

Phase One: Overview of Insights

Each section of the Interim Report begins with a series of insights from the data analysis. Below are the compiled insights from each of the report's data analysis sections, as well as an overview of insights from community engagement.

As part of this analysis, MCPS was benchmarked with six other school districts. While benchmarking is treated as a separate analysis in this report, insights from benchmarking are incorporated here to provide additional context.¹

¹ The six districts benchmarked are: Charlotte-Mecklenburg Schools (CMS), Duval County Public Schools (DCPS), Fairfax County Public Schools (FCPS), Gwinnett County Public Schools (GCPS), Houston Independent School District (HISD), and Wake County Public Schools (WCPSS). See the Benchmarking section (starting on **page 315**) for more details about the process of selecting and analyzing benchmarks.

Assignment Stability

Assignment stability refers to how often students in MCPS are impacted by changes in school assignment. MCPS strives to limit the number of times a student, school, or part of the county is impacted by changes of school assignment. Policy FAA names assignment stability as one of the four key considerations in educational facilities planning and emphasizes that the BOE should:

- Keep student assignments stable for as long a period as possible
- Consider recent changes to assignment that may have impacted the same students or geographic areas¹

As part of their regular work, MCPS and the BOE analyze potential changes to student assignment for specific schools and clusters. Boundary studies involve geographically specific research of boundary options, within a certain scope recommended by the superintendent of schools before approval by the Board of Education. This research includes an analysis of factors such as travel time and traffic patterns, current and projected enrollment, and the articulation patterns of affected schools. Through a boundary study, MCPS staff develop boundary options to be considered by the BOE for deliberation and approval.²

In this analysis, we examine assignment stability in terms of past boundary studies and the number of changes in assignment across school levels. This analysis does not include boundary studies or changes completed after the start of the 2019-20 school year. This analysis does not take into account historical student level data or grandfathering and choice policies and uses current enrollment numbers as a proxy for historical enrollment. As such, we might expect the actual number of reassigned students to be smaller.

1. Assignment Stability in Depth

MCPS has changed school boundaries 131 times since 1984 as part of 92 boundary studies.

Boundary changes have become less frequent since 2010.

- Between 1984 and 2006, there were 107 boundary changes in total, or roughly four and a half boundary changes per year on average.
- Since 2010 the number of boundary changes has slowed, with 16 boundary changes implemented (or under two a year on average).

1 "Policy FAA: Educational Facilities Planning." 2018. Board of Education of Montgomery County. <https://www.montgomeryschoolsmd.org/departments/policy/pdf/faa.pdf>.

2 For more discussion of boundary studies vs. boundary changes, see **School Boundaries on page 61**.

While Downcounty and Northeast Consortia (DCC, NEC) have seen the largest number of boundary changes since 1984, clusters in the northern part of the district have seen the greatest number of boundary changes on a per school basis.

During the last nine years, middle school (MS) students were most likely to be redistricted, followed by elementary and then high school (HS) students.¹

- 4.5% of elementary school students live in areas that experienced redistricting. In a given year, roughly 0.5 % of ES students were redistricted.
- 6.5% of middle school students live in areas that experienced redistricting, the most of any school level. In a given year, approximately 0.7% of MS students were redistricted.
- There was no major HS level redistricting in the study period.² Only 0.2% of high school students live in areas that experienced redistricting. In a given year, roughly 0.02% of HS students were redistricted.

There were known boundary changes within the last five years in all six benchmark districts.

- Some districts, like MCPS, GCPS, and DCPS regularly review school boundaries to determine the need for boundary studies and changes.
- Charlotte-Mecklenburg School Board completes a comprehensive student assignment review every six years.

1 To get a rough estimate of assignment stability on a yearly basis, we take the proportion of students living in areas redistricted between 2010 and 2019, and divide that figure by nine for the nine-year study period. These numbers use current enrollment numbers as a proxy for historical enrollment. As such, we might expect the actual number of reassigned students to be smaller.

2 This analysis does not include boundary studies or changes completed after the start of the 2019-20 school year. Recent changes affecting high school students in Seneca Valley, Clarksburg, and Northwest clusters are not included.

Utilization

Maintaining a reasonable utilization rate is one of MCPS's major priorities in educational facilities planning. It is important for accommodating growth in the county and school system. Given the high number of overutilized schools, wide variation between school utilization rates, and continued growth of the county, facility utilization presents pressing challenges for MCPS.

In short, utilization measures the capacity of school facilities in relation to the number of students they accommodate. Facility utilization is calculated by dividing student enrollment by program capacity. Program capacity is a measurement based on classroom ratios, which are standards set by MCPS for the number of students per classroom, by school level (with variations for special programs, such as reduced class size elementary classrooms). To arrive at program capacity, MCPS adjusts the student to classroom ratio at the middle and high school levels to account for variations in scheduling.

MCPS defines schools that are 80 to 100% utilized as within the target range. In this report, schools that are utilized below 80% are characterized as "underutilized," schools between 100 and 120% as "somewhat overutilized," and schools above 120% as "highly overutilized."

