
2.1 Data Analysis

Assignment Stability

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2.1 Data Analysis

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What does assignment stability mean in this analysis?

Assignment stability refers to the number of times a student, school, or geographic area is impacted by changes to student assignment over time.

In this analysis, we analyze assignment stability in terms of past boundary studies and the number of changes in assignment across school levels.

Section Overview

This section includes one set of analyses, *Assignment Stability In-Depth*. This subsection opens with a set of key insights.

Assignment Stability by the Numbers

- MCPS has changed school boundaries 131 times since 1984 as part of 92 boundary studies.
- Approximately two in three of these changes were related to new school construction and additions.
- Since 2010, there have been 16 boundary changes implemented (or an average of less than two a year).



Assignment Stability at a Glance

What does assignment stability mean in this analysis?

All students in MCPS have a school (or group of schools, in the case of consortia) where they are assigned based on their home address. These assignments may change over time as MCPS adjusts to shifts in student enrollment and programmatic needs and works to create equity in the school system. Since MCPS began to track annual boundary changes in 1984, the Board of Education has made changes to school boundaries a total of 131 times. Approximately two in three of these changes were related to new school construction and additions.

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 areas

As part of their regular work, MCPS and the BOE study and consider changes to student assignment at 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.

Capital and Non-Capital Changes

School boundaries may change as a part of either capital or non-capital strategies to address the needs of the school system. Capital strategies may include new school construction, addition, or closures, which then necessitate a change in student assignment to adjust to changes in facilities. Non-capital strategies may include changing boundaries to balance utilization at existing schools or introducing a split articulation to balance the number of elementary school students feeding into a middle school (or middle school students feeding into a high school).

For more on capital and non-capital ratios, see [page 58](#).



However, to maximize assignment stability in the ways mandated by Policy FAA, it is important to have a comprehensive and districtwide understanding of past boundary changes, including which parts of the district have been impacted by these changes. The analyses in this chapter seek to contribute to a more comprehensive understanding of the stability of student assignment in MCPS, both over time and across the district.

Assignment Stability in Context

This analysis represents a snapshot in time of assignment stability. The cohorts analyzed, for instance, represent a case study of the many cohorts that have moved through the school system in recent years. For a discussion of the various capital and non-capital strategies MCPS has used over time to adapt to changing challenges and needs, and the policies that guide this decision-making, see the **MCPS Strategies: Adapting To Change on page 58**.

For a wider context, **Benchmarking Data Analysis on page 315** includes an overview of student assignment policies and history in six other comparable districts around the country.

Assignment Stability Methodology

This section examines assignment stability in MCPS using historic boundary change data, current and past MCPS boundary maps, and historic and current enrollment data. MCPS has documented boundary studies and changes since 1984, and these analyses use this documentation, cross-referenced with historic and current school boundary maps. Throughout these analyses we primarily use school year 2019-20 data when examining recent boundary changes, at times using 2010-2011 to 2019-2020 as a reference point for recent historical changes. Analysis 5 uses historical student data from school year 2018-19.

Key Data Sources

- Historical Boundary Change Data, via MCPS Office of Shared Accountability
- School boundary maps (MCPS Division of Capital Planning)

Analyses Conducted

A. Assignment Stability In-Depth

1. Analysis 1: Historical Boundary Changes
2. Analysis 2: Boundary Changes Since 2010
3. Analysis 3: Context for Recent Boundary Changes
4. Analysis 4: The Geography of Boundary Changes Since 2010

2.1 Data Analysis

Assignment

Stability In-Depth

Now that we have introduced the concept of assignment stability, we examine the effects of boundary changes on students in greater detail. First, we examine the boundary changes implemented in MCPS since 1984, before taking a closer look at those implemented since 2010. Then, we look at the geography of boundary changes since 2010.

Questions:

- How frequent are boundary changes in MCPS?
- What conditions spur boundary changes in MCPS?
- How likely is my student to live in an area that will be redistricted?
- Are boundary changes more likely to occur as a result of new school construction or for other reasons?
- What kinds of boundary changes are most likely to reassign a large number of students?

