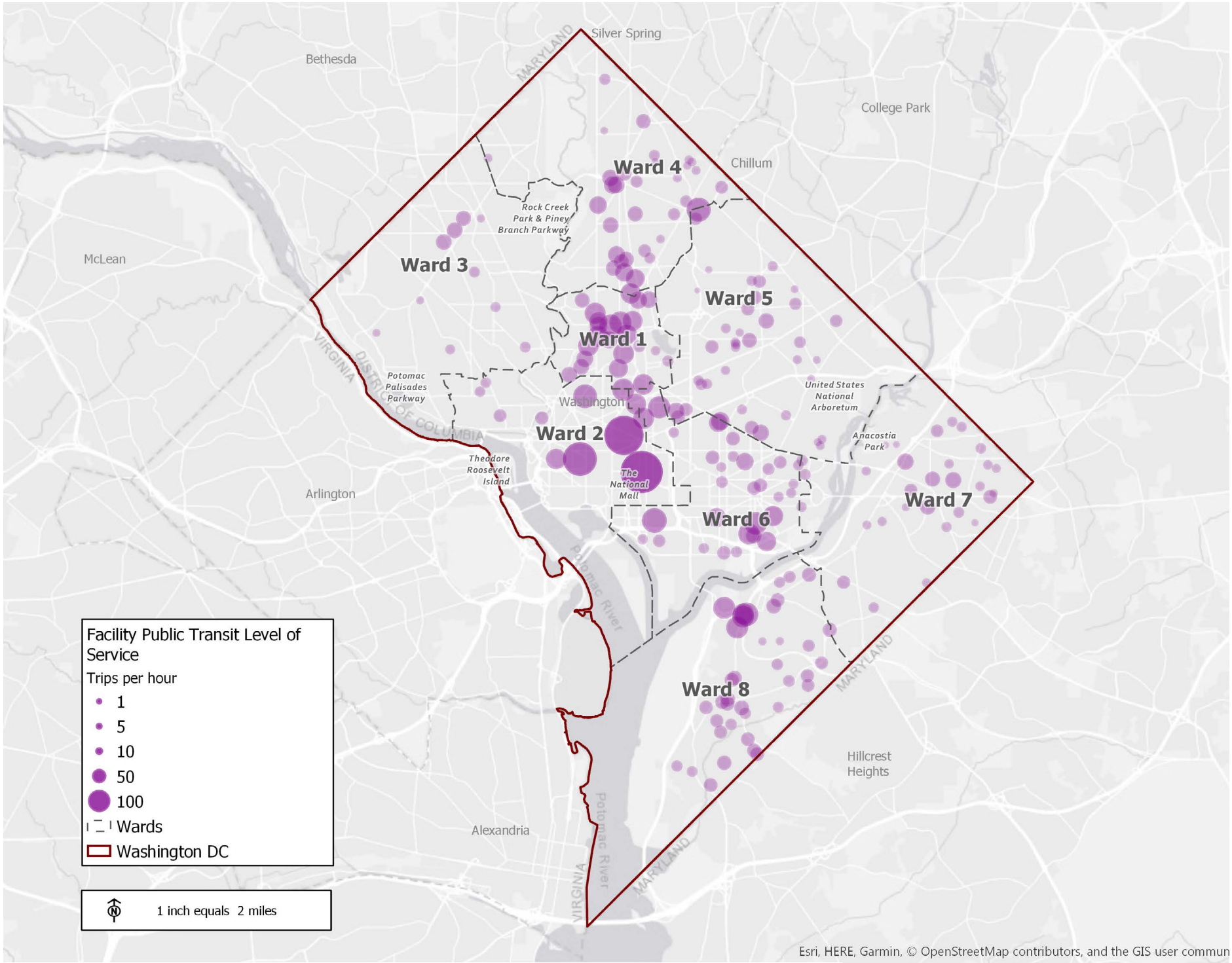

Figure 2.17 Transit Level of Service by Facilities
Source: DME 2017, WMATA 2018, AECOM 2018

On average, Ward 7 has the lowest level of transit service for school facilities; Wards 3 and 5 have the next lowest level of transit service, as seen in **Table 2.8**. School facilities within these wards are not well served by public transit, and students attending schools in these wards have reduced access to public transportation. Conversely, Ward 2 has the highest average trips per hour, and thus the highest level of transit service for school facilities.

Although this MFP did not investigate the correlation between level of public transit service and student enrollment at individual facilities, it is apparent that access to transit may influence student enrollment at individual facilities, especially at facilities with lower frequencies of transit trips available within a half-mile at the beginning of the school day. At the time of the writing of this report, there is a limited knowledge of what modes of transportation students are utilizing to travel to school.

The very uneven level of transit service across Washington, DC indicates that some students may have difficulty accessing their school of choice.

Table 2.8 School Facility Average Trips per Hour by Ward

WARD	AVERAGE TRIPS PER HOUR
Ward 1	70
Ward 2	102
Ward 3	31
Ward 4	42
Ward 5	31
Ward 6	54
Ward 7	28
Ward 8	47
Total Average	**46**

Source: DME 2017, WMATA 2018, AECOM 2018

Walkability to Supporting Facilities

Like transit facilities, parks, libraries, and recreation centers, also pay an important role in supporting students' educational and extracurricular activities. **Figure 2.18** shows the locations of libraries, recreation centers, and parks that are owned and managed by the District, and their relative location to school facilities. **Figure 2.19** shows a half-mile walking distance from each school facility and the number of recreation centers within each walking distance. The dark green areas indicate a high concentration of recreation sites within a half-mile walk from a school facility. Two-thirds (142 of 212) of school facilities are accessible to recreation centers within a half-mile walk.

Figure 2.20 shows the areas of District parks, measured in square feet, which are within the same half-mile walking distance from each school facility. Eleven school facilities are not accessible to parks within a half-mile walk distance. However, five of the eleven "no access to parks" facilities are within walking distance of either the National Mall or the National Arboretum.

Figure 2.21 shows the number of District libraries within a half-mile walk distance from each school. The majority of school facilities (136 of 212) do not have access to libraries within a half-mile walk. It should be noted that there are fewer library facilities compared to recreation and park sites, with no school facility having more than one library within its half-mile walk distance.

Based on the results of this analysis, it appears that recreation centers and parks are highly accessible to residents – including students – across the whole District.

Recreation centers and parks are highly accessible to residents – including students – across the whole District.

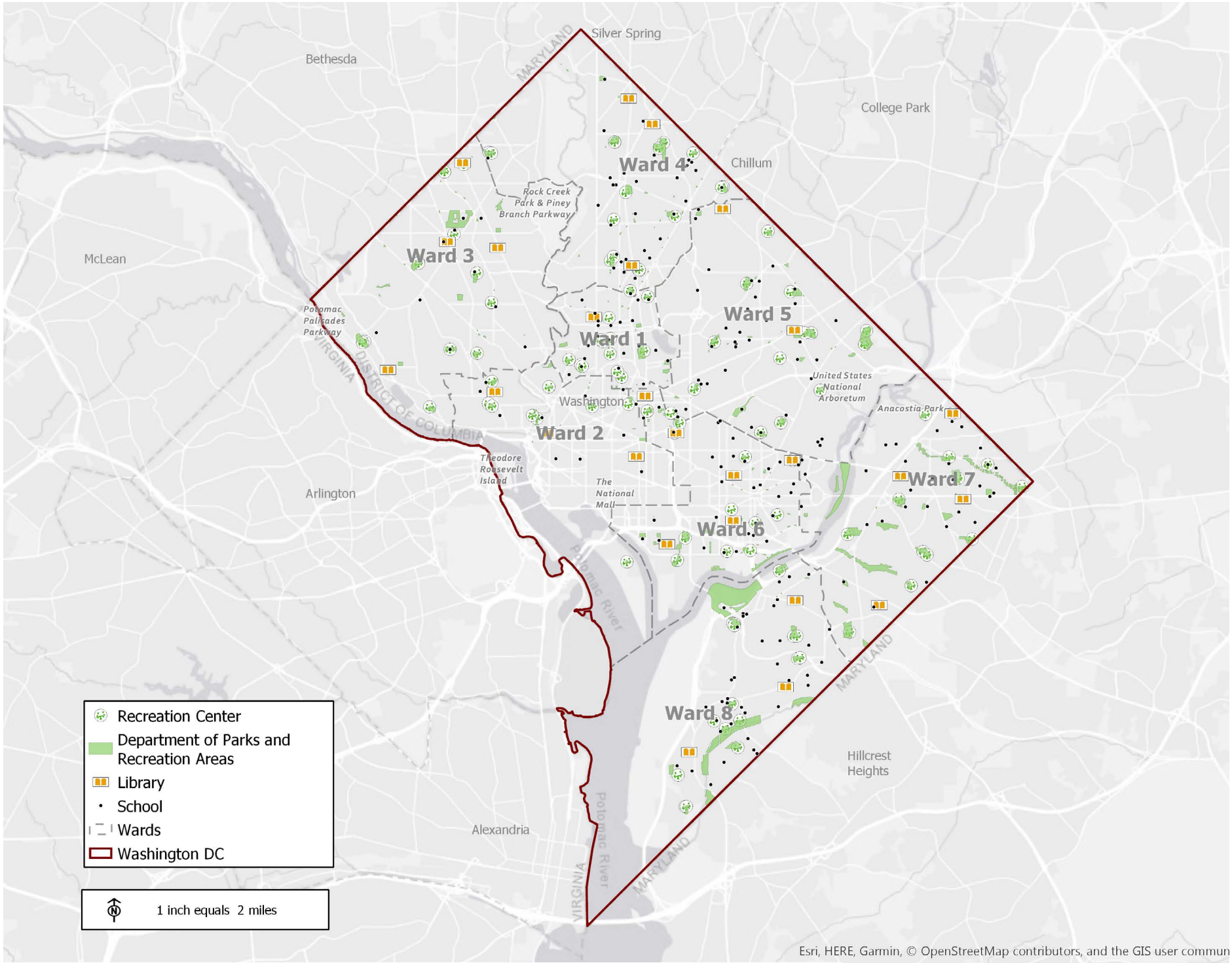

Figure 2.18 Public Recreation, Park and Library Locations
Source: DME 2017, DCPL 2017, DPR 2017, OCTO 2017, AECOM 2018

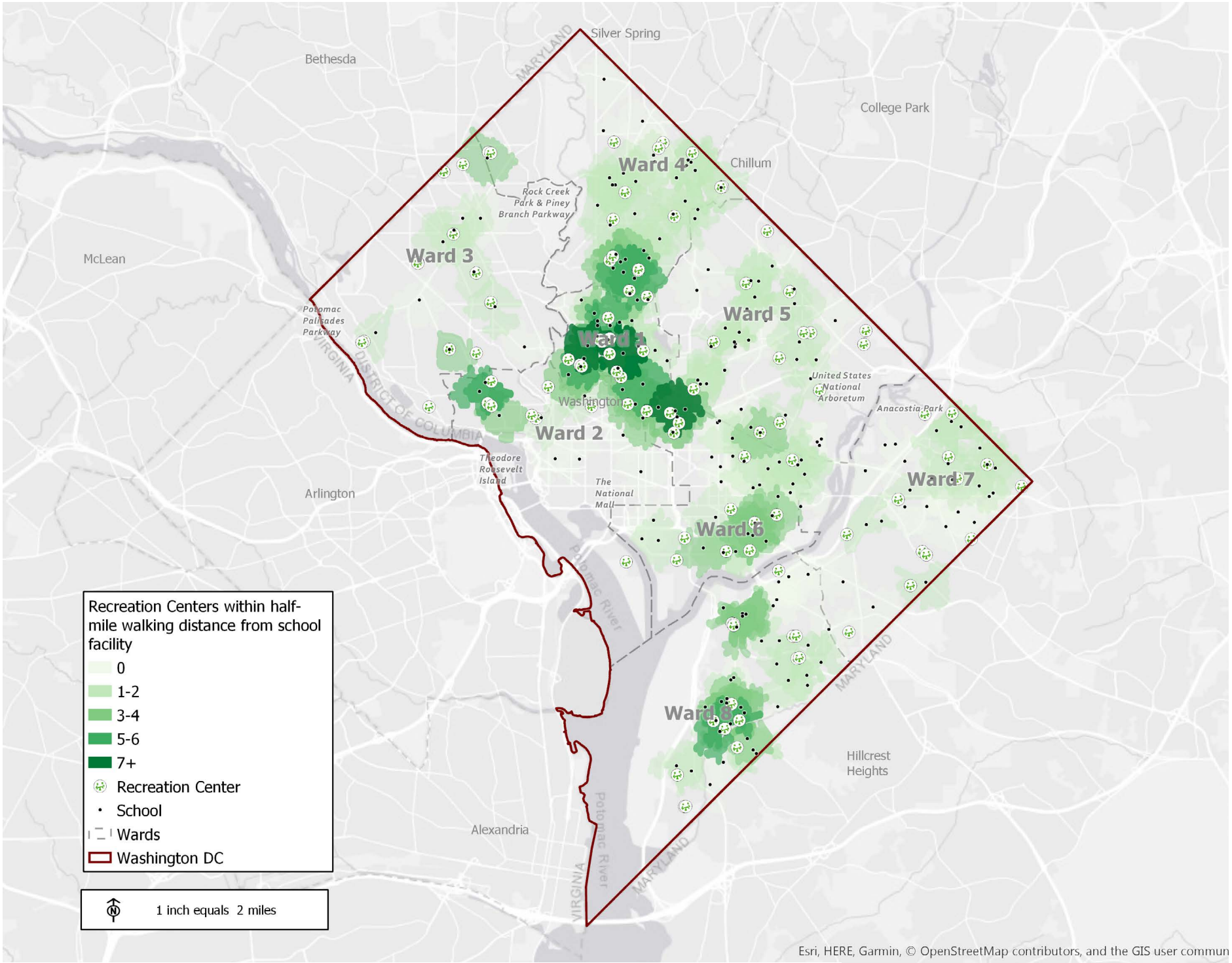

Figure 2.19 Walkability to Recreation Facilities
Source: DME 2017, CTO 2017, AECOM 2018