Definitions of what constitutes a target utilization range vary by school district. For example, one of the districts that this report uses as a benchmark, Charlotte-Mecklenburg Schools in North Carolina, considers 90 to 105% to be the target range. Another benchmark, Duval County Public Schools in Atlanta, uses 90 to 110% as their target range, whereas Fairfax County Public Schools in Virginia uses 85 to 95%.

1. Utilization Across School Attendance Areas

The first set of utilization insights considers the district as a whole. These insights simply characterize the current school utilization conditions across MCPS elementary, middle, and high schools. Key insights include:

In terms of overall utilization rates, MCPS elementary schools are 102% utilized, middle schools are 97% utilized and high schools are 103% utilized.

Elementary schools tend to be more overutilized than middle and high schools. At present there are 74 elementary schools, 24 middle schools and 13 high schools that are overutilized.

At present, there are no underutilized high schools, meaning that all high schools are operating either within the MCPS identified utilization range (80-100%) or are overutilized to some degree (>100%).

Enrollment projections in the 2021-26 CIP show that increasing enrollment and development across the district will continue to affect utilization in the years to come.¹ By 2025-2026:

- The projections forecast a slight decrease in the number of elementary schools that are highly overutilized (17, as compared to 22 today) and somewhat overutilized (47 compared to 52 today).
- At the middle school level, three additional schools are projected to be somewhat overutilized (15, as compared to 12 today), while there is one less school projected to be highly overutilized (one, as compared to two today).
- High schools see the most dramatic increase in overutilization, with an additional five schools projected to become highly overutilized by school year 2025 (seven schools, as compared to two today).

Considering utilization across the district, there is some clustering of overutilization in areas of recent growth and higher population densities:

- Elementary schools that are along and south of US 370 and along I-270 are generally more overutilized.
- Middle schools that are south of US 370 and US 29 are generally more overutilized.
- Areas south of US 370 and east of I-270 seem to show some concentrations of overutilization at the high school level.

¹ Note that any recent or in process actions by BOE are not accounted in the 2021-26 CIP.

As part of benchmarking, we compare the average utilization rates across selected districts. MCPS has higher average utilization rates, on average, than all benchmarks aside from Charlotte-Mecklenburg Schools (CMS):

- The highest utilization rate of any school level (ES, MS, HS) across benchmarked districts are middle schools in CMS, which have an average utilization rate of 114%.
- Duval County and Houston ISD have considerably lower average utilization rates across all school levels than MCPS and Charlotte-Mecklenburg.
- Fairfax County and Wake County each have two school levels below 100% utilization, and one school level above.¹

2. Utilization and School Facilities

This subsection addresses utilization with respect to different aspects of school facilities themselves, such as when they cross the minimum threshold for temporary or long-term interventions to add capacity. We also examine the relationship between a school's program capacity (in total number of seats) and utilization rate. Finally, we analyze relocatable classrooms as a temporary measure to address overutilization. Key insights include:

The minimum threshold identifies schools that qualify for capital expansion (i.e. an addition to expand capacity on site or at a nearby school). Currently, 27 elementary schools, 3 middle schools, and 8 high schools are above the minimum threshold set by MCPS.

Since 2009, the percentage of elementary schools over the minimum threshold has remained the same while the percentage of high schools has increased fourfold.

- At the elementary school level, 20% of schools are over the minimum threshold (defined as overutilized by more than 92 students) -- the same percentage as there were 10 years ago.
- The number of middle schools over the minimum threshold (150 students) has grown from one to three schools in the last ten years. Today, eight percent of middle schools are overutilized by more than 150 students.

¹ Utilization data was not available for Gwinnett County Public Schools.

- In 2009, only two out of 25 high schools (or eight percent) were over the minimum threshold (or, overutilized by more than 200 students). In 2020, eight out of 25 are. This means 32% of MCPS high schools are overutilized by more than 200 students.

Elementary schools tend to be more overutilized the smaller the program capacity they have.

- Elementary schools with fewer than 400 seats tend to be more overutilized than those with more than 400 seats.
- There are no discernible patterns between utilization and school program capacity for middle and high schools.

As of the 2019-2020 school year, there are 434 relocatable classrooms in use in MCPS for the purposes of addressing utilization. Schools with higher utilization rates tend to have higher numbers of relocatable classrooms.

- Relocatable classrooms are a temporary measure used to address overutilization, and do not factor into a school’s program capacity for calculating utilization.
- Greater challenges with overutilization are associated with schools that have a greater number of relocatable classrooms – schools with large numbers of relocatable classroom do not have lower utilization rates.
- Gaithersburg, Northwest, Blair, and Clarksburg have the most relocatable classrooms of all clusters.

3. Utilization and Adjacency

The third set of utilization insights looks at schools’ utilization rates relative to their nearby schools. This analysis was conducted to gain insights as to whether utilization is well-balanced across adjacent attendance areas. The work conducted two analyses of adjacency: one study examined a school’s utilization as compared to its nearest school, and another study examined a school’s utilization relative to the five nearest schools (comparing elementary schools to other nearby elementary schools, middle schools to nearby middle schools and high schools to nearby high schools). This analysis included schools across cluster boundary lines. In this subsection, we also look at utilization rates across articulation patterns, with a focus on elementary schools that feed into middle schools. Key insights include:

Many schools in the district have very different utilization rates from their nearest schools. One way to understand the disparities between nearby schools is to compare the utilization rate of each school in the district with that of its closest school:

- At the elementary school level, the widest gap (or, differential) in utilization rates between two nearest schools is 77 percentage points. In this case, a 156.9% overutilized school is nearest to a 79.5% underutilized school.
- At the middle school level, the largest utilization differential between two nearest schools is 43 percentage points. In this case, a 119.4% overutilized school is nearest to a 73.1% underutilized school.
- The largest utilization differential between two nearest high schools is 29 percentage points. In this case, a 121.5% overutilized school is nearest to a 92.6% utilized school.