Analyses:

1. Historical Boundary Changes
2. Boundary Changes Since 2010
3. Context for Recent Boundary Changes
4. The Geography of Boundary Changes Since 2010

Insights

1. In these analyses, we examine historic boundary changes from 1984 to present. Boundary changes have become less frequent since 2010.

Boundary changes were frequent between 1984 and 2006, numbering 107 in total or about four and a half per year. Since 2010 the number of boundary changes has slowed, with sixteen boundary changes implemented (or under two a year).

2. 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.

On a per school basis, the Clarksburg cluster has seen the largest number of boundary changes, across school levels, since 1984, most in recent years. The Seneca Valley, Damascus, Gaithersburg, and Sherwood Clusters all have had eight boundary changes since 1994.

3. During the last nine years, middle school students were most likely to be redistricted, followed by elementary and then high school students.

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. We find:

- 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. 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.

Analysis 1. Historical Boundary Changes

Since 1984 MCPS has made 131 boundary changes across the district, across school levels. These boundary changes were implemented as part of 92 boundary studies, each of which often includes multiple boundary changes. About two-thirds of these changes were carried out because of additional capacity being added, whether as school additions or new schools.

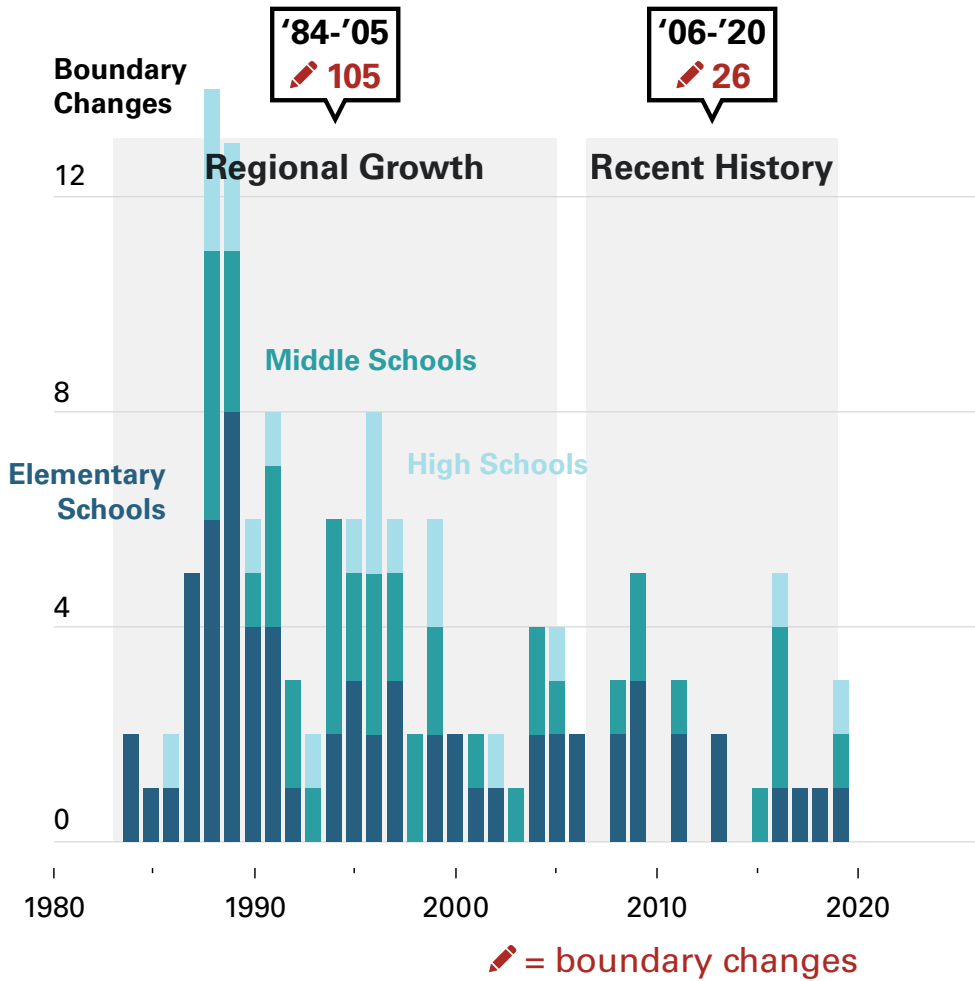


Figure 2.1.1 Historical Boundary Changes Since 1984

Boundary changes were frequent between 1984 and 2006, numbering 107 in total or about four and a half per year. Since 2010 the number of boundary changes has slowed, with sixteen boundary changes implemented. In the following analysis we examine these in detail.

