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School Boundary Changes and Diversification in a Suburban School District: The Case of Howard County, Maryland

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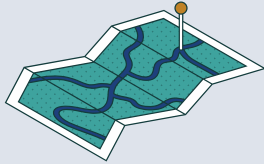


Notes on Our Neighbors

School Boundary Changes and Diversification in a Suburban School District: The Case of Howard County, Maryland

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LSABS



The Longitudinal School Attendance Boundary System (LSABS) is a novel data collection effort that aims to compile school attendance zone boundary information from school districts across the country. Coled by Drs. Chris Fowler and Erica Frankenberg of Penn State University, the project will lead to a publicly available database of school boundaries from 1990 to 2020 for a national sample of K-12 school districts. This database will allow us to understand how boundaries have shaped student populations over the years and will help us to support districts in creating and maintaining equitable boundaries.

More information is available:
<https://cecr.ed.psu.edu/labs>.

Introduction

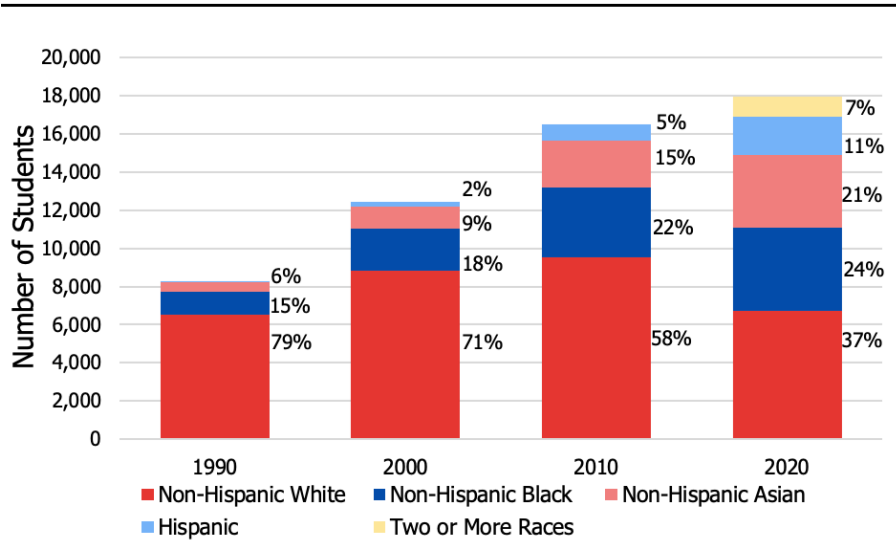
Suburbs, historically filled with White residents, have become more ethnically and economically diverse in recent decades (Siegel-Hawley, 2013). Such demographic changes impact suburban school districts, where White students no longer comprise the majority in the largest metro areas (Diamond & Posey-Maddox, 2020). However, diversification of suburban communities does not necessarily translate into school-level integration. This is partly due to school attendance zone boundaries that determine where children attend school, thereby sorting student populations and allocating educational opportunity. Given the critical implications of school boundaries, White and/or economically privileged communities often work to preserve exclusionary boundaries and hoard access to quality education, especially in suburban contexts where families of color have recently arrived in large numbers (Frankenberg & Orfield, 2012; Holme, et al., 2014; Siegel-Hawley, 2013; Siegel-Hawley et al., 2016; Wiley et al., 2012). School boundaries that serve to segregate are detrimental for all students, though Black, Hispanic, and otherwise marginalized students are most likely to suffer harms (Orfield & Lee, 2005).

In this brief, we examine growing diversity, school boundaries, and segregation in Howard County Public School System (HCPSS), Maryland, a fast-growing, diverse suburban district that is often cited for its economic affluence and excellent school system. We draw from a novel dataset, the Longitudinal School Attendance Boundary System (LSABS), which includes school boundary maps from 1989-90, 1999-00, 2009-10, and 2019-20 and allows us to see changes in the demographic composition of schools over time. HCPSS, like other growing and diversifying suburban districts, has redrawn its school boundaries frequently in recent years. A 2019 rezoning was highly publicized and controversial, wherein the school board sought to spread low-income students more evenly among schools in the district (Goldstein, 2019; Rios, 2019). Specifically, we focus on the sorting of HCPSS's high school student population into schools over the past 30 years, comparing areas within the district that have diversified with nearby places that have retained more homogenous White, Asian, and/or socioeconomically affluent populations.