Elementary schools tend to be more dissimilar from their nearest five neighbors than middle and high schools.

- There are 26 elementary schools, out of 135 in total, whose utilization rates are very dissimilar from their five nearest elementary schools (20 percentage points or more).
- There are 6 middle schools, out of 40 in total, whose utilization rates are very dissimilar from their five nearest middle schools (20 percentage points or more).
- There are only 2 high schools, out of 25 in total, whose utilization rates are very dissimilar from their five nearest high schools (20 percentage points or more).

There are only three underutilized middle schools in MCPS. The attendance areas of these three schools are all adjacent to the attendance areas of somewhat overutilized middle schools.

4. Utilization Over Time

While this study represents a snapshot in time, it is informative to look at how utilization has changed over the course of the last decade in MCPS. This set of analyses looks at how utilization rates have changed over the last 10 years to understand whether utilization issues across the district are improving or getting worse. One way MCPS accommodates for increases in utilization is by constructing new schools. This analysis examines how often new schools have been built in the last decade, and whether this has addressed utilization challenges. All of these analyses use the 2009-10 school year to the 2019-20 school year to study changes in utilization over time. Key insights include:

Change in utilization rates in the last ten years varies by cluster and across school levels:

- Eight clusters have experienced a decrease in total elementary utilization between the 2009-10 school year and 2019- 20 school year.
- Thirteen clusters or consortia have seen an increase in total middle school utilization. Five of these clusters saw an increase of 20 percentage points or more.
- Total high school utilization rates increased in well over half of all clusters or consortia. Three clusters saw increases of 20 percentage points or more.

Since 2009, all new school construction has been at the elementary and middle school levels.

- Five new elementary schools were constructed, all in the Richard Montgomery cluster and the Downcounty Consortium.
- Three middle schools were constructed in the last decade, serving three clusters.
- Comparatively, no new high schools were constructed in the last decade.

5. Special Conditions

This set of findings relates to particular analyses that were done related to MCPS unique assignment conditions and program offerings. School choice, magnet and other special programs, and the consortia create unique utilization conditions that require their own study. In addition, MCPS attendance areas include particular features, such as “island assignments” and “paired schools.”

This set of analyses related to MCPS’s unique assignment conditions and program offerings. School choice, magnet programs, and the consortia create unique utilization conditions that require special consideration. In addition, some MCPS attendance areas include particular features, such as island assignments and paired schools. Island assignments are non-contiguous service areas, where students may cross through another attendance area to get to their base school. Some attendance areas separate kindergarten through second grade into one school building and third to fifth grade into another school building – this is referred to as paired schools. Finally, Title I schools receive additional supports due to their large concentration of low-income students, which makes an understanding of utilization challenge at these schools important. In this subsection, we consider how these kinds of conditions may impact school utilization rates.

Schools with island assignments face the same utilization challenges as non-island assignment schools.

- Some island assignments may have historically helped to resolve utilization issues. However, today they are not yielding better utilization rates than other typical attendance areas.

The average utilization rate of paired schools is slightly below the typical elementary school average utilization rate.

- Counting each paired school individually, the average utilization rate is within the target utilization range, at 98.79%.
- This is somewhat lower than the average elementary school utilization rate of 102%.

Special program schools are utilized at comparatively similar rates to non-special program schools, with the exception of schools with Spanish Immersion (SI) programs, which tend to be overutilized.

- All three Spanish Immersion (SI) elementary schools are overutilized, with two of them highly overutilized.

Title I schools are on average more overutilized than other elementary schools.

- There are 23 Title I elementary schools in MCPS. The average utilization rate of Title I schools is 108%, compared to about 102% for non-Title I schools.

The Downcounty Consortium (DCC) and Northeast Consortium (NEC) face greater issues of overutilization across all levels, as compared to clusters across the district.

- At the elementary school level, schools in the consortia have an average utilization rate of 107%, as compared to an average of 101% among ES outside of consortia.
- Total utilization rate for middle schools within the DCC and NEC is 102%, compared to an average of 94% among MS outside of the consortia.
- Consortia high schools have an average utilization rate of roughly 103%, as compared to an average of 102% among high schools outside of the



Participants in a table discussion at a regional public meeting at Blair High School on January 11, 2020 (photo credit: C.D. Boykin)

Diversity

Diversity is one of MCPS’s considerations for educational facilities planning and boundary alignment. Diversity in a student body refers to differences between students. MCPS values diversity in schools and seeks to support schools that reflect the diversity of the communities they are in.