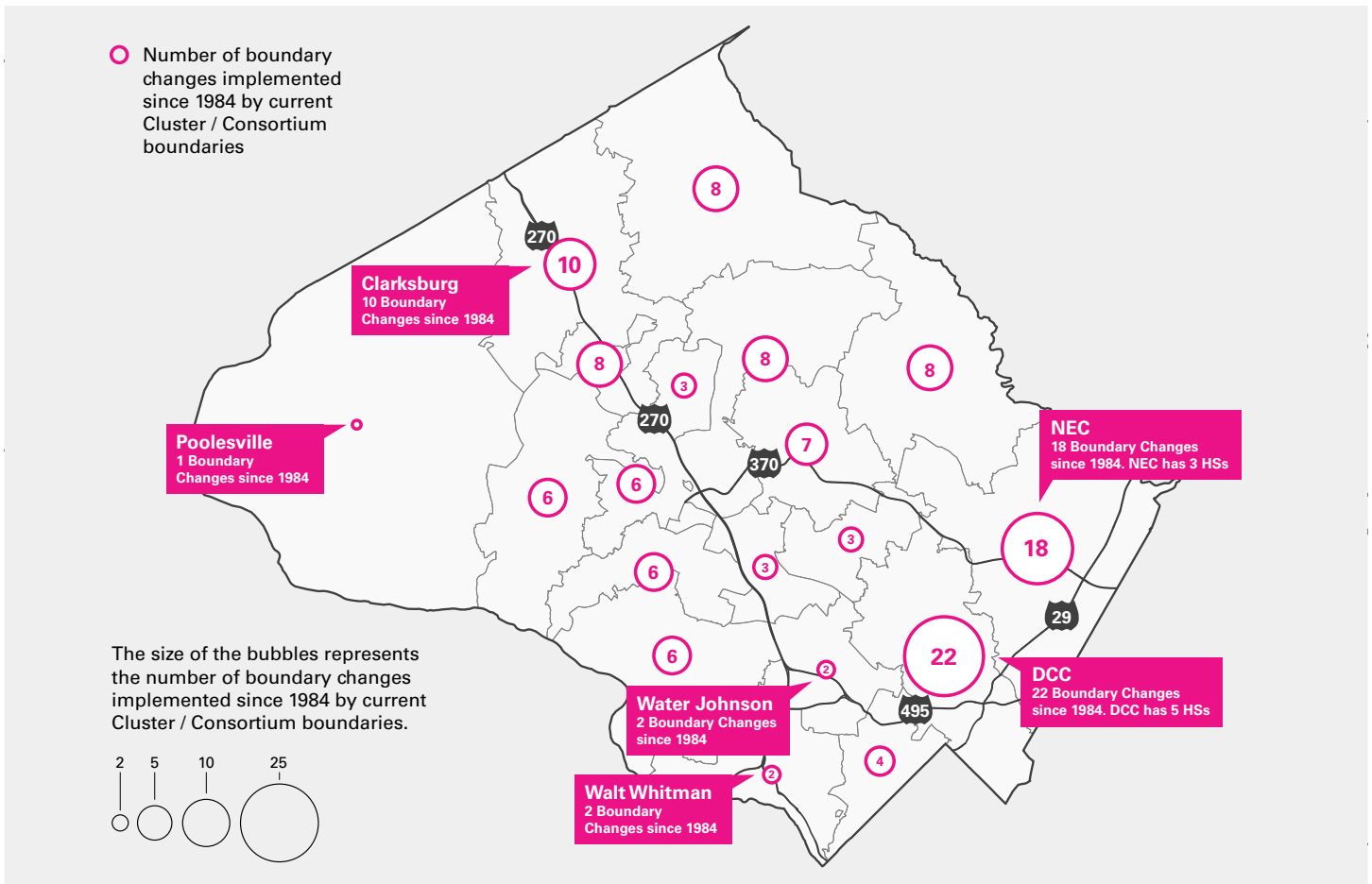


Figure 2.1.2 Historical Boundary Changes Since 1984 by Current Clusters

Boundary changes since 1984 have been spread relatively evenly throughout the district, with the exception of certain clusters. The three clusters / consortia with the greatest and fewest number of boundary changes since 1984 are indicated on **Figure 2.1.2** with a label.

The Downtown and Northeast Consortia (DCC, NEC) have seen the largest number of boundary changes since 1984. However, the DCC and NEC are densely populated and have a large number of schools: the DCC has five high schools; the NEC as three high schools. On a per high schools basis, the Clarksburg Cluster has seen the largest number of boundary changes since 1984, most in recent years. The Seneca Valley, Damascus, Gaithersburg, and Sherwood Clusters all have had eight boundary changes since 1994. As such, clusters in the northern region of the district have seen the greatest number of boundary changes.¹

The clusters with the fewest number of boundary changes since 1984 are the Poolesville (1), Walter Johnson (2), and Walt Whitman Clusters (2).

¹ For more context about population density and development in Montgomery County, see **page 63 in the Introduction**.

Analysis 2. Boundary Changes Since 2010

Figure 2.1.3 below indicates the number of current MCPS students living in areas redistricted between 2010 and 2019, separated by school level. As in the rest of this document, this analysis does not include the recent Clarksburg, Northwest, and Seneca Valley High School Boundary Study.