Howard County Public School System (HCPSS)

Since 1990, HCPSS has opened four new high schools to accommodate the growing student population, which more than doubled in size in the last 30 years. The high school enrollment has changed from 79% White in 1989-90 to 37% White in 2019-20, as populations of Black, Asian, and Hispanic students have increased (see Figure 1).

Figure 1: HCPSS's High School Enrollment by Race/Ethnicity from 1990 to 2020



Source: NCES CCD school enrollment data.

Additionally, the district has seen increasing levels of student poverty since 1990: 8% of high school HCPSS students received free- or reduced-price lunch (FRL) in 2000, and 17% received FRL in 2020.

However, the overall student population has not been evenly spread among high schools—at least not in terms of race/ethnicity or FRL status—and the disparities have grown over time (Table 1).

Table 1: Percentage of Students Identifying as Black or Hispanic and Percentage Receiving FRL by School, 1990-2020

High School	Percent Black or Hispanic				Percent Receiving FRL		
	1989-90	1999-00	2009-10	2019-20	1999-00	2009-10	2019-20
Atholton	10	18	21	35	7	6	9
Centennial	10	5	11	14	1	5	9
Glenelg	4	3	6	9	1	1	4
Hammond	20	21	45	57	7	23	27
Howard	21	23	26	29	7	8	11
Long Reach	—	33	42	59	13	22	33
Marriotts Ridge	—	—	8	12	—	4	4
Mount Hebron	7	11	18	22	7	10	12
Oakland Mills	27	38	56	65	16	28	38
Reservoir	—	—	37	50	—	17	19
River Hill	—	9	10	16	1	5	4
Wilde Lake	29	34	52	60	14	24	35
TOTAL	15	20	27	35	8	12	17

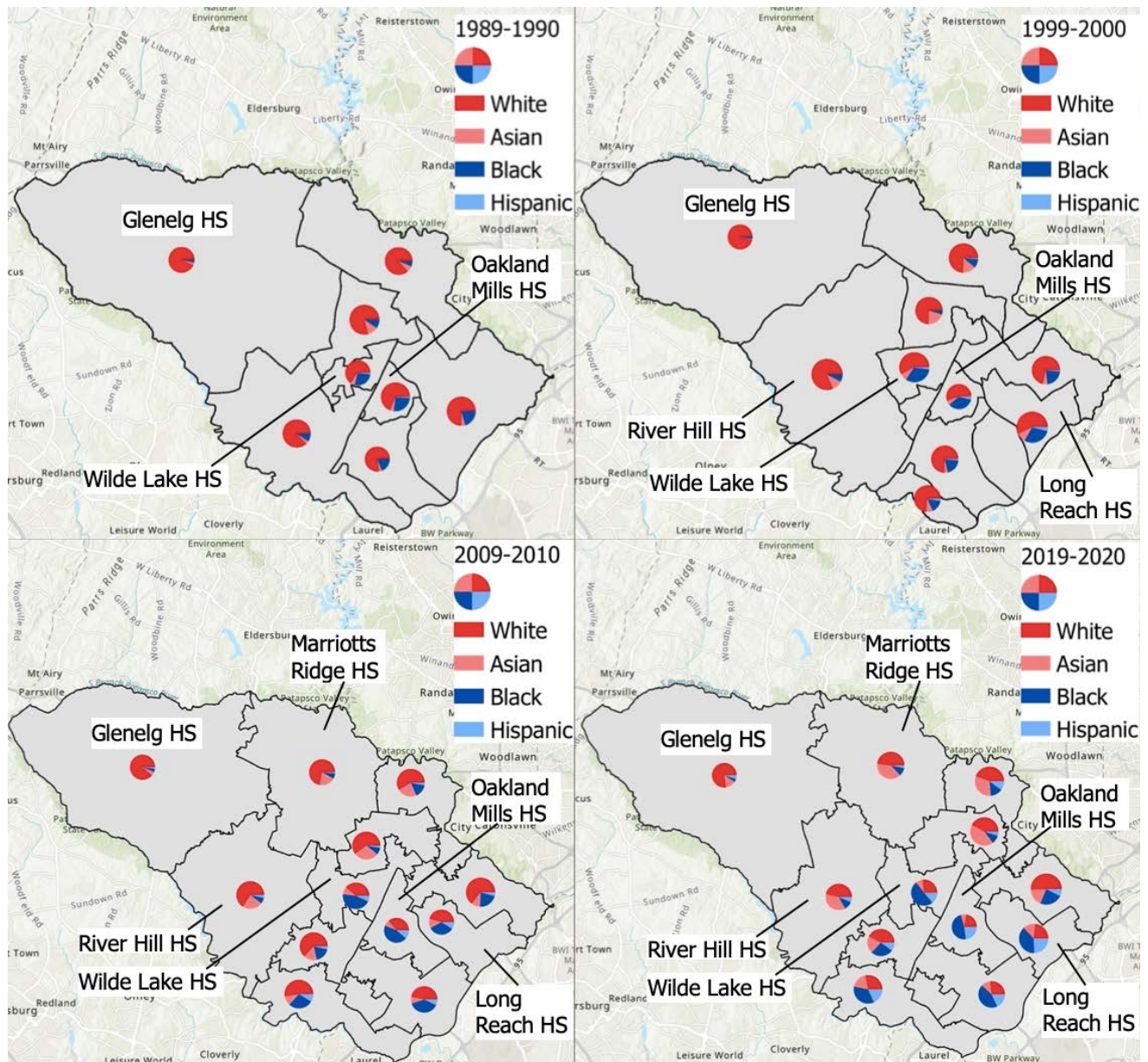
Source: NCES CCD school enrollment data.