While diversity is complex and carries many meanings, for the purposes of this analysis, we focus on three primary markers of diversity that MCPS draws upon in facilities planning: race and ethnicity, socio-economic background, and English language proficiency. For discussion of race and ethnicity, the groups used in this report are based on available data that MCPS uses to categorize MCPS students, which includes, *Asian, Black, Hispanic, White, and Other*. For discussions of income, this report considers both FARMS (free and reduced-price meals) and Ever-FARMS as the key metrics. For English language proficiency, the report relies on MCPS data on ESOL (English for Speakers of Other Languages) program enrollment.

Selecting meaningful scales of analysis is an important methodological decision for considering diversity. Whereas in the case of utilization, there is a “target” utilization of 80 to 100%, for diversity the best way to make comparisons is to consider how a school compares to its nearest schools or to cluster averages.

Today, the student body of MCPS is very diverse. No single racial or ethnic group represents a majority of students. MCPS has grown increasingly diverse in recent decades as the county’s overall population has diversified,¹ and this portion of the report seeks to understand to what degree that diversity is reflected across the school system.

This report uses a measure called the **dissimilarity index**. The dissimilarity index allows us to look at how different the overall demographic make-up of one school is to other schools, or to a shared standard such as a cluster-wide average. On the most basic level, high dissimilarity shows a greater difference between the two subjects being compared (a school or group of schools, for example). A low dissimilarity shows a lesser difference between the two subjects being compared. Conceptually, one can think of a dissimilarity index representing the total change in a school necessary for that school to look exactly like other schools.²

MCPS has various policies and programs in place to advance socio-economic and racial equity in the school system. In some cases, these programs follow state standards and funding (as in Title I schools). In other cases, these programs are particular to MCPS, such as the district’s Equity Initiatives Unit.³

1 See **Introduction on page 38**, for more detail on demographic changes in student enrollment.

2 See an in-depth discussion of the dissimilarity index in **Introduction to Dissimilarity on page 207**.

3 See <https://www.montgomeryschoolsmd.org/departments/clusteradmin/equity/>

Key insights include:

1. Distribution: Diversity Across the District

The first set of analyses the report considered was the distribution of different diversity indicators across the school system. This work laid the context for deeper understanding of the key measures of diversity, by understanding their overall distribution across MCPS. It presents general findings about the distribution of racial and ethnic demographics, FARMS/Ever-FARMS rates, and ESOL rates across the district.

Overall, the student body in MCPS is approximately 33% Hispanic, 27% White, 21% Black, 14% Asian, and a combined 5% “Other” (Pacific Islander, Native American, or multi-racial).

No single racial/ethnic group represents a majority of students in MCPS. Three of the four major racial/ethnic groups in MCPS make up over 20% of the student population.

- 42% of all MCPS schools have a student body where one racial or ethnic group makes up an absolute majority (50% or more) of students.
- The large majority of schools in MCPS (79%) are diverse, with two or three racial groups representing more than 15% of those schools’ students.
- On the other hand, 26 schools (13%) have only one racial or ethnic group representing more than 15% of the student body, with all other groups each representing less than 15%.

Approximately one in three students in MCPS is currently enrolled in the Free and Reduced-price Meals System (FARMS).

- An additional 12% of the student body (or, 46% total) has previously been FARMS eligible (Ever-FARMS).

25% of elementary school students are enrolled in ESOL. This decreases to 11% at the middle and high school levels.

Both FARMS and ESOL rates correlate strongly with racial and ethnic demographics:

- Black and Hispanic students make up a combined 88% of FARMS students, despite making up only 54% of the total student population. Hispanic students account for the majority of this group, at 57%.
- 73% of students enrolled in the ESOL program are Hispanic.

Similar to MCPS, all of the benchmark districts are diverse places at the district level. MCPS is among the benchmarked districts with lower enrollment in Free and Reduced Lunch (FRL):¹

- At the elementary school level, the Free and Reduced-price Lunch (FRL) enrollment rate is highest in Houston ISD (80%), while MCPS, Fairfax County, and Wake County have enrollment rates below 40%.
- At the high school level, FRL enrollment in MCPS is the second-lowest enrollment rate for any level across all benchmark districts. High schools in Fairfax County have the lowest overall FRL enrollment at 27%.

2. Diversity by School Adjacencies

The next analysis considered the **adjacency** of schools and students of similar or different socio-economic, racial, and language backgrounds. This report examines the three nearest schools, including schools across cluster boundaries, as a measure of how dissimilar or similar a school is from its nearby schools. This subsection highlights two types of adjacencies:

- Clustering of like with like: In some parts of the district we see a relatively homogeneous distribution of racial and ethnic groups and wealth relative to the district overall.
- Adjacency of unlike with unlike: In other parts of the district we see neighboring communities with very different demographic and socio-economic make-up.

Key insights in this set of analyses include:

¹ Based on Free and Reduced Lunch (FRL) programs as defined by the National Center for Education Statistics for the most recent available school year (2017-2018). National FRL guidelines align with the income brackets used by MCPS for FARMS (Free and Reduced Meals System). FRL is a useful means for comparing economic disparities within student populations across districts. See more information about FRL and benchmarks in the **Benchmark** section of this report.