Here, we examine the number of current students living in redistricted areas as a proxy for the number of students that might have been assigned to a new school at the time of the redistricting. The exact number of students that changed schools as a result of the boundary changes varies from case to case due to differences in grandfathering policies used in different boundary studies and program types by school (such as magnet programs).

School Year Implemented	Because of New School	Reassigned Students			Share of Total Students		
		ES	MS	HS	ES	MS	HS
2012-13	No	0	215	0	0.0%	0.6%	0.0%
	Yes	640	0	0	0.9%	0.0%	0.0%
2013-14	No	91	0	0	0.1%	0.0%	0.0%
2014-15	No	250	162	0	0.4%	0.4%	0.0%
2016-17	Yes	0	908	0	0.0%	2.5%	0.0%
2017-18	No	14	91	19	0.0%	0.2%	0.0%
	Yes	0	927	0	0.0%	2.5%	0.0%
2018-19	No	81	0	0	0.1%	0.0%	0.0%
	Yes	546	0	0	0.8%	0.0%	0.0%
2019-20	No	113	54	75	0.2%	0.1%	0.2%
	Yes	1413	0	0	2.0%	0.0%	0.0%
Total, 2010-19		3148	2357	94	4.5%	6.4%	0.2%

Figure 2.1.3 School Year 2019-20 Students Living in Areas Redistricted Between 2010 and 2019

In sum, we find that, as of the start of school year 2019-20, there were a total of 5,599 school year 2019-20 students living in areas redistricted between school years 2010-11 and 2019-20. The majority of students affected by these boundary changes were elementary school students, though middle schoolers were more likely on average to be assigned to a new school.

The total number of school year 2019-20 middle school students living in areas redistricted between 2010 and 2019 is 2,357, or 6.4% of middle school students overall. Dividing that figure by nine for the nine-year study period, we find the share of middle schoolers likely to be rezoned in any given year to be about 0.7% overall. For elementary schoolers, that number is 0.5%. These numbers provide a rough sense of assignment stability on a year-to-year basis.