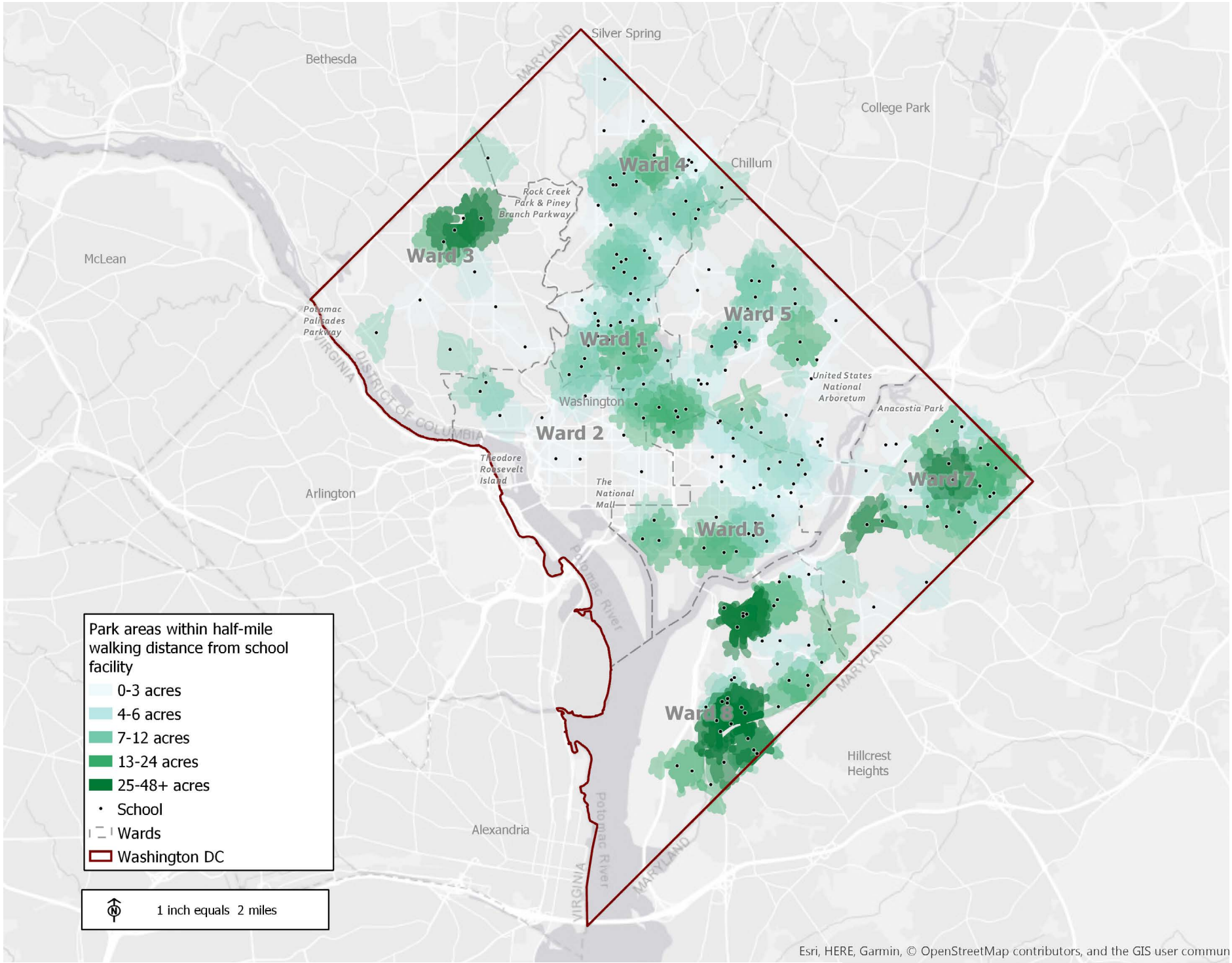

Figure 2.20 Walkability to Parks
Source: DME 2017, DPR 2017, AECOM 2018

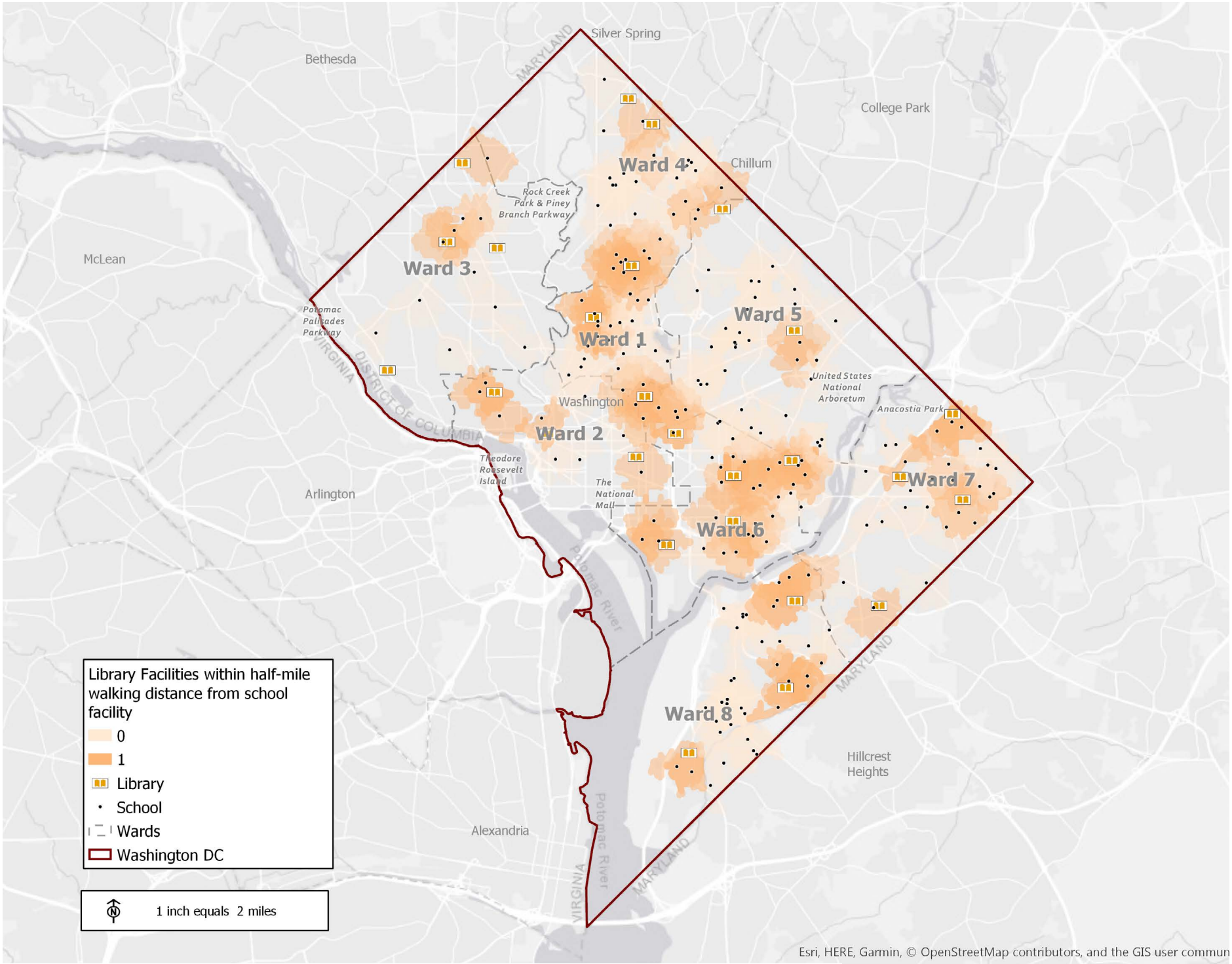

Figure 2.21 Walkability to Libraries
Source: DME 2017, DCPL 2017, AECOM 2018

Underutilized District-Owned Assets

Figure 2.22 shows the locations of District-owned educational facilities that are vacant. The six vacant school facilities are Thurgood Marshall, Old Miner, Fletcher-Johnson,[16]Old Randle Highlands, Spingarn, and Winston. Half of all vacant District-owned school facilities (3 of 6) are located in Ward 7. **Table 2.9** shows the size of each vacant school facility in square feet.

Figure 2.22 also shows the locations of nine economic development parcels and eight vacant District-owned parcels.[17] The size of each parcel symbol is proportional to the size of the parcel in square feet. The nine economic development parcels are part of four projects: Saint Elizabeths Hospital site, Hill East, the former Fletcher-Johnson school, and a District-owned site located at 1325 S Street NW. The eight vacant District-owned parcels are greater than half an acre (21,780 SF), the minimum desirable area to house potential school facilities. These vacant District-owned parcels are not distributed equally across Washington, DC. The majority of these parcels are found within Wards 8 (four parcels) and 5 (three parcels).

Table 2.10 lists the three agencies responsible for the eight vacant District-owned parcels, the number of vacant parcels for each agency, and the total square feet of the vacant parcels. DGS owns, operates, and/or manages six of the eight vacant parcels across Washington, DC. Vacant education facilities and District-owned vacant buildings represent opportunities for providing additional school facilities, or more amenities, as needed.

The majority of District-owned vacant parcels are located in Wards 8 and 5. The majority of vacant District-owned educational facilities are found within Ward 7.

[16] Fletcher-Johnson Elementary School will be turned over to DMPED for redevelopment in 2018.

[17] Information about these parcels was provided by DGS, the Deputy Mayor's Office for Planning and Economic Development (DMPED), and the Office of the Chief Technology Officer (OCTO), and was obtained through the Open Data DC web platform.

Table 2.9 Government-Owned Vacant School Facilities

VACANT SCHOOL FACILITY	TOTAL SIZE (SQUARE FEET)
Fletcher-Johnson	302,000
Marshall Elementary School	103,800
Old Miner	17,800
Old Randle Highlands	18,000
Spingarn Senior High	225,000
Winston Elementary	137,700
Total	**804,300**

Source: DME 2017; AECOM 2018

Table 2.10 Government-Owned Vacant Land

AGENCY	NUMBER OF VACANT PARCELS	TOTAL PARCEL SIZE (SQUARE FEET)
Department of General Services	6	243,858
Department of Parks and Recreation	1	47,408
Department of Housing and Community Development	1	34,934
Total	**8**	**326,200**

Source: DGS, DMPED, OCTO 2017; AECOM 2018

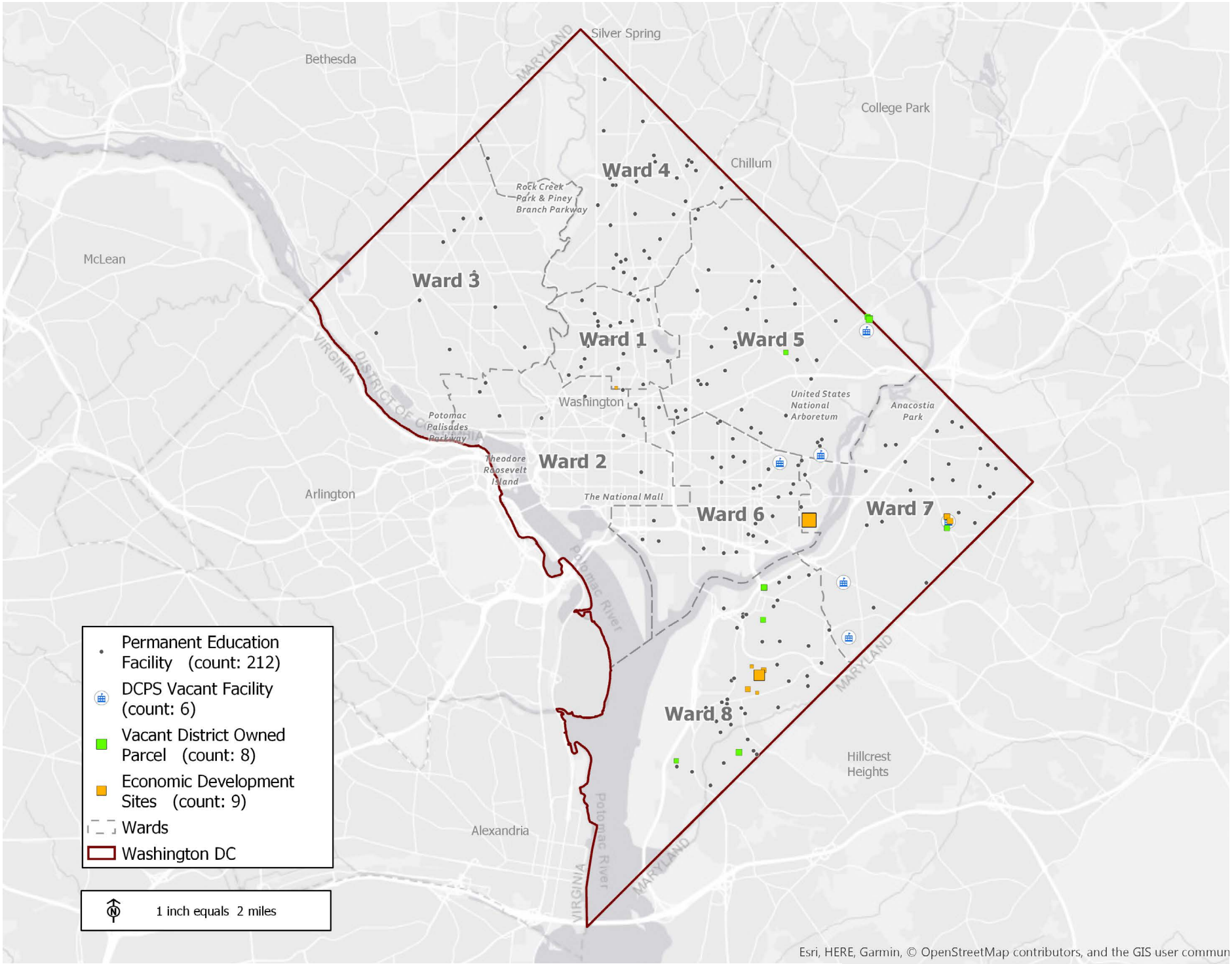

Figure 2.22 Vacant District Owned Facilities
Source: DME 2017, DGS/DMPED/OCTO 2018, AECOM 2018

2.2 SCHOOL ENROLLMENT

This section analyzes student enrollment from a historical perspective. After a discussion of trends over the past 10 years, DCPS enrollment since SY2013-14 is analyzed in greater detail by school boundary, ward, and grade band. A detailed analysis of SY2017-18, the base year for this MFP study, provides the foundation for the enrollment projections presented in Section 3. Finally, this section discusses enrollment in specialized programs and analyzes student access to those programs via public transit.