This set of analyses looks at both racial/ethnic dissimilarity, and socio-economic dissimilarity. At the district level, there are two general conditions that are important to understand:

- Schools near to one another are often very dissimilar from one another in terms of racial, ethnic, and socio-economic composition.
- At the scale of the district, patterns in dissimilarity vary widely. This reflects the heterogeneity of local communities.

When compared to the three nearest schools by school level, elementary schools within the midcounty region tend to be more dissimilar racially and socio-economically. Conversely, midcounty middle and high schools tend to be more racially similar.

Elementary schools in the Downcounty Consortium (DCC) have among the highest rates of racial and socio-economic dissimilarity when compared to their nearest schools.

- However, none of the top five highly dissimilar middle and high schools are within the DCC.

Elementary and middle schools in clusters in the southwest have very low racial and economic dissimilarity from their nearest schools in most cases.

- In other words, these schools are more similar to their neighboring schools. This reflects the high degree of racial and socio-economic homogeneity in these areas of the county.

Socio-economic and racial dissimilarity are correlated in most cases, but there are exceptions to this.

- Some notable examples of clusters where elementary schools have very different rates of socio-economic and racial dissimilarity from their nearest schools include Poolesville, Watkins Mill, and Northeast Consortium.

Racial groups in MCPS tend to be somewhat more evenly distributed than the benchmarked districts, aside from Wake County, whose average dissimilarity score is the lowest across

all benchmarks:

- Among the benchmarked districts at the ES level, there are three districts that have higher racial dissimilarity scores than MCPS and one that has a lower score. MCPS has the same score as WCPSS and DCPS.
- For benchmarked districts at the MS level, there are four districts that have higher racial dissimilarity scores than MCPS and one that has a lower score (WCPSS). MCPS has the same score as GCPS
- For benchmarked districts at the HS level, there are five districts that have higher racial dissimilarity scores than MCPS and one that has a lower score (WCPSS). Racial dissimilarity scores are highest at the HS level for MCPS and all but one of the benchmarked districts (CMS).

Although the benchmarked districts have relatively low average dissimilarity scores at the scale of the district, we see a different story at the level of individual schools. In each district, there is extreme variation in racial dissimilarity scores between schools.

- The minimum dissimilarity value compared to three closest elementary schools in MCPS is 1.9% while the maximum is 42.6%. There is a 40 percentage point difference between the minimum dissimilarity and the maximum dissimilarity at the middle school level, and a 35 percentage point difference at the high school level.
- Across all benchmarks, the greatest variation at the elementary school level is 66% in Fairfax.
- Across all benchmarks, the greatest variation at the middle school level is in Charlotte-Mecklenburg, at 67%.
- Across all benchmarks, the greatest variation at the high school level is in Houston, at 68%.

3. The Effect of Feeder Patterns on Diversity

This section of the report addresses feeder patterns and diversity through different analyses. First, an analysis considers whether cluster boundaries, which have been established to simplify feeder patterns from elementary to middle and high schools, affect the levels of dissimilarity of elementary schools on either side of a cluster boundary. Second, an analysis considers how dissimilarity varies at different levels of schools as students progress from elementary, to middle, to high school. This set of analyses compares schools to their closest schools by roadway distance, including schools across cluster boundaries.

This analysis suggests that the cluster boundaries in MCPS may contribute to racial and/or socio-economic isolation to some degree.

- In many cases across the district, cluster boundaries isolate schools from one another that might otherwise look more socio-economically or racially similar. For example, elementary schools whose nearest schools are in different clusters are more likely to be racially dissimilar from their nearest schools than if their nearest schools are located in the same cluster.

In addition to adjacent schools on the other side of cluster boundaries, the shape of these boundaries themselves seems to have a relationship with racial and socio-economic dissimilarity. Schools with high dissimilarities when compared to their nearest schools can often be found in school clusters with boundaries that have highly irregular shapes.

- Clusters in midcounty, including the Wootton, Quince Orchard, Northwest, Seneca Valley, Clarksburg, and Gaithersburg have some of the most irregularly shaped cluster boundaries. Elementary schools in these clusters, in particular, are most likely to be racially and socio-economically dissimilar from their nearest neighbors, which often fall in different clusters

Ever-FARMS rates by school are more evenly distributed at the high school level than at the middle school level, and more evenly distributed at the middle school level than at the elementary school level.

- Seven out of 25 high schools (31%) have Ever-FARMS rates between 40% and 60%, near the MCPS average of 46%.
- By contrast, only 18 of 135 elementary schools (13%) fall in that same middle category.

4. Special Conditions

This final set of analyses considers how special conditions in MCPS may impact the three measures of diversity we are looking at in this report. First, we analyze non-contiguous school attendance areas (or island assignments) with relation to diversity. Then we look at school choice programs to see if these impact diversity across school levels. Historically, school choice programs have been one strategy

for voluntary integration of schools in MCPS. So, it is instructive to ask the question of how diversity may be impacted by these programs, and how these programs may impact diversity across MCPS.

On the whole, schools with island assignments are more racially and socio-economically diverse than schools without island assignments.

- Many island assignments significantly change the overall socio-economic and racial/ethnic background of their schools' student bodies. There are numerous examples of "islands" that are highly dissimilar from one another and their attendance area bodies (the part of the attendance area where the school is located).