A better lens than the year-to-year likelihood of a student being redistricted is to examine the number of students reassigned by boundary change and what type of boundary change. Between 2010 and 2019, the average boundary change affected about 390 elementary school students, based on the number of school year 2019-20 students living in redistricted areas. These numbers vary widely; Section 2 that follows explores these numbers in greater detail.

Finally, boundary changes resulting from the construction of a new school result on average in a large number of students reassigned. In school year 2019-20, 1,413 elementary school students lived in newly redistricted areas, representing about 2% of the elementary school student body county-wide. New middle schools opened in school years 2016-17 and 2017-18 – Hallie Wells MS and Silver Creek MS – each boundary change redistricted areas home to about 2.5% of school year 2019-20 middle school students. By contrast, the largest share of 2019-20 middle or elementary school students living in areas redistricted not as a result of a new school being built was 0.6%, in school year 2012-13.

Analysis 3. Context for Recent Boundary Changes

Since 2010, MCPS has added more than 23,000 students. According to U.S. Census figures and MCPS data the majority of new students are living along the I-495 and I-270 corridors and throughout the Downcounty Consortium. Census figures indicate slight declines in the number of students living in lower-density clusters outside of this core, though MCPS figures indicate growth in student enrollment across nearly all clusters.

As a result of these shifting enrollment patterns, MCPS has made sixteen boundary changes since 2010 and opened six new schools. Further capital action is underway in MCPS, with the construction of two new schools currently underway: an elementary school in the Clarksburg Cluster and a high school in the Walter Johnson Cluster.