2.2.1 Historical Enrollment Trends

Since SY2008-09, public school enrollment in Washington, DC has been growing steadily, at an annual rate of approximately 2.8% per year (see **Figure 2.23**).

With the exception of SY2013-14, the share of students attending public charter schools has also steadily increased, while the share of students attending DCPS schools has steadily decreased. As of SY2017-18, the share of students attending DCPS schools was 53%; the share of students attending public charter schools was 47% (for additional details, please see Appendix A.8).

Table 2.11 shows that, between SY2013-14 and SY2017-18, the total increase in public school students was 10%. Elementary school students increased more than other grade bands (16%) during the time period. High school students increased the least (6%). Public charter schools captured increasing shares of students at all grade band levels.

Public charter schools increased their student capture mostly within the middle school grade band, where public charter schools captured 11% more students between SY2013-14 and SY2017-18. The smallest change in student capture by sector was at the Pre-K level, with a percent change of only 2.5% within the same time period.

Analysis of enrollment by ward is based on the ward where students live, not the ward in which they attend school. The most significant increase in DCPS students between SY2013-14 and SY2017-18 occurred in Ward 3, which saw a 24% increase in DCPS students over the five-year time period, as shown in **Table 2.12**. Ward 8 saw an 11% decrease in DCPS students during the same time period, but had the highest percentage increase in public charter school students — a 36% increase between SY2013-14 and SY2017-18. Conversely, public charter school students decreased by 13% in Ward 2 over the five-year period, but DCPS students in Ward 2 increased by 8%.

DCPS Enrollment Trends by School Boundary

Most, but not all, DCPS schools have a geographic boundary that identifies which kindergarten through 12th grade students have a guaranteed right to enroll in that school at any time throughout the school year. Pre-K students do not have a guaranteed right to attend their in-boundary DCPS school, because their grade is not compulsory; however, they are given a preference in the school lottery if they live within the DCPS school boundary. DCPS also operates citywide schools, application high schools, and alternative and adult schools where students do not have in-boundary rights to attend. Students outside of a school's by-right geographic boundaries are also eligible to attend by-right DCPS schools, but must apply through the common lottery system. Those students are referred to as out-of-boundary students.

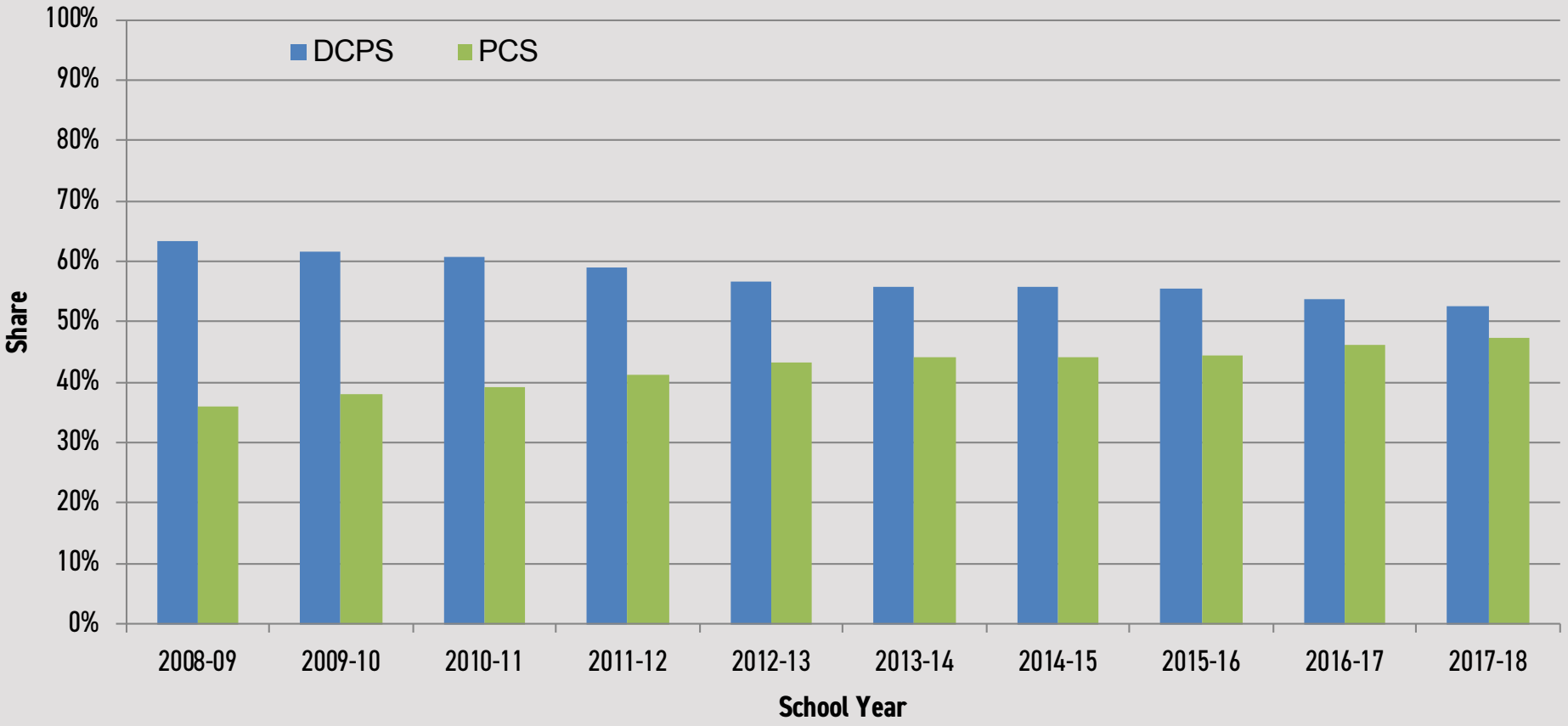

Figure 2.23 Historical Enrollment Share by Sector, SY2008–2009 through SY2017–2018
Source: DME; AECOM, 2018

Table 2.11 Public School Enrollment by Sector and Grade Band, SY2013-14 through SY2017-18

	ENROLLMENT SY2013-14			ENROLLMENT SY2017-18			% CHANGE 13/14 - 17/18		
	DCPS	PUBLIC CHARTER	TOTAL	DCPS	PUBLIC CHARTER	TOTAL	DCPS	PUBLIC CHARTER	TOTAL
Pre-K	5,565	6,290	11,855	5,797	6,913	12,710	4.2%	9.9%	7.2%
Elementary	21,313	13,500	34,813	23,552	16,862	40,414	10.5%	24.9%	16.1%
Middle	6,988	6,437	13,425	6,802	7,753	14,555	-2.7%	20.4%	8.4%
High	10,202	5,985	16,187	10,307	6,857	17,164	1.0%	14.6%	6.0%
Other*	2,325	4,353	6,678	1,686	4,955	6,641	-27.5%	13.8%	-0.6%
Total**	**46,393**	**36,565**	**82,958**	**48,144**	**43,340**	**91,484**	**3.8%**	**18.5%**	**10.3%**

	SECTOR SHARE, SY2013-14			SECTOR SHARE, SY2017-18			% CHANGE 13/14 - 17/18	
	DCPS	PUBLIC CHARTER	TOTAL	DCPS	PUBLIC CHARTER	TOTAL	DCPS	PUBLIC CHARTER
Pre-K	46.9%	53.1%	100.0%	45.6%	54.4%	100.0%	-2.8%	2.5%
Elementary	61.2%	38.8%	100.0%	58.3%	41.7%	100.0%	-4.8%	7.6%
Middle	52.1%	47.9%	100.0%	46.7%	53.3%	100.0%	-10.2%	11.1%
High	63.0%	37.0%	100.0%	60.1%	39.9%	100.0%	-4.7%	8.0%
Other*	34.8%	65.2%	100.0%	25.4%	74.6%	100.0%	-27.1%	14.5%
Total**	**55.9%**	**44.1%**	**100.0%**	**52.6%**	**47.4%**	**100.0%**	**-5.9%**	**7.5%**

Source: DME - Student Level Data; Office of the State Superintendent of Education; AECOM, 2018
** "Other" refers to students enrolled in adult alternative or special education programs*

Table 2.13 shows historical DCPS enrollment between SY2013-14 and SY2017-18. Across Washington, DC, Wards 3, 4, and 1 have the highest in-boundary student enrollment growth rates over the period. Wards 8, 7, and 5 were the bottom-ranking wards in terms of their enrollment growth rates, with a negative annual average rate from 2013 to 2017.

Ward 3 and Ward 8 both saw significant changes in in-boundary and out-of-boundary student enrollment over the five-year period. In-boundary enrollment increased in Ward 3 by 22%, and out-of-boundary enrollment increased by 48%, although overall increases in the number of out-of-boundary students were relatively small. In Ward 8, in-boundary enrollment decreased by 23% between SY2013-14 and SY2017-18, with only a small out-of-boundary enrollment increase of 2%.

Ward 3 saw a 24% increase in DCPS students over the five-year time period between SY2013-14 and SY2017-18, driven primarily by a 48% increase in out-of-boundary students.

Table 2.12 Historical Enrollment Share by Ward of Student Residence, SY2013-14 and SY2017-18

	SY2013-14		SY2017-18		CHANGE	
	DCPS	PCS	DCPS	PCS	DCPS	PCS
Ward 1	55%	45%	57%	43%	10%	1%
Ward 2	64%	36%	69%	31%	8%	-13%
Ward 3	92%	8%	92%	8%	24%	18%
Ward 4	58%	42%	57%	43%	10%	15%
Ward 5	48%	52%	40%	60%	-7%	29%
Ward 6	64%	36%	59%	41%	1%	24%
Ward 7	53%	47%	44%	56%	-8%	28%
Ward 8	54%	46%	43%	57%	-11%	36%

Source: DME; AECOM, 2018
Note: Students who could not be geocoded were not included in this analysis.

Table 2.13 Historical DCPS Student Enrollment by Ward of Student Residence and by School Boundary, SY2013-14 and SY2017-18

	SY2013-14		SY2017-18		SY2013-14 TO SY2017-18 % CHANGE	
	IN BOUNDARY	OUT OF BOUNDARY	IN BOUNDARY	OUT OF BOUNDARY	IN BOUNDARY	OUT OF BOUNDARY
Ward 1	2,064	2,198	2,299	2,393	11%	9%
Ward 2	696	429	752	459	8%	7%
Ward 3	3,423	366	4,173	541	22%	48%
Ward 4	3,662	4,002	4,246	4,184	16%	5%
Ward 5	2,007	3,372	1,701	3,316	-15%	-2%
Ward 6	2,537	2,457	2,746	2,276	8%	-7%
Ward 7	3,725	4,510	3,084	4,487	-17%	-1%
Ward 8	4,972	5,049	3,830	5,139	-23%	2%

Source: DME; AECOM, 2018
Note: Students who could not be geocoded were not included in this analysis.

2.2.2 Analysis of SY2017-18 Enrollment

To gain a deeper understanding of enrollment patterns, this section examines the most current enrollment available, SY2017-18, and analyzes it at the facility level, as well as by grade band and sector.[18] The unit of analysis is the school facility; again, it is important to note that some facilities accommodate students of multiple schools.

Figure 2.24 shows facility enrollment by enrollment size categories and sector. Facility enrollment categories are small (fewer than 250 students), medium (250-499 students), large (500-750 students), and very large (>750 students). Of the 212 school facilities in the analysis, 107 fall within the medium enrollment category. The remaining 105 facilities fall into the small (46 school facilities), large (36 school facilities), and very large categories (23 school facilities). The very large school facilities are almost evenly split between DCPS and PCS. Public charter schools are more evenly distributed across the student enrollment categories than DCPS, which are concentrated in the medium-sized category.

School facility enrollment in SY2017-18 by school size and sector is shown in **Figure 2.25**, with the circle size proportional to the number of enrolled students within each facility. Wards 8 and 4 have the highest number of very large enrollment facilities; nearly half (11 of 23) of all very large school facilities are within Wards 8 and 4, which have six and five such facilities, respectively. Wards 3, 5, and 6 have two large facilities each. There are no public charter school facilities within Ward 3. Moreover, there are no very large DCPS enrollment facilities in Ward 7. Ward 2 has no facilities within the very large enrollment category, and also has the lowest total enrollment across Washington, DC.