The overall populations at schools with island assignments tend to be more socio-economically and racially/ethnically dissimilar to the students residing in their own islands than to their nearest schools.

At the middle school level, regional choice programs (special programs accessible to students across multiple attendance areas) correspond with lower dissimilarity.

- Middle schools with regional choice programs have lower socio-economic and racial/ethnic dissimilarity to their nearest schools. In other words, special programs at the middle school level seem to contribute to more even distribution of racial/ethnic and socio-economic groups, on average.
- There are no significant patterns—positive or negative—at the elementary and high school levels.

Proximity

Covering over 500 square miles, Montgomery County is both large and varied. The county includes rural, suburban, metropolitan, and urban areas.¹ While the population density of MCPS as a whole is over 2,000 persons/square mile, densities vary widely between the rural areas upcounty and the highly urbanized areas downcounty and along I-270.² Across the county, mobility and modes of travel vary widely. While 37% of elementary school students, 25% of middle school students, and 28% of high school students live in walk zones—meaning MCPS has determined they have a safe and accessible route to school-- most students depend on car and bus trips of varying distances.

In addition to the county's size and varied density, recent and continued growth plays into the school system's proximity challenges. In the last decade, MCPS student enrollment increased by about 15%.³ During that same time, the population of Montgomery County has grown from around 972,000 to over 1.05 million, amounting to an 8% increase overall. With 15% more students traveling to school now than 10 years ago, in a more dense and congested county, proximity to schools is of great concern to MCPS and many of its families. While this study cannot account for the varied times of student trips to school or the variable of traffic (see **What About Traffic?** on page 258), proximity is a crucial planning question for MCPS: how does the number of road-miles traveled vary for students across the district each day?

MCPS strives to create neighborhood schools, where students live as close as possible to school. The county also strives to maximize the number of students who walk to school. Student proximity to schools is an important planning consideration for MCPS, as laid out in Policy FAA, which names geography as a key factor in educational facilities planning. As cited in this policy, the school system has an ongoing commitment to "community involvement in schools."⁴

Proximity to school is not only important for students, families, and communities, but also for the school district's resources. MCPS transports about 100,000 students every day, in nearly 1,200 buses.⁵ As enrollment in the school system has grown, so too has the amount of resources needed to transport this growing student body each day.

Throughout this series of analyses, students who attend a school other than their base (or assigned) school are not included. This includes choice, magnet, and COSA transfer students. For students residing in a consortium, their current school

1 See **Montgomery County Context** on page 63, for more discussion of density in Montgomery County.

2 Population density data via U.S. Census Bureau.

3 Three major drivers of student population trends—resident live births, aging of the student population, and migration patterns-- are discussed in depth in the FY 2021-2026 CIP Plan.

4 "Policy FAA: Educational Facilities Planning." 2018. Board of Education of Montgomery County. <https://www.montgomeryschoolsmd.org/departments/policy/pdf/faa.pdf>.

5 "Supporting Our Students—Investing in Our Future." n.d. MCPS Budget 101. <https://www.montgomeryschoolsmd.org/budget-101/index.html>.

is counted as their base school, so long as it is within the consortium. Subsection 3: Special Cases looks more closely at how proximity is impacted by these and other special conditions.

1. Proximity to Schools

The first analysis considered the average distance of students to school by school level, based on current school boundaries, and examined how this average distance varies across the county, including factors such as attendance area size and population density. It looks at miles traveled to school (using road network distances), and also examines the proportion of students per school who attend the school located closest to their home. Finally, to provide greater context to these understandings of proximity, this analysis looks at the average distance between current school and closest school to better understand how the density of schools impacts proximity. Key insights include:

Generally, students living in larger school attendance areas travel greater distances to school. This is true for schools at the same school level, and corresponds to the trend of students traveling farther to school as they advance through school levels.

- The average distance to school for all elementary schools is 1.2 mi, with a school minimum and maximum of 0.4 mi and 3.5 mi, respectively.
- The average distance to school for all middle schools is 2.1 mi, with a school minimum and maximum of 1mi and 4.2 mi, respectively.
- The average distance traveled to school for high schools is 2.5 mi, with a school minimum and maximum of 1.5 mi and 4.9 mi, respectively.

Middle school students are less likely than elementary and high school students to attend the school closest to their home.

- At the elementary school level, about 69% of students attend the school closest to their home.
- At the middle school level, only about 60% of students attend the school closest to their home
- At the high school level, about 68% of students attend the school closest to their home.

The proportion of students who attend their closest schools varies widely by cluster.

- This value ranges from 54% in the Magruder cluster up to nearly 95% in the Poolesville cluster. This variation may be due to land use distribution and density, as well as where schools are sited relative to population densities.

In terms of the proportion of students who attend their closest schools, there are also disparities between schools within the same clusters. The widest disparities are at the middle school level.

- At the elementary school level, cluster averages range from approximately 56% to approximately 86% of students who attend their closest school (a range of about 30 percentage points).
- At the middle school level, the cluster averages range from 29% to 100% of students who attend their closest school. At over 70 percentage points, this is by far the widest range of any school level.
- At the high school level, cluster averages range from roughly 49% to 95% of students who attend their closest school. This range of over 40 percentage points is wider than the ES level, but still much smaller than the middle school level.