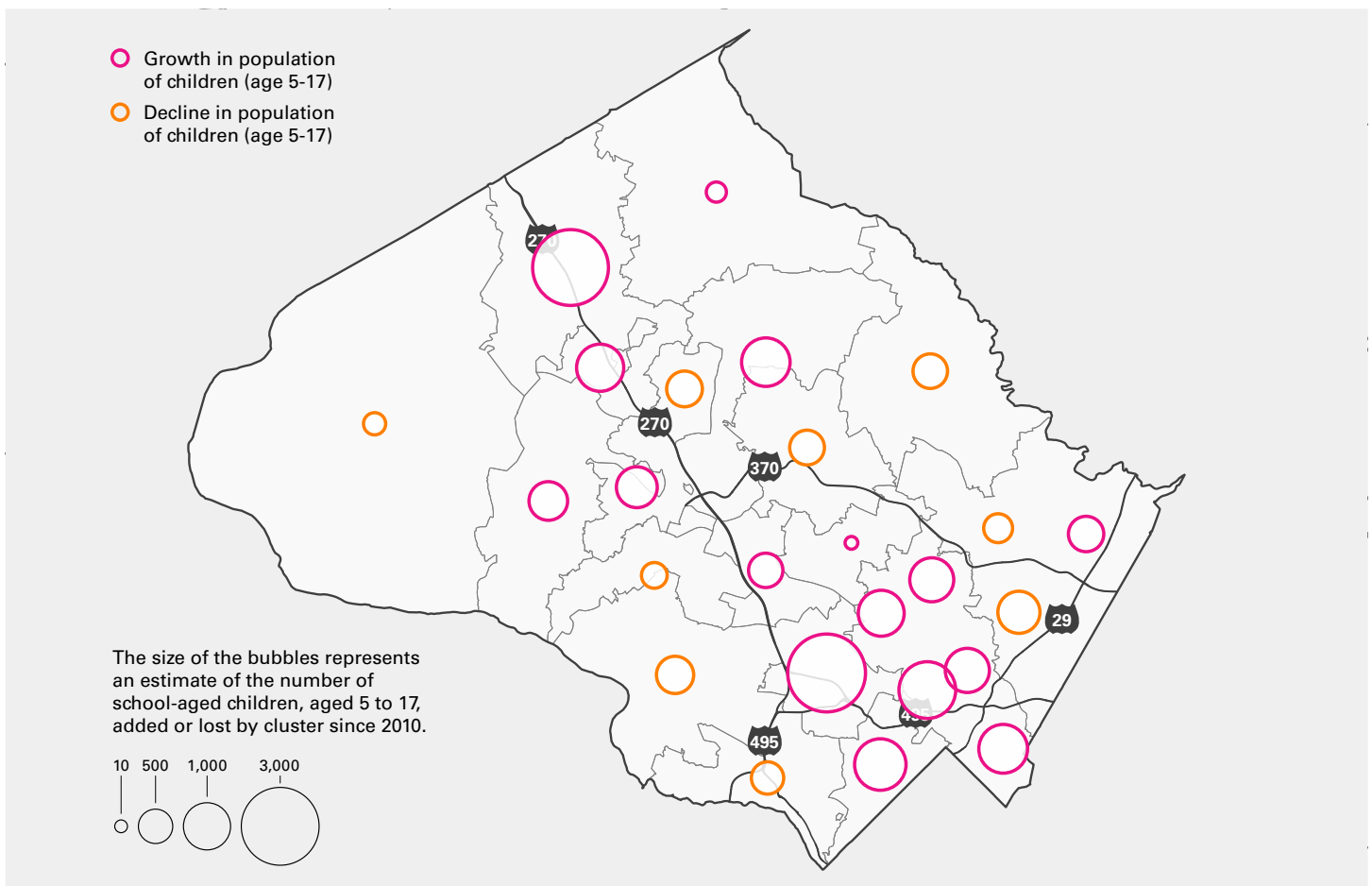


Figure 2.1.4 Increase in School-aged Children by High School Attendance Area, 2010-2018

In the following analysis we examine the boundary changes made between the 2010 and 2019 school years, motivated by this growth in student enrollment.

Analysis 4. The Geography of Boundary Changes Since 2010

Redistricting has focused on areas of high enrollment growth since 2010. This analysis examines the number of students currently living in recently redistricted areas as a proxy for the impacts of school redistricting on communities.

The map below indicates the number of school year 2019-20 students in grades K-5 living in elementary school areas redistricted since 2010. Boundary changes resulting from the addition of a new school are indicated in magenta. Other boundary changes, including those made as a result of school additions, are indicated in orange. The bubbles on the map indicate the number of K-5 students currently living in redistricted areas. We make this simplifying assumption to provide a sense of magnitude, in the absence of mapped student data for all school years between 2010 and 2019.