Note: FRL data were not available in 1990.

School Boundary Changes and Diversification in a Suburban School District

The clustering of school populations by race/ethnicity reflects, to some degree, the geographic distribution of racial and ethnic groups living in the district. For example, a disproportionately large share of Black and Hispanic students live in the southeastern areas of the district. During the 2019-20 school year, Oakland Mills, Wilde Lake, and Long Reach High Schools—all located in the eastern half of HCPSS—each had student populations that were about two-thirds Black and Hispanic (see Figure 2 and Table 1). In the northwest, White and Asian students comprised most of Glenelg, Marriotts Ridge, and River Hill High Schools' student populations. While all schools have seen growth of Black and Hispanic populations, those schools in the southeast have experienced greater and more rapid diversification (Figure 2).

Figure 2: High School Student Enrollments by Race/Ethnicity, 1990-2020

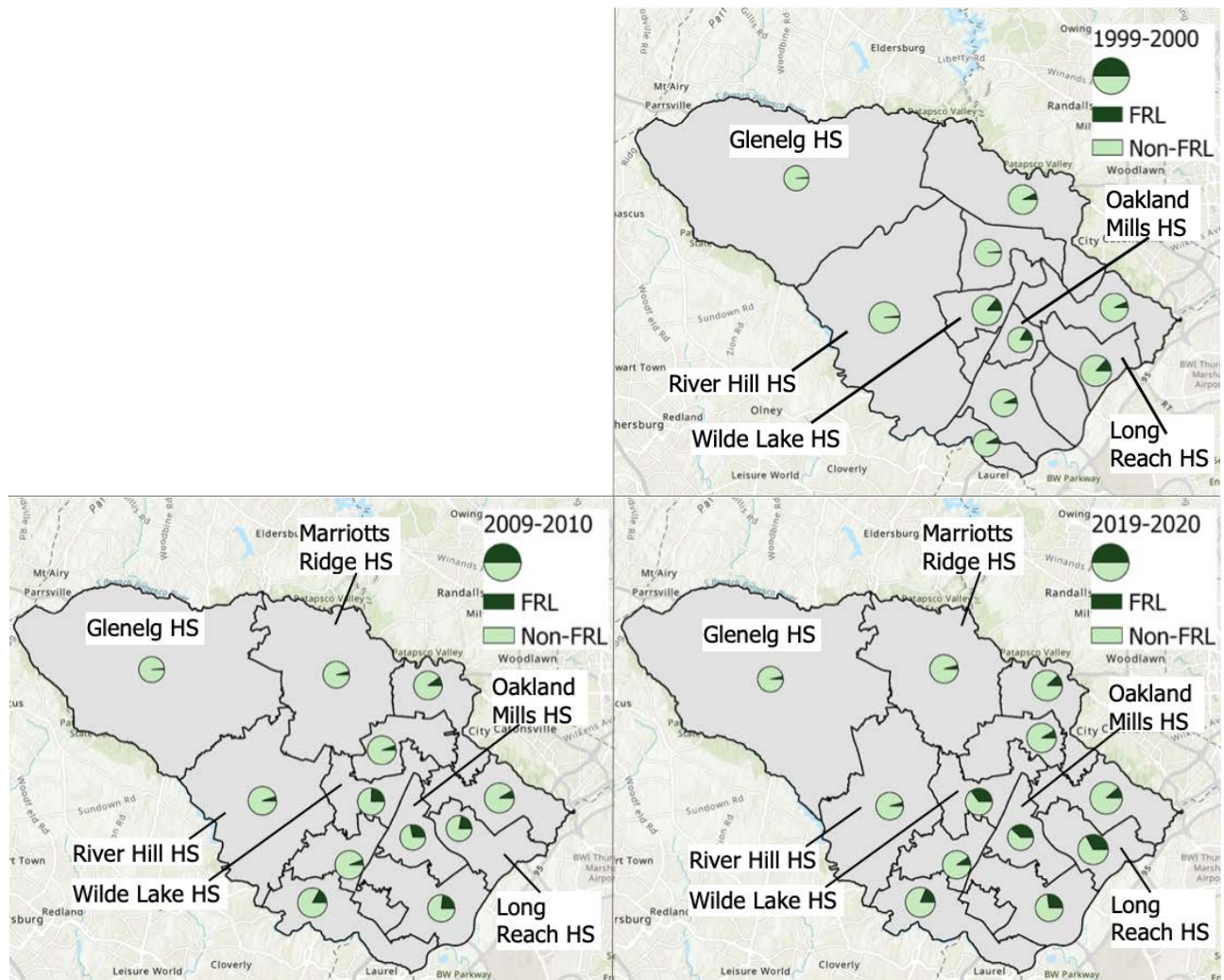


Source: LSABS school boundary shapefiles; NCES CCD school enrollment data.
 Note: The size of each pie corresponds to the size of each school's enrollment.

School Boundary Changes and Diversification in a Suburban School District

Similarly, the schools in the southeast also have higher proportions of students receiving FRL than those in the northwest. As of 2020, Oakland Mills, Wilde Lake, and Long Reach High Schools had the greatest proportions of students receiving FRL (see Figure 3 and Table 1). Most of the schools in the southeastern part of the district have also experienced increasing levels of student poverty over the years. Meanwhile, in the affluent western region, schools like Glenelg, Marriotts Ridge, and River Hill have had consistently low percentages of students receiving FRL.

Figure 3: High School Student Enrollments by FRL Status, 2000-2020



Source: LSABS school boundary shapefiles; NCES CCD school enrollment data.

Notes: The size of each pie corresponds to the size of each school's enrollment. FRL data were not available in 1990.