In general, where a higher proportion of students attend their closest schools, these students also tend to travel shorter distances.

- This trend is most pronounced at the middle and high school levels, although there are significant exceptions at each level.

Students in more densely populated areas live closer to school than those in less densely populated parts of the county.

- Students who attend school closer to the I-270 corridor tend to have shorter average distances to/from school than their peers closer to the edge of the county.

Island assignment attendance areas have an impact on average distance to school at all levels. Students living in island assignment attendance areas tend to travel farther distances to school.

2. Proximity and Walk Zones

MCPS aims for as many students to walk to school as possible and designates particular areas around schools as walk zones. In this set of analyses, we examine these geographies, as well as other factors related to walkability to schools in MCPS. This set of analyses considered **walkability** to school, by looking at the average walk distance from school by school level. This analysis also differentiates between the walk radius and the walk zone, to better understand the relationships between walkability and proximity. Key insights include:

Elementary school students are most likely to live within their school's walk zone, followed by high school students.

- At the elementary school level, 38% of students live within their school's walk zone.
- At the middle school level, 25% of students live within their school's walk zone.
- At the high school level, 29% of students live within their school's walk zone.

On average, students living in walk zones tend to live at least a half mile away from school. This increases across school levels.

- Elementary school students who live within their school's walk zone live 0.51 miles away from school on average.
- Middle school students in the walk zone live 0.86 miles away on average.
- High school students in the walk zone live about 1.2 miles away on average.

More than half of all the elementary schools have less than 50% of students within the walk zone.

- This increases at the middle school and high school levels: more than three-quarters of all MCPS middle schools and high schools have less than 50% of the students within the walk zone.

Students who live in the I-270 corridor area are more likely to live within their school's walk zone than in other parts of the county.

- This suggests a correlation between population density and the likelihood of students living within their school's walk zones.

Not all schools have walk zones.

- Due to factors such as traffic hazards and roadway conditions around schools, not all schools have walk zones. Twelve of 135 elementary schools, two of 40 middle schools and two of 25 high schools do not have walk zones.

At each school level, MCPS sets a maximum distance that student walkers can reasonably walk (the walk-radius), and a walk-zone, which accounts for the actual walkable routes within this radius. There is often a considerable difference between the percentage of students who live within the walk-radius and the MCPS-defined walk zone, suggesting that walkability is not simply a matter of proximity to school.

- About 46% of students overall (across all grade levels) are within the MCPS defined walk-radius polygon (one mile for elementary students, 1.5 miles for middle school students, and two miles for high school students). But only 32% are within MCPS-designated walk zones for their school. That means that 14% of students (46% minus 32%) who theoretically live close enough to school to walk, do not actually have a viable walking route to school.

Special Conditions

There are a number of special conditions that may impact our understanding of proximity in MCPS. This includes split and cross-cluster articulation patterns, in which primary students feed into multiple different secondary schools or articulate across cluster lines. Next, many MCPS students choose not to attend their base school as part of MCPS's school choice programs. Additionally, 30% of students districtwide reside within high school consortia and attend consortia schools, in which articulation patterns operate differently than the rest of the district. This subsection looks at these special conditions in MCPS, through the lens of proximity.

There are 19 instances in which elementary school students do not all simply articulate to a single middle school within their cluster. And there are six cases of split articulation between middle and high schools.

Among the 25 instances mentioned above, we can observe three types of articulation patterns in the school system today:

- Inter-cluster articulation: where all primary school (ES or MS) students at a school articulate to a secondary (MS or HS) school located in a different cluster. Ten elementary schools articulate to a middle school in a different cluster, and six middle schools have this kind of articulation pattern.
- Intra-cluster split articulation: where primary students (ES or MS) articulate to multiple secondary schools but within the same cluster. Five elementary schools in the district articulate this way (at the MS level, this only happens in consortia).
- Inter-cluster split articulation: where primary students articulate to multiple secondary schools – both in the same and different clusters than that of the primary school itself. Four elementary schools have this kind of articulation pattern, and no middle schools do.

In cases where elementary students travel across cluster boundaries to attend a middle school in a different cluster (inter-cluster articulation), the average travel distance is slightly greater than the district average.

Oftentimes, inter-cluster split articulation (where 100% of elementary students at a school articulate to a middle school in another cluster) occurs where elementary school attendance areas are quite large.

Choice students travel the farthest to attend the choice program at Poolesville HS. This is the only school where over half of students are choice students from outside the school's attendance area.

The Northeast Consortium (NEC) seems to experience greater challenges with proximity than many other areas of the district—consortia or not.

- Some factors that underlie this include a high number of island assignment attendance areas, and areas of lower density within the consortia. The Downcounty Consortium (DCC) experiences fewer proximity related challenges, based on factors in this analysis.

39.8% of NEC students, and 30.6% of DCC students do not attend the school closest to where they live.

- This places the NEC above and the DCC below the districtwide average of 33.5% students who do not attend their closest school.

The school with the highest average distance to school in both consortia is Blake HS, which also has the highest average travel distance in the district.