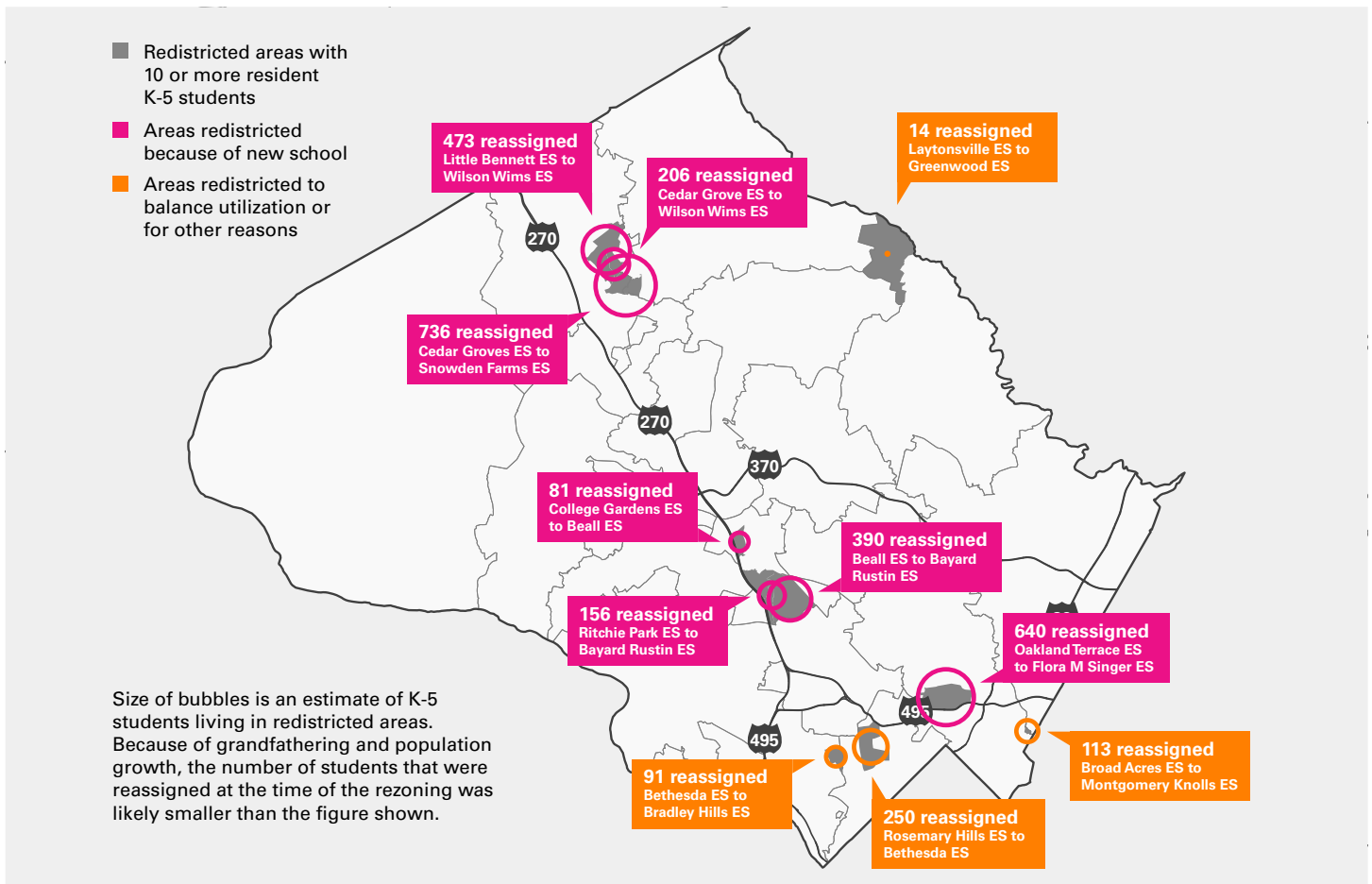


Figure 2.1.5 Current K-5 Students Living in Elementary School Attendance Areas Redistricted Since 2010

The map above illustrates that most school year 2019-20 students living in areas redistricted between 2019 and 2020 are living in areas redistricted as a result of the construction of a new school. The boundary changes occurring as a result of the construction of Wilson Wims Elementary School and Snowden Farm

Elementary School reassigned the largest number of students. Altogether, 1,413 current K-5 students live in areas redistricted as a result of the introduction of these new schools.

The boundary change that reassigned the largest number of students not motivated by a new school construction was between Rosemary Hills ES and Bethesda ES. About 250 current K-5 students currently reside in this redistricted area. Even in cases where boundary changes are not a result of a new school, they typically still relate to construction in the form of an addition to expand capacity.