Boundary Changes Amidst Demographic Change

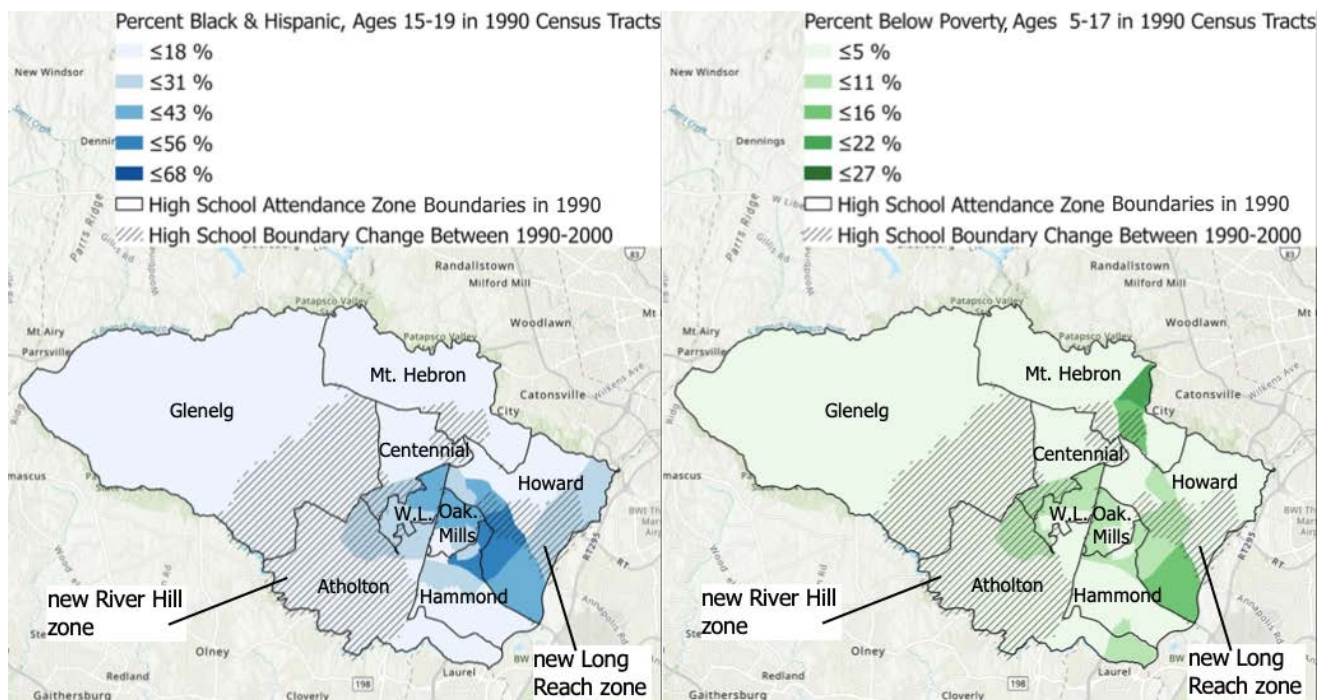
In recent decades, the district has regularly rezoned its school boundaries in response to population growth and the limits of existing school capacity. However, the stark differences in school populations demonstrate how attendance zone boundaries have not always operated to create similarly diverse student bodies across schools.



Boundary changes between 1990 and 2000

Between 1990 and 2000, boundaries were adjusted to create two new high schools: River Hill and Long Reach. The gray hash lines in Figure 4 indicate areas that were rezoned from one school to another, including those areas rezoned to the newly built schools. Placed in a predominantly White and affluent neighborhood, including part of the former Glenelg and Atholton attendance zones, the new River Hill High School enrolled about 91% White and Asian students in 2000. Less than 2% of students received FRL. Conversely, Long Reach—built in part of the former Howard attendance zone—was composed of 68% White and Asian students, 33% Black and Hispanic students, and 13% of students received FRL, making it one of the most diverse schools in HCPSS. While both River Hill and Long Reach were built to accommodate growing populations, the schools served very different demographic groups. As the eastern parts of the district became increasingly racially and socioeconomically diverse, the northwest—and its high schools—remained predominantly White, Asian, and affluent.

Figure 4: High School Boundary Changes Between 1990 and 2000, by School-Aged Residential Population Characteristics in 1990



Source: LSABS school boundary shapefiles; 1990 U.S. Census.

Note: Due to differences in how census data is disaggregated by age, we calculate the racial composition and economic composition of census tract populations for different age ranges. The differences in age ranges mean the percentages of populations that are Black and Hispanic are not directly comparable to the percentages of populations that are living below poverty, though the trends reflected are consistent among children of all ages.