Figure 2.26 shows enrollment by sector. With about 47,000 enrolled students in SY2017-18, DCPS facilities have the greatest number of students, followed closely by public charter school facilities with approximately 39,000 students and co-located facilities with about 5,000 students.

Before turning to enrollment by grade band, it is important to reiterate that school facilities housing multiple schools with different grade bands are referred to as multi-schools. Multi-schools can be from the same LEA or different LEAs (co-location). Education campuses are facilities with one school that spans several grade bands. Starting with enrollment by grade band, **Figure 2.27** shows that the largest share of students across all wards are enrolled in elementary schools, followed by multi-schools and education campuses. **Figure 2.28** further differentiates facility enrollment by ward and grade band based on SY2017-18 data. Four observations emerge from the split by grade band and ward: first, facility enrollment is greatest in Wards 4, 5, and 8; second, enrollment in elementary facilities comprises a large portion of total enrollment across all wards within Washington, DC; third, Ward 2 has the lowest total enrollment; and fourth, Ward 3 only offers elementary, middle, and high school facilities, whereas most of the other wards also host adult/alternative facilities, education campuses, multi-schools, and special education facilities. It also lacks PCS facilities, as seen in **Figure 2.25**.

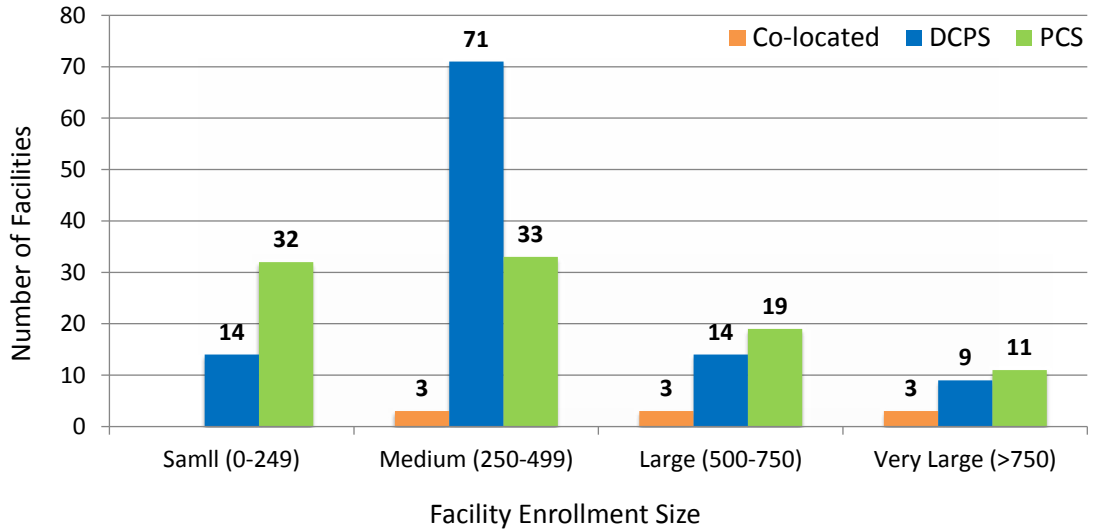

Figure 2.24 Enrollment by Sector and Enrollment Category SY2017–18
Source: DME 2017, AECOM 2018

[18] For this section of the report the total enrollment is 91,383 (of 91,484), as a result of Youth Services Center and Inspiring Youth facilities not being included in facility enrollment.

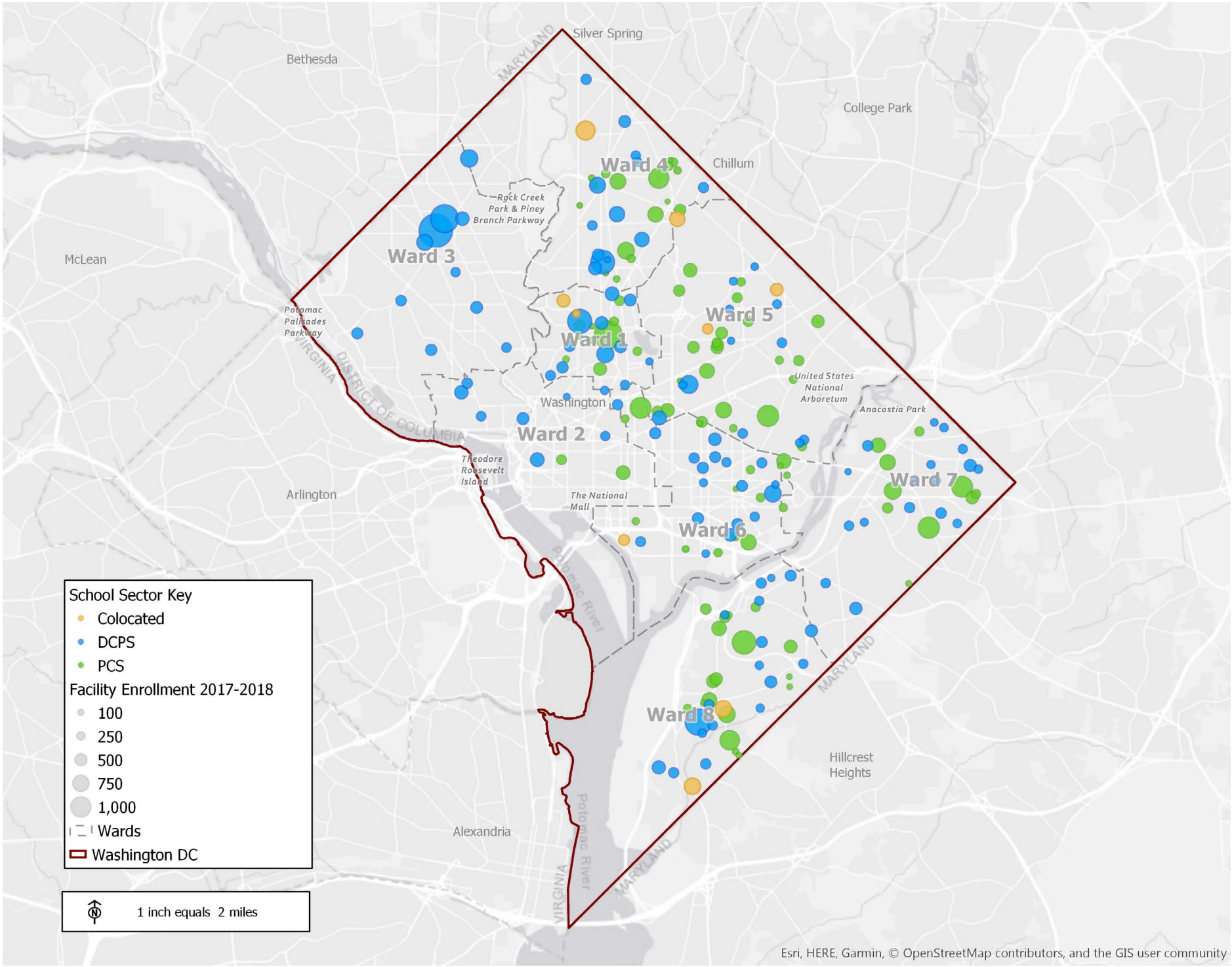

Figure 2.25 Enrollment SY2017–2018
Source: DME 2017, AECOM 2018

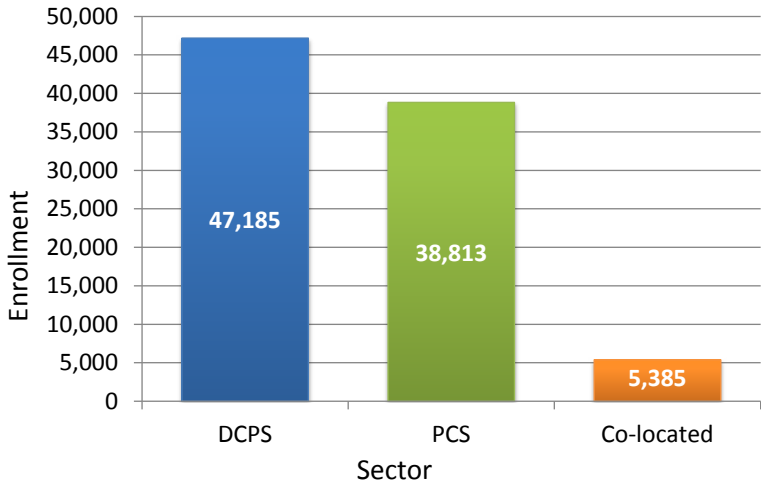

Figure 2.26 Enrollment by Sector SY2017–18

Source: DME 2017, AECOM 2018

Note: Total enrollment is 91,383 (of 91,484) as a result of Youth Services Center and Inspiring Youth facilities not being included in facility enrollment.

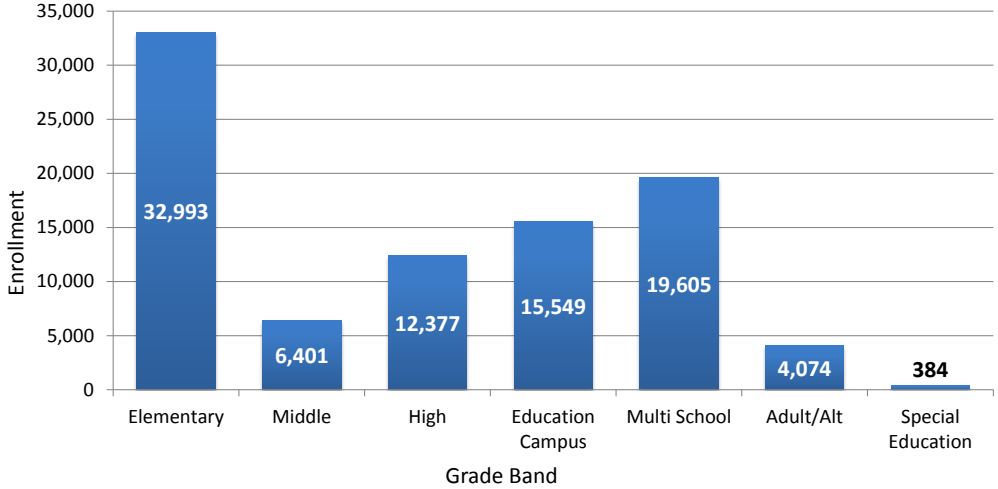

Figure 2.27 Total Enrollment by Grade Band SY2017–18

Source: DME 2017, AECOM 2018

Note: Total enrollment is 91,383 (of 91,484) as a result of Youth Services Center and Inspiring Youth facilities not being included in facility enrollment.

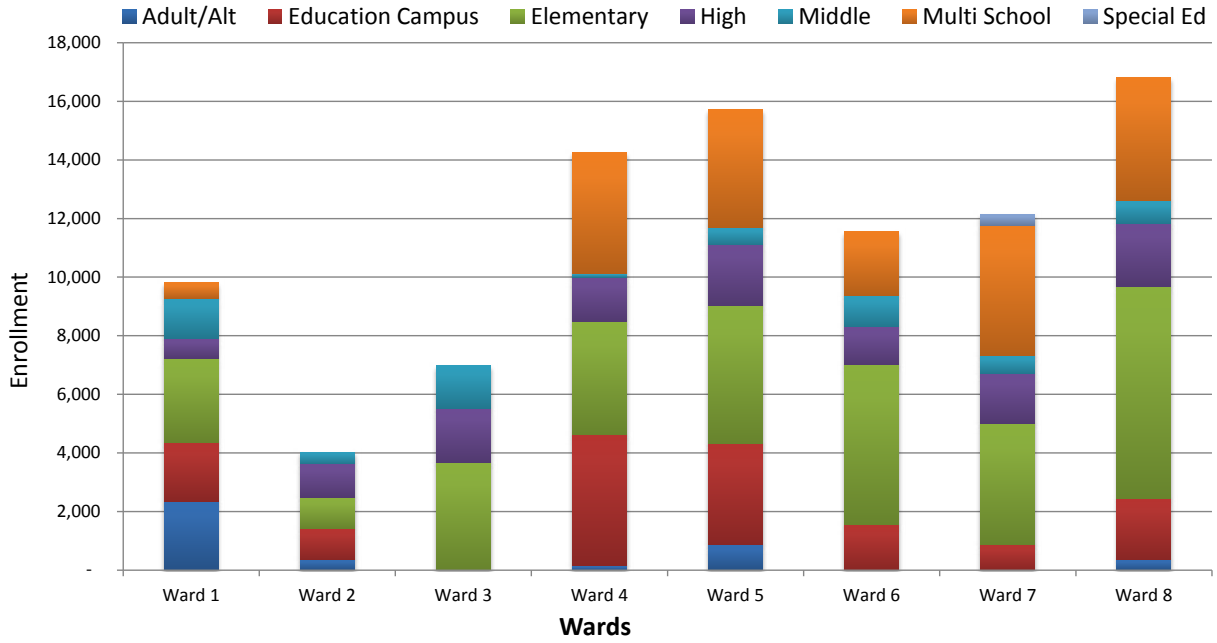

Figure 2.28 Enrollment by Ward and Grade Band SY2017–18

Source: DME 2017, AECOM 2018

Note: Two DCPS facilities are categorized as multi-schools, McKinley MS/HS and Bancroft ES (co-located with Briya PCS)

2.2.3 Program Enrollment and Access

Enrollment at School Facilities with Specialized Programs

Specialized programs are an important part of public school education in Washington, DC. They are a high priority for students and their parents, as evidenced by the feedback received on the MFP study at community meetings in 2018. This section examines enrollment at school facilities offering specialized programs by type of program and geography. It also includes a discussion of accessibility via public transit to facilities offering specialized programs.