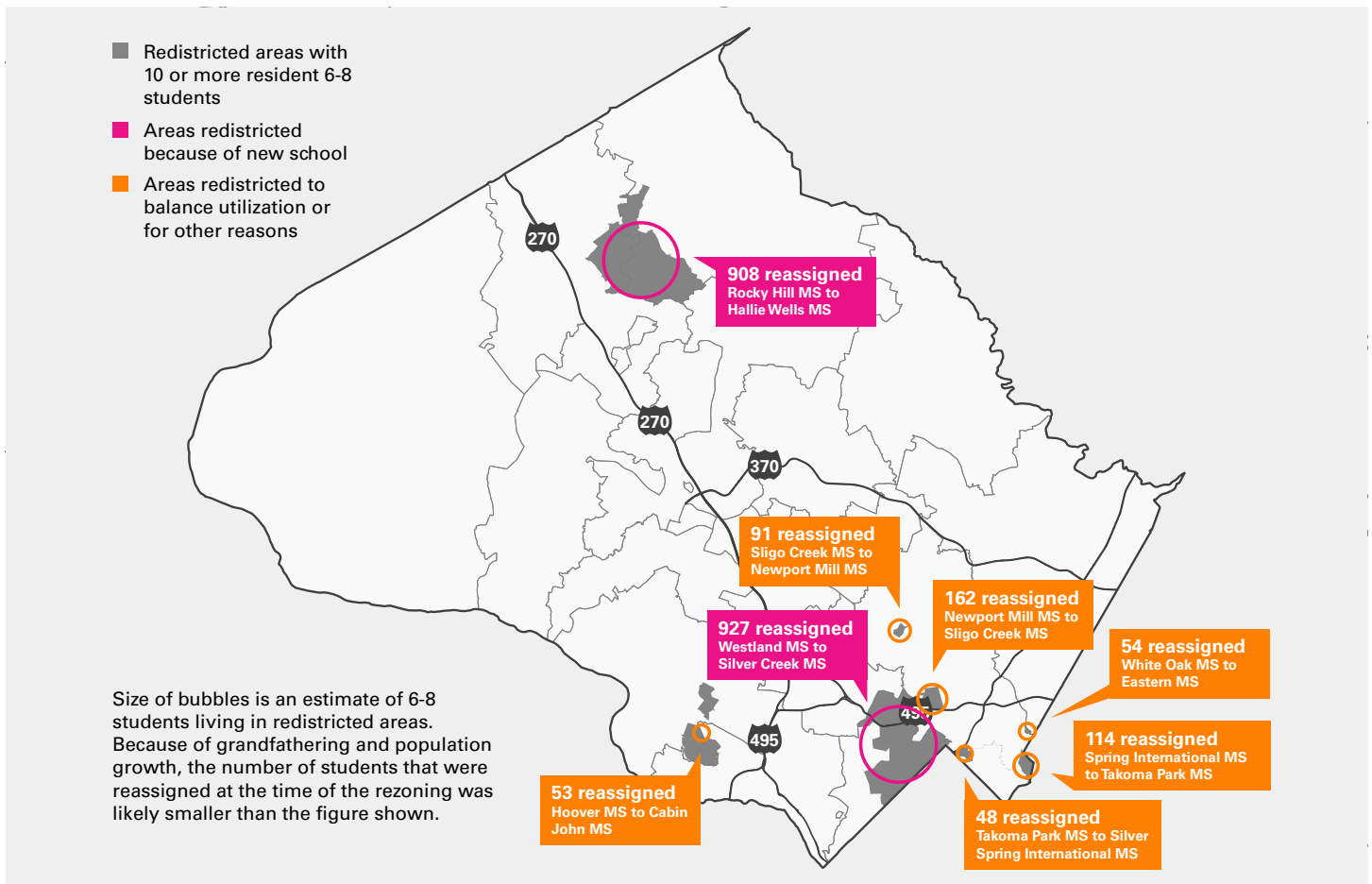


Figure 2.1.6 Current K-5 Students Living in Elementary School Attendance Areas Redistricted Since 2010

We find similar patterns at the middle school level as at the elementary school level. Boundary changes resulting from the construction of new schools are responsible for the large majority of student reassignments between 2010 and 2019. In total, 1,835 school year 2019-20 middle school students live in areas redistricted as a result of the construction of two new middle schools between 2010 and 2019, Silver Creek MS and Hallie Wells MS.

In comparison to elementary schools, where only four boundary changes not directly resulting from the construction of a new school were implemented, six such boundary changes occurred at the middle school level. These minor boundary changes are usually made in response to school expansions or are the indirect result of a school opening nearby or at a different school level. For example, the boundary change between Newport Mill MS and Sligo Creek MS occurred as a result of the boundary change between Oakland Terrace ES and Flora M. Singer ES, a new school. As such, the boundary change made at the MS level was likely made to preserve feeder patterns across school levels.