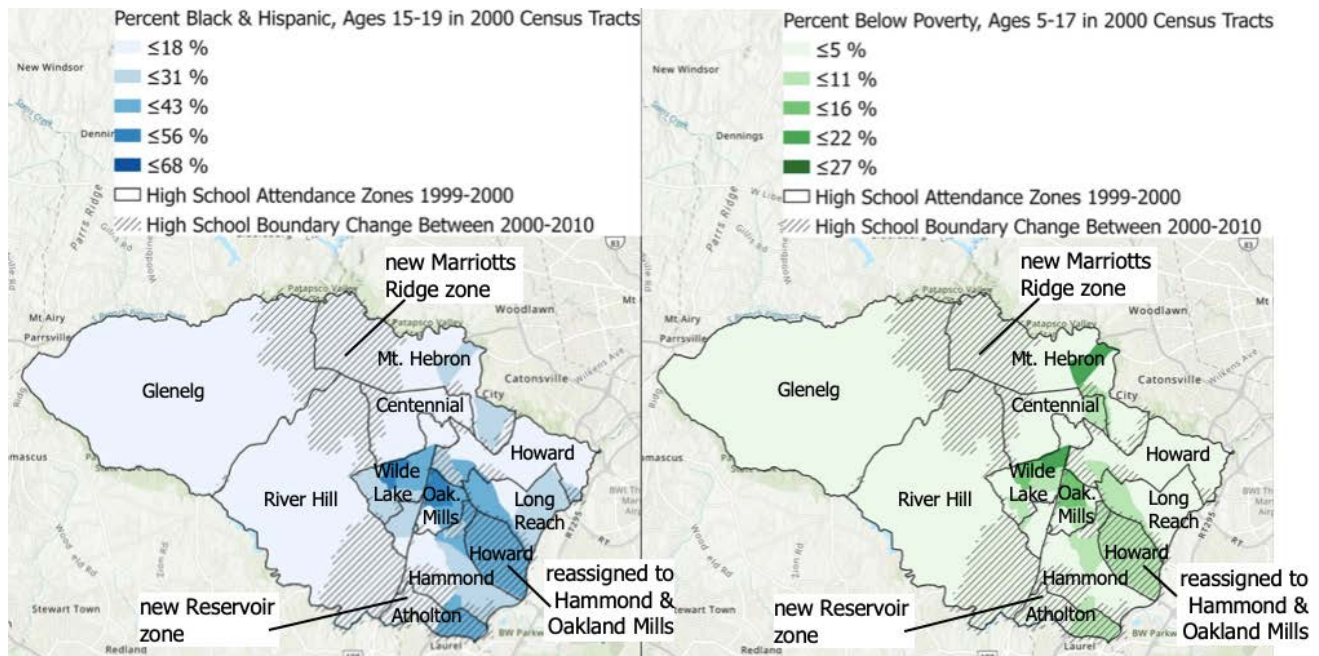
School Boundary Changes and Diversification in a Suburban School District

Boundary changes between 2000 and 2010

In the following decade, boundary changes became more frequent and contentious. The district opened two more high schools (Figure 5). Marriotts Ridge was built in the north, and its new school boundary carved out areas formerly served by Glenelg, River Hill, Mount Hebron, and Centennial High Schools. Given the demographics of the residential population living there, Marriotts Ridge unsurprisingly became another school with a disproportionate number of White, Asian, and non-poor students: 92% of students were White or Asian in 2010 and 4% received FRL. In the southern corner of the district, the new Reservoir High School took on former River Hill, Atholton, and Hammond students. The new school boundary captured a relatively diverse student population: in 2010, 63% of students were White or Asian, 37% Black or Hispanic, and 17% received FRL.

Another boundary change reassigned part of Howard's attendance zone to Hammond and Oakland Mills High Schools. In 2000, the Howard attendance zone included two separate portions with distinct residential populations: the southern portion had higher percentages of Black, Hispanic, and low-income residents than the northern portion (see Figure 5). When the southern portion was rezoned in the 2000s, the change concentrated more minority and low-income students in Hammond and Oakland Mills, while Howard's student population remained more similar to that of the district overall (see Table 1). These examples further demonstrate how district leaders can influence the composition of school populations through the placement of new schools and the (re)drawing of attendance zone boundaries.

Figure 5: High School Boundary Changes Between 2000 and 2010, by School-Aged Residential Population Characteristics in 2000