Data on the type, number, and distribution of programs is presented in Section 2.1.4 above. **Table 2.14** presents enrollment at the facility offering specialized programs by type of program and year. In some instances, all students enrolled at the facility participate in the specialized program (e.g., application high school). For other programs, only some of the students may have elected to participate in the program (e.g., dual college enrollment) and at others, a program is implemented for only a particular segment of the population (e.g., dual language). For purposes of this report, the facility's enrollment is associated with each specialized program in order to identify opportunities for the students enrolled there.

More than 40% of all public school students were enrolled in specialized programs in SY2017-18. In the base year of the analysis (SY2017-18), the facilities offering the following programs with the highest enrollment (in descending order) were Career and Technical Education, Dual Language/ Language Immersion, and International Baccalaureate. The fluctuation in year-to-year enrollment is substantial and reflects changing priorities on the part of DCPS and public charter schools with respect to the focus of the program offering.

In terms of program enrollment by ward, Ward 5 had the highest enrollment at schools offering specialized programs for SY2017-18 (see **Table 2.15**). Although Ward 3 only added one new program between SY2016-17 and SY2017-18, it had the second-highest new enrollment between the two school years, adding an additional 2,248 students who had opportunities to participate in the four programs offered.

Based on SY2017-18 enrollment and past trends, it appears that there is increasing interest and enrollment in schools offering Career and Technical

Table 2.14 Program Enrollment (DCPS and public charter schools), SY2014-15 through SY2017-18

PROGRAM	SY2014-15	SY2015-16	SY2016-17	SY2017-18	% CHANGE SY2014-15 TO SY2015-16	% CHANGE SY2015-16 TO SY2016-17	% CHANGE SY2016-17 TO SY2017-18
Arts Integration	4,173	6,035	4,735	4,768	45%	-22%	1%
Career & Technical Education	11,541	13,986	9,237	10,052	21%	-34%	9%
Dual Language	7,341	7,971	9,237	9,722	9%	16%	5%
Extended Year	n/a	n/a	4,934	4,170	n/a	n/a	-15%
International Baccalaureate	6,602	8,131	6,917	7,166	23%	-15%	4%
Montessori	1,928	1,985	1,938	2,116	3%	-2%	9%
STEM	6,171	6,937	2,773	2,825	12%	-60%	2%
Other Specialized Programs	4,404	4,314	4,523	14,910	-2%	5%	230%

Source: DME; AECOM, 2018
Note: A school facility's enrollment was associated with each program in order to identify student opportunities to specialized programming

Education programs and Dual Language/Language Immersion programs; providing the space needed to house those programs will need to be taken into account when planning for future facility needs. The growth in enrollments at schools with in special programs in Wards 3 and 4 also has implications for the MFP, and planning for appropriate spaces/adequate facilities to serve the needs of these programs will need to be taken under consideration. Appendix A.9 through Appendix A.12 provide further details on program enrollment.

Specialized Program Access

This section evaluates student access to the school facilities offering specialized programs in SY2017-18 described in section 2.1.4. Following an assessment of programmatic access by ward, this section investigates access to individual programs.

Access is measured using two metrics: walk distance area and public transit LOS areas. Walk distance areas are defined as areas within a walking distance of a half-mile of facilities with specialized programs. Similar to walk distance areas, public transit LOS areas are defined as areas within a half-mile area of bus and Metro stops. However, the transit LOS areas also take into account the number of trips per hour for each transit service area.

For students, having access to a facility that offers a specialized program is defined as the student either living within a half-mile walking distance of the facility, or living within a high-transit LOS area (with more than ten trips per hour on average). A student without access is defined as living outside the half-mile distance from a facility with a specialized program, and living within a low level of transit service area (less than ten trips per hour). Distances are measured using "Manhattan distances," along public rights-of-way connecting between the school facility and the student, and not "as the crow flies" or a direct line from residence to facility.

Figure 2.29 shows clusters of students with access (in blue) to specialized programs and without access to specialized programs (in yellow) as identified by the measurements described previously. Darker colors correspond to higher densities of students. Students living in areas well served by transit generally have easy access to specialized programs. Much of Ward 3, and many pockets within Ward 2, have low concentrations of students with access to specialized program, either due to low transit access, few specialized programs, or both. Alternatively, areas of Wards1, 4, and 8 have relatively higher concentrations of students with access to specialized programs.

Table 2.15 Program Enrollment By Ward (DCPS and public charter schools), SY2014-15 through SY2017-18

PROGRAM	SY2014-15	SY2015-16	SY2016-17	SY2017-18	CHANGE SY2014-15 TO SY2015-16	CHANGE SY2015-16 TO SY2016-17	CHANGE SY2016-17 TO SY2017-18
Ward 1	9,704	11,993	8,448	9,147	2,289	-3,545	699
Ward 2	862	876	899	2,624	14	23	1,725
Ward 3	3,436	3,472	3,562	5,810	36	90	2,248
Ward 4	3,327	3,687	6,103	9,311	360	2,416	3,208
Ward 5	11,142	13,334	10,776	12,471	2,192	-2,558	1,695
Ward 6	4,424	4,576	3,156	3,834	152	-1,420	678
Ward 7	4,727	5,043	3,229	2,898	316	-1,814	-331
Ward 8	4,538	6,378	8,121	9,634	1,840	1,743	1,513

Source: DME; AECOM, 2018
Note: A school facility's enrollment was associated with each program in order to identify student opportunities to specialized programming

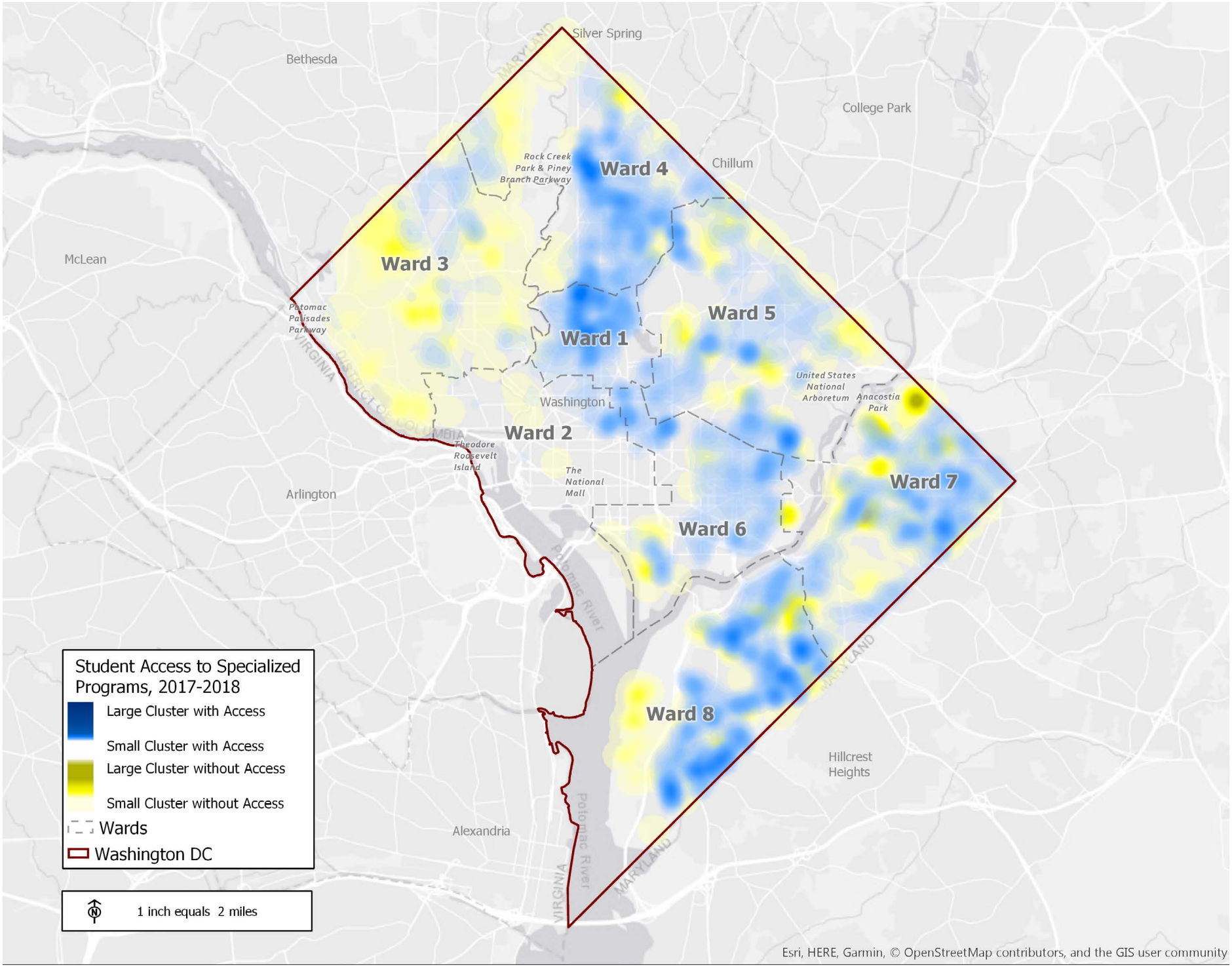

Figure 2.29 Student Access to Programs
Source: DME 2017, AECOM 2018

Figure 2.30 shows the overall percentages of the student population with and without access to programs. Among all 91,392 public school students,[19] 88% have access to one or more of the specialized programs either by a half-mile walking distance from their residence or public transit. An additional 31% of students living outside the half-mile walking distance have access to high-quality public transit within a half-mile distance from their residence. About 12% of all students do not have access to either type. The analysis does not take into account other factors contributing to access, such as car ownership rates and/or affordability of alternative means of transportation, such as taxis, to and from schools with educational programs.

Among public school students, 88% have access to one or more of the specialized programs, either by a half-mile walking distance from their residence or from public transit.

Figure 2.31 shows the percentages of students with and without access to specialized programs by ward. The majority of students (99%) within Wards 1 and 2 have access to specialized programs within a half-mile walking distance or through transit access, as do most students

[19] The student data used for this section of the report does not include 92 of the 91,484 public school students, as they were unable to be geocoded. The total number of public school student in this section of the report totals 91,392.

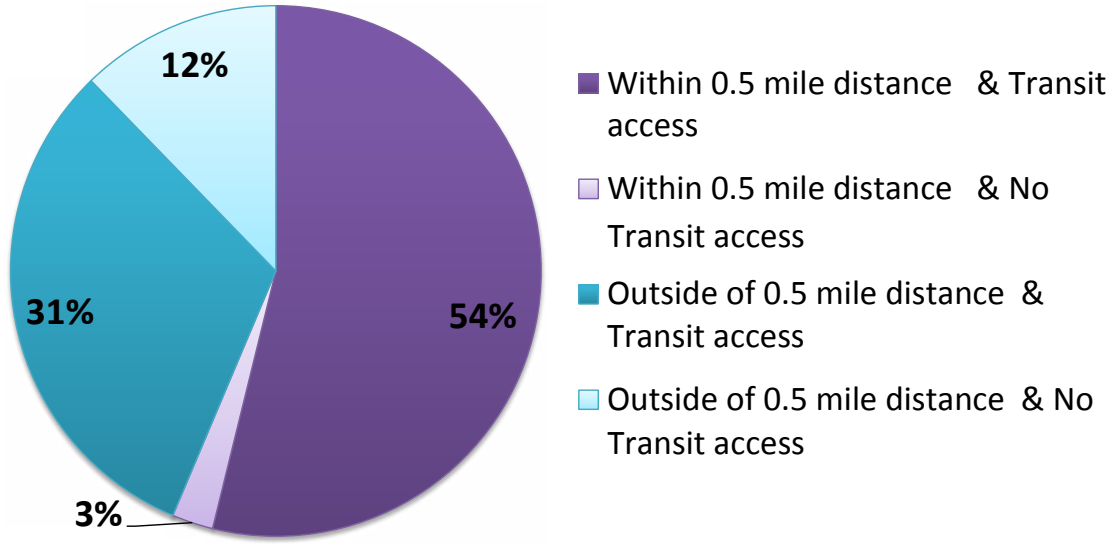

Figure 2.30 Share of Student Population with and without Access to Programs
Source: DME 2017, AECOM 2018

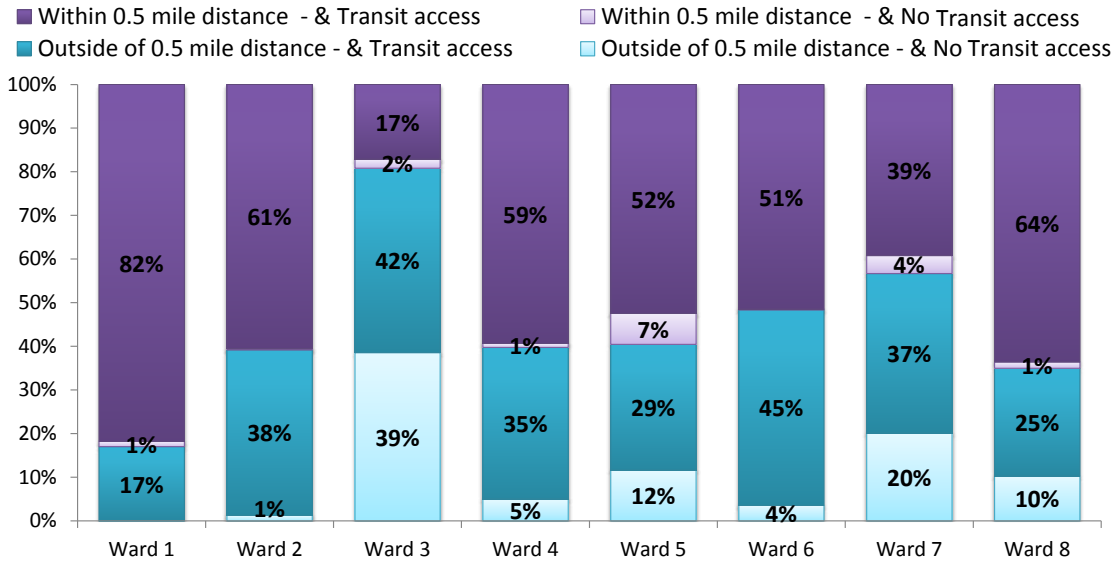

Figure 2.31 Breakdown of Student Access to Programs by Ward
Source: DME 2017, AECOM 2018

within Wards 4 and 6 (95% and 96%, respectively). Ward 3 has the smallest share of students with access to specialized programs, with 39% of students having neither type of access. Most wards score above 50% on the share of students within walking distance of a facility with a program. However, the shares of students not within walking distance but within areas of high level of transit service varies greatly from ward to ward. Perhaps surprisingly, Ward 5 has the third largest percentage of students living in areas without access to specialized programs (outside the half-mile walk distance and no access to transit), despite offering the highest number of specialized programs and having a high concentration of students.