- The average student travels 4.9 miles to Blake HS, which is in the NEC. On the other hand, the lowest average distance to school in both consortia is Wheaton HS in the DCC, where the average student travels only 1.5 miles. This is well under the average of 2.5 miles for high school students across the district.



Participants at a regional public meeting at Gaithersburg High School on December 4, 2019 (photo credit: Rodrick Campbell)

Community Engagement

In the Districtwide Boundary Analysis process, data intelligence and community intelligence operate in tandem: community engagement provides integral context, insight, and complexity to the data, while data analysis adds depth and clarity to community narratives. Community engagement in this Boundary Analysis is intended to serve as a two-way process that both enables participants to gain knowledge and awareness about central issues, key data points, and the Boundary Analysis process, and enables MCPS to gather critical insights about the specific needs and challenges that the community foresees, as well as their insights about the factors that guide their decision-making regarding school boundaries: utilization, diversity, proximity, and assignment stability.

After each public meeting, our team transcribed the feedback from the facilitator worksheets and created six reports for each meeting. Across the six meetings, nearly 4,000 comments were transcribed. **Community Engagement Overview on page 352** and **Appendix 8.2. on page 530** provide more in-depth information on the community engagement process and how it has impacted this analysis so far. Please note that this qualitative analysis attempts to capture the ideas, opinions, and perspectives shared by participants without looking to explain, validate, or justify any of them.

In addition to larger public meetings, as of the publishing of this report, 12 small group meetings have been conducted. We will continue to conduct small group meetings in the coming months to learn from and hear the concerns of various groups around the county, and the insights from these meetings will be analyzed and included in the final report.

The summary of comments that follows reflects the comments of participants at regional public meetings in Phase 1.

Utilization

Participants raised several key challenges. Many observed not only how much the county's population has grown, but also how this growth impacts the school utilization. Thus, an important theme was to urge the school system to coordinate effectively with County planning officials to stay on top of growth, including where development is occurring, and how much development is upcoming.

Population growth directly affects enrollment and enrollment projections. Participants emphasized the need to ensure that MCPS's enrollment projections are as accurate as possible.

Many participants urged that--given the volume of growth the County has experienced and will continue to experience – school constructions and additions will need to continue, if not accelerate.

Many participants expressed concern about the frequent use of relocatables (portables) at schools, even schools that were recently constructed. Participants were particularly concerned about the perceived overutilization of many elementary schools.

Participants raised questions about how magnet, specialized, and choice schools impact utilization across the county, and whether moving and/or expanding those programs might have a positive impact on currently underutilized schools. Participants also expressed concern about how consortia schools impact MCPS utilization data.

Participants also wondered how utilization is linked to student academic performance or the quality of the academic programs at schools, how utilization intersects with student-teacher ratios across the school system, and, how it intersects with students' and schools' access to resources.

Diversity

Many participants had concern with the use of Ever-FARMS as a metric for analyzing student body diversity. In general, many participants expressed confusion about how diversity was being defined for this analysis and many indicated a need for a broad range of variables to measure diversity be incorporated into this analysis including racial diversity, cultural diversity, country of origin, English for Speakers of Other Languages (ESOL), etc.

There was also a clear acknowledgment across meetings that students who are Ever-FARMS and schools with high Ever-FARMS rates require more support and resources than other

students and schools.

Some participants raised concerns around the possibility FARMS students might be moved in future boundary changes to schools with lower FARMS rates, or that non-FARMS students might move to schools with higher FARMS rates and asked what impact this would have on student performance--both for those who moved and on overall school performance.

Participants also expressed a need to better understand the interplay between student body diversity and proximity as well as diversity and school utilization. There were a range of comments focused on how diversity intersects with new housing construction, home values, school location, and future school construction.

Finally, there was a concern, given the 2018 update to Policy FAA, that diversity would be weighed most heavily in this analysis, above utilization and proximity.

Proximity

In the majority of public meetings, proximity to schools was emphasized frequently as the most important lens to participants. However, some participants expressed the opposite perspective. Many participants expressed concerns that the analysis would not incorporate travel time or traffic patterns and emphasized the need for the analysis to include both.

Participants underscored that long and/or increased travel times have numerous consequences, impacting before-school care, after-school care, extracurricular activities, sleep time, and work commutes for parents. Parents shared concerns about longer bus rides to schools much further away than their children's current schools and highlighted concerns about safety on buses, environmental impacts and cost consequences.

Participants also observed population growth and the location of new development as drivers of potential changes to proximity. Participants expressed confusion about the relationship in this analysis between proximity calculations and magnet, choice, and consortia. Finally, many attendees wanted to remind MCPS that families choose where they live based on where schools are located.



Participants in a table discussion at a regional public meeting at Gaithersburg High School on December 4, 2019 (photo credit: Rodrick Campbell)

Conclusion

The insights above provide a window into the wide range of issues facing MCPS today. In order to grapple with the complexity of each of these issues, it is important that data analysis continues to be informed by community input. This initial set of insights provides a jumping off point for the continued work of this Districtwide Boundary Analysis, and future efforts by MCPS to address challenges related to utilization, diversity, proximity and assignment stability.