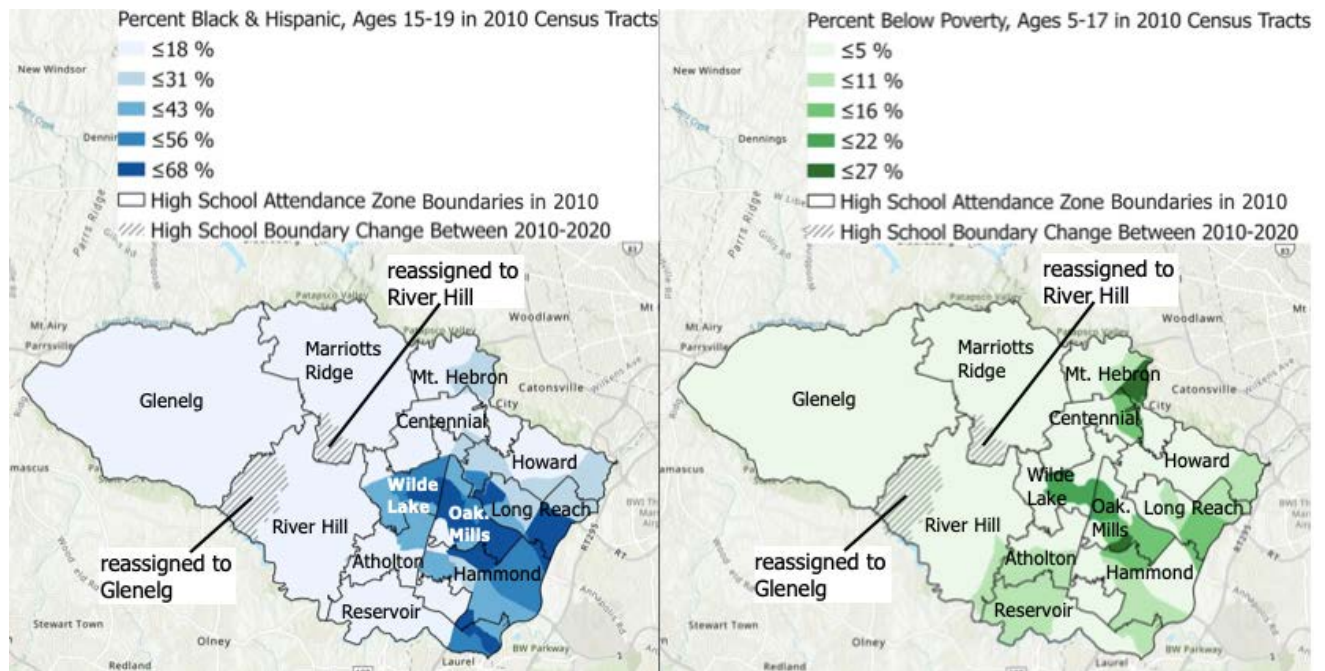
Source: LSABS school boundary shapefiles; 2000 U.S. Census.



Boundary changes between 2010 and 2020

Between 2010 and 2020, high school boundary changes were rather minimal and were not associated with substantial changes in the racial or socioeconomic composition of school populations (Figure 6). Parts of the River Hill and Marriotts Ridge boundaries were redrawn, but they reassigned students to schools with similarly privileged, homogenous populations.

Figure 6: High School Boundary Changes Between 2010 and 2020, by School-Aged Residential Population Characteristics in 2010



Source: LSABS school boundary shapefiles; 2010 U.S. Census.

Since 1990, every HCPSS high school has experienced an increasing percentage of Black/Hispanic students and students receiving FRL. However, the residential demographic change has been concentrated in the southeastern part of the district, and consequently, schools there have seen more dramatic changes in student populations than those in the northwest. Boundary changes, including those necessary for the construction of new schools, did not always create significantly more diverse schools. In fact, Black, Hispanic, and low income students have become increasingly concentrated in Hammond, Oakland Mills, and Wilde Lake High Schools, while neighboring schools like River Hill, Centennial, and Howard have maintained predominantly White, Asian, and affluent student populations (see Table 1).

Policy Implications

The example of HCPSS illustrates the role school attendance zone boundaries play in shaping student populations. One way district leadership can address segregated student populations is by considering the impact of potential boundary changes on the racial and economic compositions of each school. Leaders should aim to (re)draw boundaries in ways that reflect the district's overall population, especially as the population changes. Education plays an

integral role in shaping students' future economic and health outcomes, so it is important that boundary changes promote impartial learning opportunities and support upward mobility for all.

Additionally, the analyses presented here demonstrate the usefulness of longitudinal boundary data for helping researchers and district leaders understand how school boundaries shape patterns of educational (in)equity. In particular, the data and analysis provided by LSABS can help leaders develop equitable rezoning plans. But school boundary data, especially historical data, are not always widely available. Efforts to collect and analyze such data should be better supported, both by federal and state departments of education willing to lead systematic data collection efforts and by school district leaders able to share boundary information.

Acknowledgements

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