Access to Specialized Elementary Programs

Older students are often more independent and rely on public transit and/or the Kids Ride Free program to get to school. However, for elementary school students, walking is an important factor when considering program accessibility. This section of the report restricts the definition of accessibility to elementary grade students within a half-mile walk of specialized elementary programs. **Figure 2.32** shows statistically significant clusters of elementary aged students within a half-mile walk of specialized elementary programs (in blue) and outside a half-mile walk (in yellow). Darker colors correspond to higher density of students. When considering elementary student accessibility across Washington, DC, approximately 42% of all elementary aged students are within a half-mile walk to a specialized program. The largest percentage of elementary students with access to elementary programs is found in Ward 1 at 64.5%. Additionally, 50% of all elementary aged students in Wards 4, 5, and 8 are within a half-mile walk to a specialized program. Despite having the most elementary facilities offering programs (13 facilities), Ward 5 only has the third highest elementary student accessibility in Washington, DC.

Over 95% of elementary students in Ward 3 do not have access to a specialized elementary program, but Ward 3 also has the fewest number of facilities offering specialized elementary programs (one facility) and the second smallest population of elementary aged students. Conversely, Ward 7 has the second largest population of elementary aged students (and four facilities offering elementary programs) but 73% are farther than a half-mile walk to a specialized elementary program.

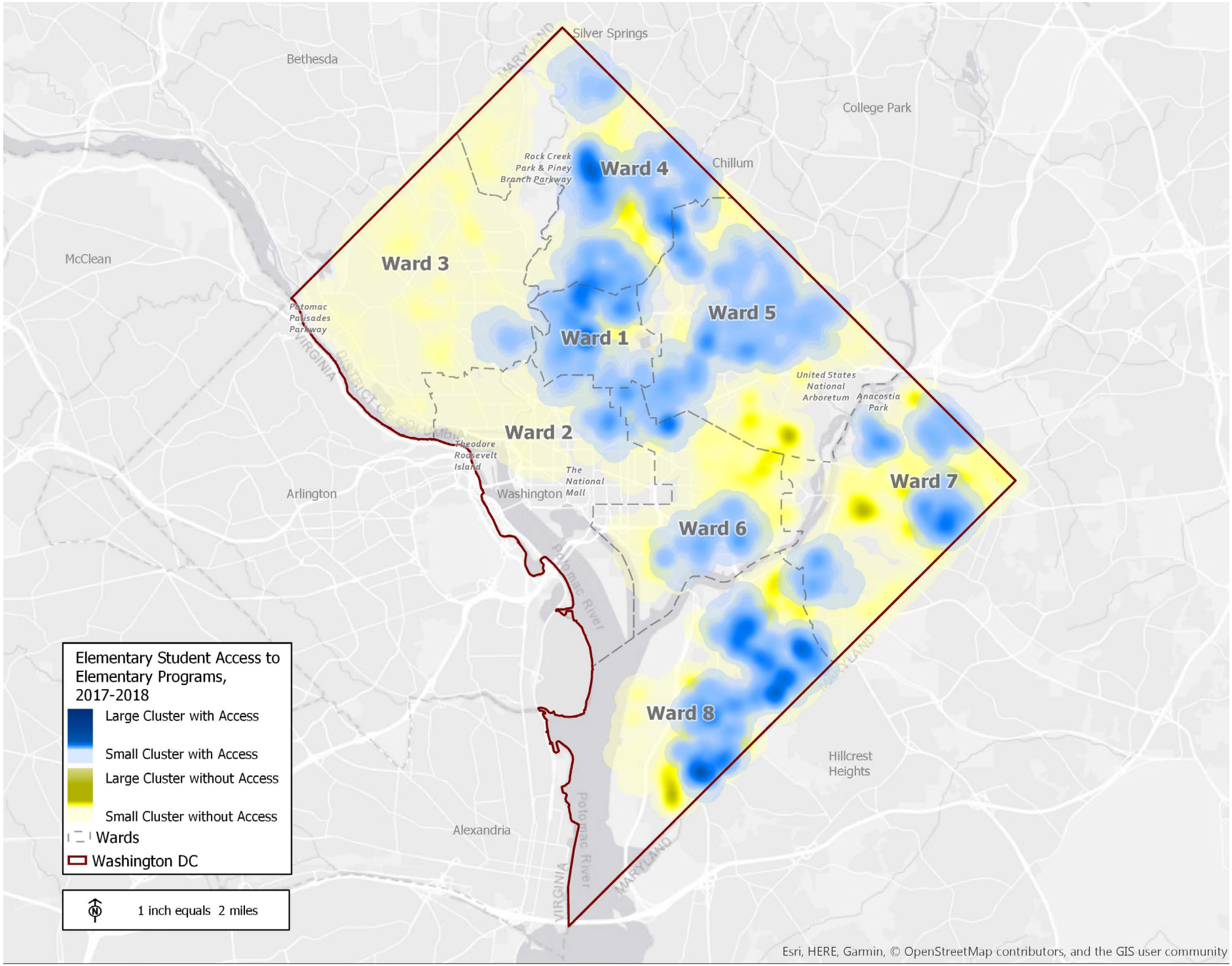

Figure 2.32 Elementary Student Access to Programs
Source: DME 2017, AECOM 2018

Access by Program Type

Figure 2.33 provides a detailed picture of the accessibility of individual SY2017-18 programs. Students without access are equally distributed across individual programs at around 15%. The majority of these students live in remote parts of Washington, DC that do not have access to frequently served transit stops. By comparing the accessibility of individual programs with accessibility for all programs, as depicted in **Figure 2.30**, it is clear the non-access rates of individual programs increase between 2 and 3%.

Across all individual programs, access within a half-mile distance ranges between 4% for STEM programs and 19% for Other Specialized Programs and Dual Language/Language Immersion programs. Most students can access specialized programs by public transit. In particular, when considering students outside a half-mile walk, STEM is the most accessible program via public transit in Washington, DC, followed by International Baccalaureate and Montessori.

STEM is the most accessible program via public transit, followed by International Baccalaureate and Montessori.

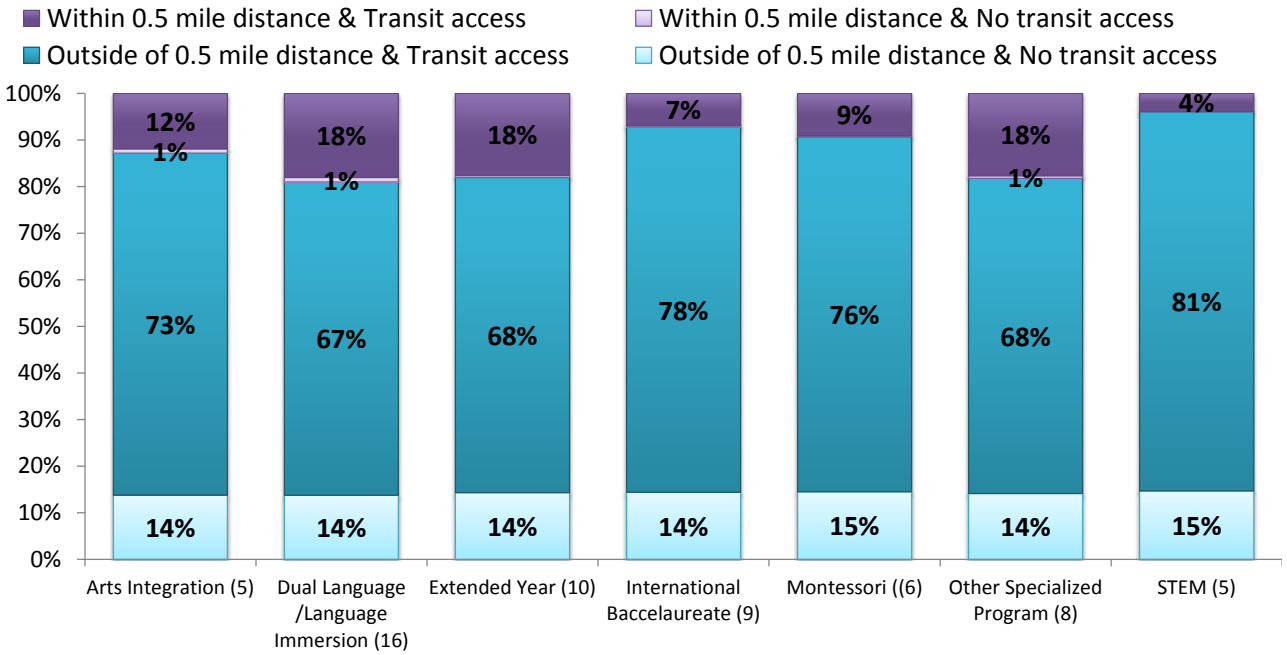

Figure 2.33 Access vs. Non-Access per Program Type
Source: DME 2017, AECOM 2018

2.2.4 My School DC Lottery Application Data

Lottery application data from My School DC was analyzed as a potential indicator of student demand to enroll in specific schools. The common lottery application is a single online application that students must use to apply to attend the following types of public schools: participating public charter schools, DCPS schools outside a student's geographic school boundary (including DCPS selective high schools), and DCPS Pre-K programs, even if the Pre-K program is within a student's geographic elementary boundary. Students can rank up to 12 schools on their application, and a random lottery determines the placement for new students at the participating schools. The lottery matches are based on spaces available at the participating school, how students ranked their school selections (from most to least preferred), lottery preferences such as sibling or geographic preference, and students' random lottery numbers.[20]

The number of students who enter the lottery to apply to specific out-of-boundary or other non-by-right schools is an indication of preference. However, the data provides an incomplete picture of school preference as kindergarten through 12th grade students that intend to enroll in their in-boundary DCPS school do not need to apply via the lottery. Also, students may choose to apply to schools via the lottery but not attend even if matched. Even with these caveats, understanding the trends may be helpful in understanding facility needs.

The following section shows where the most highly ranked schools are located. This does not represent where students live, but instead where they are most trying to receive an enrollment match in the lottery. **Figure 2.34** displays the number of schools ranked first by the ward of the school between SY2015-16 and SY2017-18. Ward 5 has the most schools ranked first in the lottery compared to other wards (approximately 4,220 in SY2017-18). This is not surprising since Ward 5 is home to a large number of public charter schools that rely on the common lottery for enrollment. The next highest category of schools ranked first was located in Ward 6 followed closely by Ward 4 (at 2,996 and 2,888, respectively).

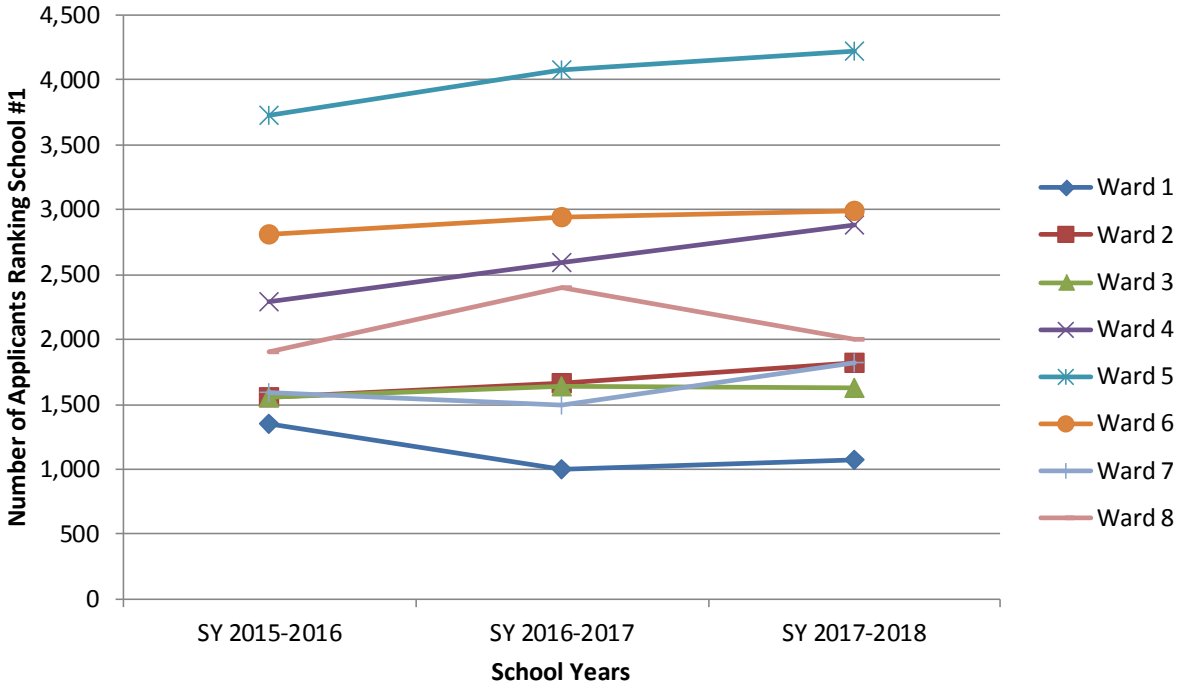

Figure 2.34 Number of Schools Ranked as #1 by Ward of the School, SY2015-16 through SY2017-18
Source: MySchoolDC.com, OSSE, 2018; DME, 2018; AECOM, 2018

[20] The DCPS selective high schools select students based on specific criteria separate from the matches described above.

Figure 2.35 shows the number of schools that were ranked first through third by the ward of the school between SY2015-16 and SY2017-18. These rankings were weighted to reflect the highest preferences of the applicants: #1 rankings received 1 point, #2 rankings received 0.6 points, and #3 rankings were assigned 0.3 points. The trend in this weighted lottery analysis is very similar to the former; Ward 5 schools continue to have the most top-choice applications, followed by Ward 6 and then by Ward 4.

This analysis is limited to the available lottery data applications, and a more in-depth analysis of demand for public school is recommended. Further analysis of the common lottery data, in conjunction with additional facility data, such as programmatic offerings, should be conducted in the future.

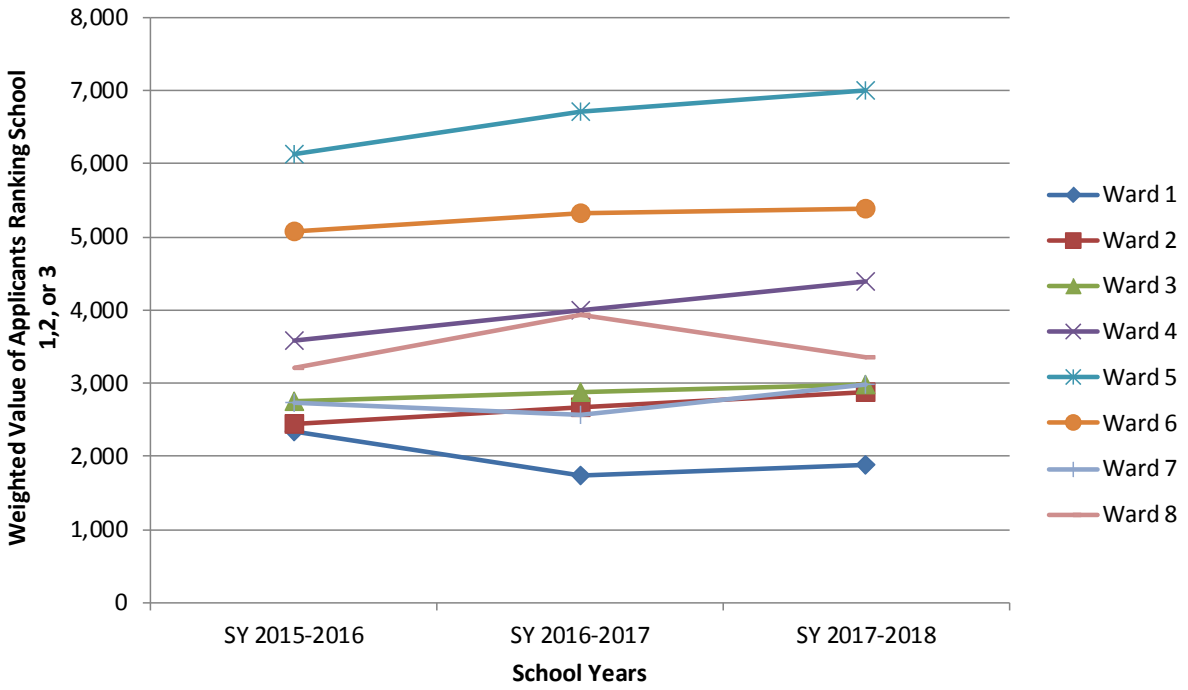

Figure 2.35 Number of Schools Ranked as #1-#3 by Ward of School, SY2015-16 and SY2017-18
Source: MySchoolDC.com, OSSE, 2018; DME, 2018; AECOM, 2018
Note: #1 rankings received 1 point, #2 rankings received 0.6 points, and #3 rankings received 0.3 points

2.3 SCHOOL FACILITY CAPACITY AND UTILIZATION

This section analyzes the interaction between student enrollment and facility capacity in Washington, DC's public schools.

2.3.1 Capacity and Utilization

Facility programmatic capacity is provided by DCPS and public charter LEAs and reflects the maximum number of students that can be housed in each school facility, given the school's existing educational programs, class size, and staffing. Programmatic capacities can be revised by the LEAs to reflect new class sizes or classroom configurations in existing facility space or reflect new facilities or new modernizations. Programmatic capacity includes portables because they are used by DCPS to manage overcrowding. Section 2.3.2 discusses those DCPS schools relying on portables.

Utilization is calculated as the number of enrolled students over the programmatic capacity of the school facility.[21] In general, optimal utilization of school facilities can be indicated as facilities within the 80-95% utilization range. Many school facilities are utilized at or near capacity, suggesting efficient accommodation of student demand. Public charter schools can control their enrollment, as they do not operate as schools of right, and a facility that is at or near capacity is desirable.

Figure 2.36 shows the distribution of school facilities by utilization category. **Figure 2.37** shows each school's geographic location and degree of utilization (the complete list of schools by degree of utilization is shown in Appendix A.13). Both figures show utilization of permanent and portable capacity (e.g., trailers). Washington, DC's public schools fall across the full spectrum of utilization, ranging from less than 50% utilization to greater than 110% utilization. Almost one-third (32%) of schools in Washington, DC are in the 80%-95% range, which indicates that demand and supply are in balance for those facilities. However, 68% of schools in Washington, DC are either less than 80% utilized or more than 95% utilized.

In terms of utilization by sector, **Figure 2.38** shows that a larger portion of DCPS school facilities are in the 80%-95% utilization range compared to public charter school facilities. However, there are more DCPS facilities in the 0-65% utilization range than public charter school facilities; 27% of DCPS facilities have low utilization, compared to 12% of public charter school facilities. A larger share of DCPS school facilities are more than 95% utilized compared to public charter schools; this is primarily because DCPS must accept all in-boundary students that want to attend the school. Wards 6 and 8 have the most facilities within the +95% utilization range (nine facilities each), followed by Wards 4

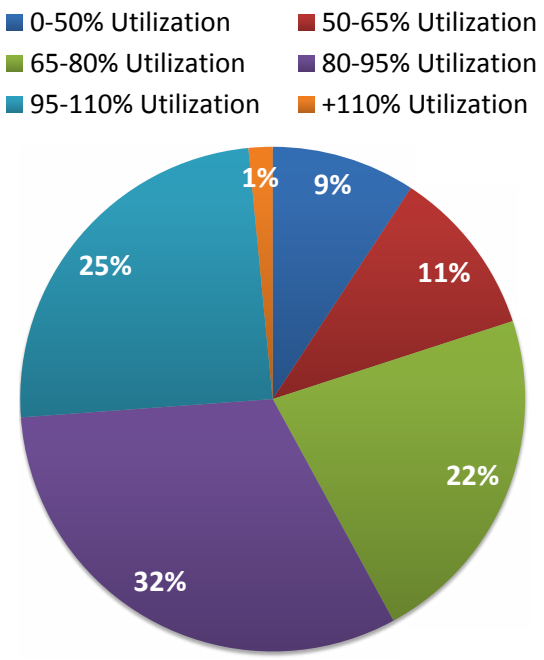

Figure 2.36 Public School Utilization Status, 2017–2018
Source: DME 2017, AECOM 2018

[21] Facility capacity and enrollment were excluded for schools that were identified as growing, as were schools swinging in SY2017-18 due to modernizations.

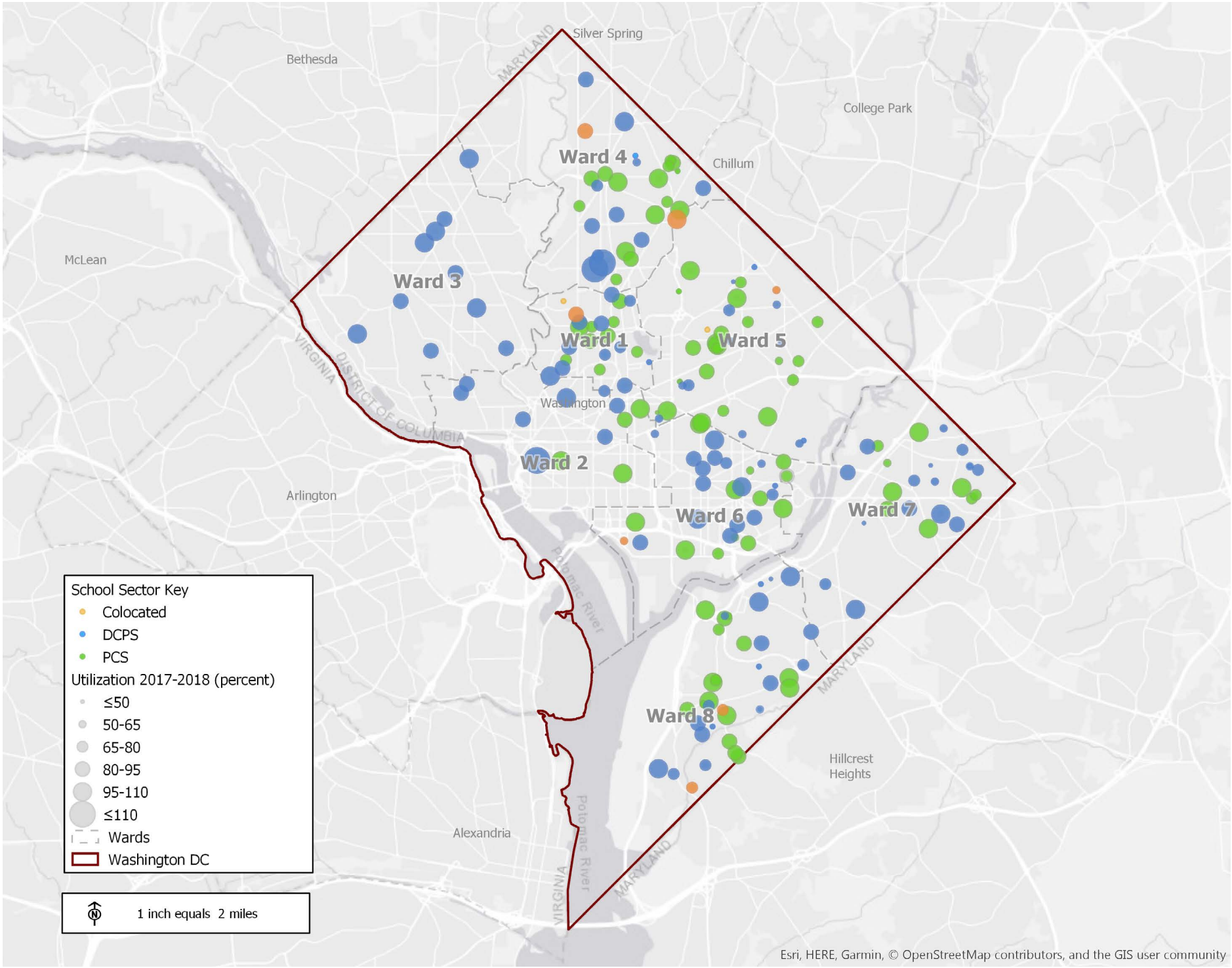

Figure 2.37 Utilization by Sector SY2017–2018
Source: DME 2017, AECOM 2018

and 5 (eight facilities each) and Ward 4 (six facilities). However, 40% of the facilities in Wards 2 and 3 are in the +95% utilization range, the highest proportion across Washington, DC, as seen in **Figure 2.39**, which shows average facility utilization by ward.

There are four public charter schools and 14 DCPS school facilities that are 0 to 50% utilized. In terms of the 18 facilities in the 0 to 50% utilization range and their grade band, six are middle schools and five are elementary schools; 61% of facilities in the 0-50% utilization range are elementary and middle schools. Three of six (50%) middle school facilities with 0 to 50% utilizations are in Ward 8, and three of five (60%) elementary school facilities with 0-50% utilizations are in Ward 5. **Figure 2.40** shows the 18 facilities in the 0-50% utilization range and the number within each grade band.

Over 61% of facilities in the 0-50% utilization range are elementary and middle schools.

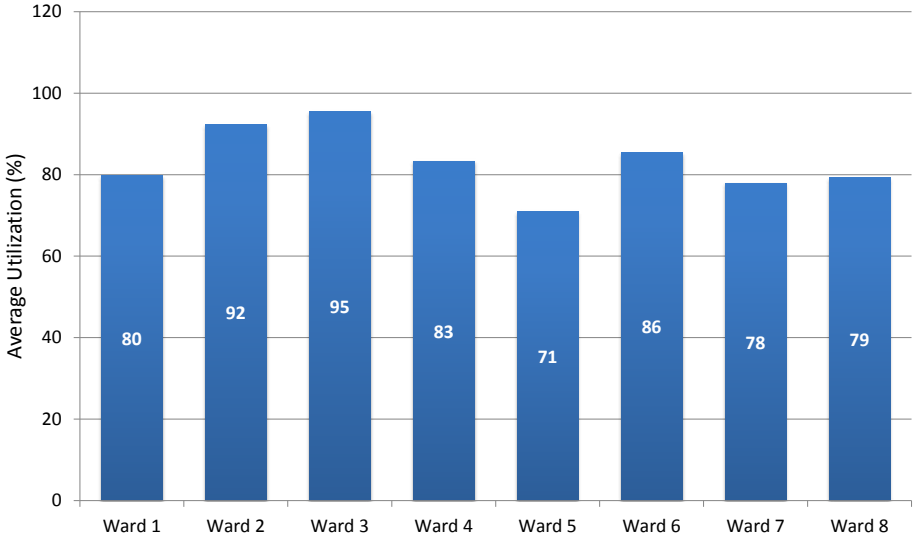

Figure 2.39 School Facility Utilization by Ward, SY2017–18
Source: DME 2017, AECOM 2018

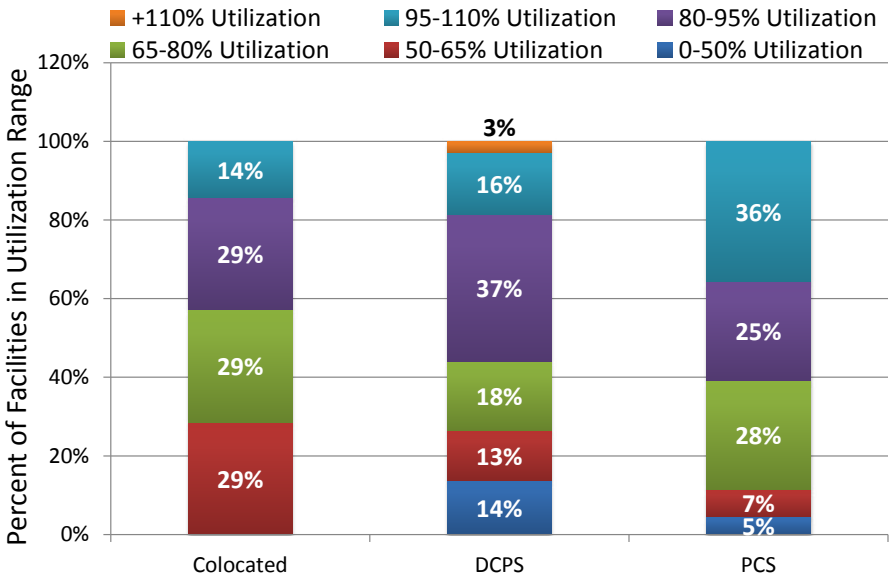

Figure 2.38 Utilization by Sector, SY2017–18
Source: DME 2017, AECOM 2018

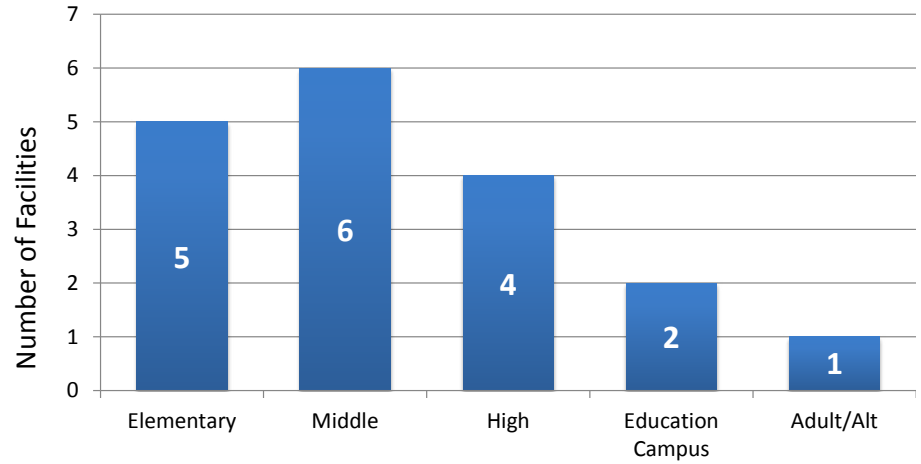

Figure 2.40 0-50% Utilization by Grade Band, SY2017-18
Source: DME 2017, AECOM 2018

2.3.2 Utilization Status and Portables

The section examines the utilization status of facilities with portables. This section does not include facilities that use portables to provide swing space; instead, the focus is on facilities that use portables as a way to increase capacity. The presence of portables at a school indicates that, at some point in time, portables were used to increase capacity in order to keep up with enrollment.

Figure 2.41 and **Table 2.16** show that five of the ten school facilities with portables have utilizations between 80 and 95%, and can be considered optimally utilized. By comparing the utilizations of these five facilities with their utilization without portables, it is apparent that portables are necessary in order for four of these facilities to reach an optimal utilization range of 80 to 95%. In other words, Wards 3 and 4 include school facilities in which portables are necessary to increase capacity to meet enrollment. The facility with the largest difference between utilization with and without portables is found in Ward 4.

Table 2.16 Utilization of School Facilities with Portables

SCHOOL	WARD	UTILIZATION STATUS INCLUDING PORTABLES	UTILIZATION STATUS WITHOUT PORTABLES
Barnard ES	4	85%	128%
Brightwood EC	4	69%	85%
Deal MS	3	94%	108%
Kelly Miller MS	7	54%	65%
Key ES	3	97%	109%
Leckie ES	8	96%	116%
Maury ES	6	105%	136%
Stoddert ES	3	90%	129%
Truesdell EC	4	90%	103%
Tubman ES	1	85%	92%

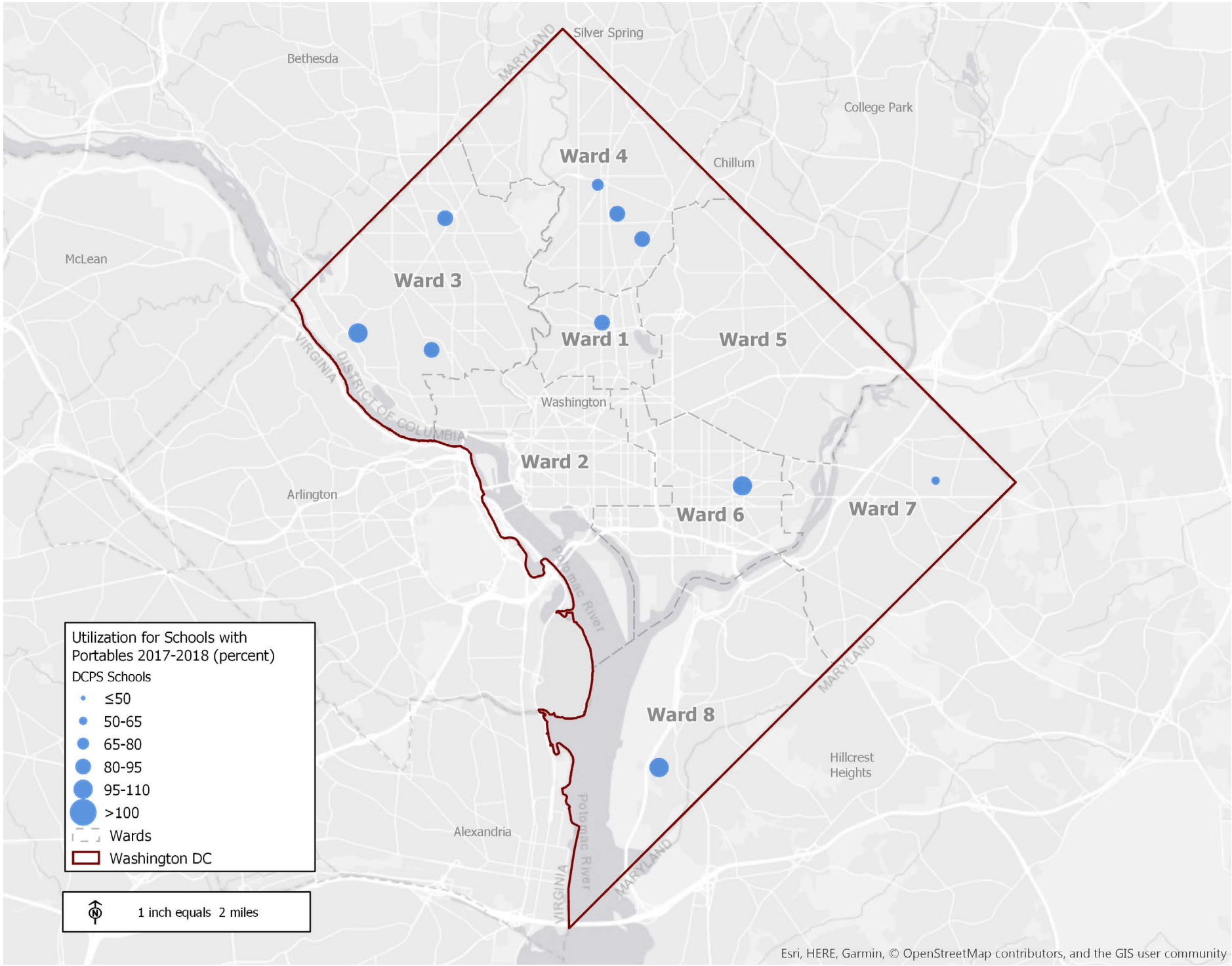

Figure 2.41 Utilization of School Facilities with Portables 2017–2018
Source: DME 2017, AECOM 2018

2.4 MAIN CONCLUSIONS OF THE BASE YEAR ASSESSMENT

This section presents the main findings of the facilities and enrollment analyses above with a view to highlighting the connections between different types of data and providing a better understanding of public school facility dynamics in Washington, DC.

On the demand side, the analysis shows that as enrollment in public education continues to grow in total size, Washington, DC public school students continue to exercise the right to choose their school. Almost half (47%) of Washington, DC's approximately 90,000 students have, through the lottery, enrolled in public charter schools. The share of students enrolled in public charter schools has increased steadily over the last ten years, rising from 36% in SY2008-09 to 47% in SY2017-18.

Of the students who are enrolled in DCPS schools, half of them have elected not to enroll in their local in-boundary school, choosing instead to travel — in many cases, over significant distances — to other DCPS schools located elsewhere in Washington, DC. Overall, approximately three-quarters of students have opted out of their local neighborhood DCPS school, though this varies by ward.

In addition to sector share, absolute enrollment in public charter schools has risen consistently since 2008. Total public charter school enrollment has increased by almost 30% since 2008. On the other hand, enrollment in DCPS schools has only increased by 10% over the same period, and has plateaued during the past three school years. In-boundary enrollment in DCPS schools has increased by an average of only 1.5% per year since 2013. However, DCPS has reversed decades of enrollment decline, and many DCPS elementary schools exhibit high recent enrollment growth rates.

Exercising the choice afforded to them, three-quarters of public school students have opted out of their traditional neighborhood school.

In response to previously substandard facility conditions, the District significantly increased its school modernization efforts after 2008. Overall coverage of modernization activity currently stands at 79% of total facilities, with 87 of 110 DCPS school facilities[22] having been modernized. Facility modernizations have been quite evenly distributed across Washington, DC's eight wards.

The District of Columbia has recently adopted a robust, systematic facility assessment program in order to promote comprehensive and effective management of the District's real assets, including schools. The District is currently in the middle of a three-year process (2017-2020) of assessing the condition of all District-owned school facilities. Under this three-year effort, FCAs have already been prepared for 65 facilities. In the future, the Department of General Services plans to evaluate the physical condition of each of the District's school facilities every three years.

In addition to the FCAs for District-owned facilities, an additional 49 FCAs were prepared in 2018 for public charter schools in non-District-owned facilities. Overall, the results of the SY2017-18 FCAs demonstrate that the District's school facilities are generally in a good state of repair. Of the 114 facilities with FCI scores, 90 received a "Good" or "Fair" FCI score. Twenty-four facilities received a "Poor" FCI score, and no facilities received a "Very Poor" FCI score.

In terms of capacity and utilization, the balance between enrolled students and facility capacity is fairly good in about half of all facilities, whether DCPS (55% of facilities are in the 65%-95% utilization range) or public charter school (53% of facilities are in that range). There, however, the similarity between the two sectors ends. The distribution of DCPS facilities by degree of utilization shows a group (nearly one-fifth of the total) that are highly utilized (>95%) and another cluster (just over one-quarter of the total) that are underutilized (<65%). This suggests that DCPS has room for improvement, in terms of striking a balance between supply and demand at the facility level. While achieving better supply/demand alignment will contribute directly to operational efficiency, facility interventions should

[22] The two Co-located facilities that are District-owned and include DCPS schools are included with the 108 DCPS facilities.

be formulated in the context of educational suitability and overarching educational quality, two important factors that are not covered in this MFP study.

With respect to specialized programs, just over one-third of all school facilities (76 of 212) offer at least one such program; about two-thirds of those 76 facilities are DCPS, while the remainder are PCS and co-located schools. Dual Language/Language Immersion is the most commonly offered specialized program District-wide, followed by Career Technical Education and International Baccalaureate. Even though Dual Language/ Language Immersion is the most offered, it is not the most accessible program. STEM is the most accessible program via public transit, followed by International Baccalaureate and Montessori.

The very uneven transit service quality across Washington, DC means that some students have difficulty accessing schools. However, the District has generally achieved an equitable geographic distribution of school facilities: schools are evenly distributed throughout the eight wards, modernizations have been carried out in all parts of the city, and programs are widely available throughout Washington, DC.