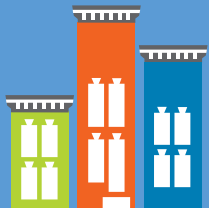




# ANALYSIS OF NEIGHBORHOOD CHANGE AT SELECT SCHOOLS IN BALTIMORE CITY (2012 - 2017)

November 2019



**BNIA**

**BALTIMORE NEIGHBORHOOD  
INDICATORS ALLIANCE**

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## Analysis of Neighborhood Change at Select Schools in Baltimore City (2012-2017)<sup>1</sup>

By: Baltimore Neighborhood Indicators Alliance

November 2019

Schools within a neighborhood represent an important institution in the lives of youth and families. All residents of a neighborhood interact with the public school system either directly, as guardians of children attending a school, or indirectly as community members impacted by the school in the surrounding area. The interconnectedness of the quality of schools and quality of life means that the relationship between schools and neighborhoods has far-reaching consequences over time including population growth and increases in housing value.

Community access to schools has been growing in Baltimore City through two major initiatives. The *21<sup>st</sup> Century School Buildings Plan*<sup>2</sup> began implementation in 2013 after the Maryland General Assembly passed the Baltimore City Public Schools Construction and Revitalization Act to fund \$1.1 billion in school building renovation and replacement projects over the next decade. Given the aging building stock of many Baltimore City schools, many neighborhoods have not been able to use their schools as community assets or as places that facilitate healthy school environments. To better support school construction in the surrounding neighborhood, Baltimore's Department of Planning embarked on the INSPIRE<sup>3</sup> planning process for the quarter-mile radius around each school to develop plans that identify specific, implementable public improvements for transportation, housing, and open space.

The purpose of this research brief is to provide an illustrative analysis of how the context around a select number of schools can help shed understanding on educational outcomes within the schools for practitioners and government officials such as the Mayor's Office of Youth and Family Success.

### Analysis of School Zones

The schools selected for this analysis were elementary or elementary/middle schools that have an INSPIRE plan<sup>4</sup> adopted by the City's Planning Commission as of July 2019. Maree G. Farring (MGF) has also been included as a school of interest for the Center for Adolescent Health at Johns Hopkins. Of the nine school zones, five of them were opened after reconstruction for the 2017-2018 school year. Two were reopened in 2018 and one in 2019. MGF is not a 21<sup>st</sup> century school.

According to the Maryland Report Card, chronic absenteeism among the schools during SY2017-2018 varied from the lowest percentage at MGF (32.9%), which was very close to the citywide average (32.7%), to the highest percentage at Frederick (65.3%). The school in this selection with the greatest enrollment was Wildwood and the school with the lowest enrollment was Dorothy I. Height (DIH).

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<sup>1</sup> Funding for this project was sponsored by Center for Adolescent Health through a grant from the CDC (U48DP005045)

<sup>2</sup> For the most up-to-date information on the 21<sup>st</sup> Century School Buildings Plan, visit <http://baltimore21stcenturyschools.org/>

<sup>3</sup> Investing in Neighborhoods and Schools to Promote Improvement, Revitalization, and Excellence (INSPIRE) <http://baltimore21stcenturyschools.org/community/community-economic-development>

<sup>4</sup> The INSPIRE plans focus on the neighborhoods immediately surrounding each of the schools that are part of the 21st Century Initiative. List a list of all plans online <https://planning.baltimorecity.gov/inspire/inspire-plans>

School	Neighborhood(s)	Number of Census Tracts within School Catchment area	Year of Reconstruction	Chronic Absenteeism (SY17-18)	Enrollment (SY17-18)
Arlington Elementary/Middle	Arlington	1	2018	37.9%	570
Bay-Brook Elementary/Middle	Curtis Bay	2	2018	39.2%	394
Calvin M. Rodwell Elementary/Middle	Howard Park	2	2019	35.0%	705
Cherry Hill Elementary/Middle	Cherry Hill	3	2017	46.3%	666
Dorothy I. Height Elementary	Penn North/ Reservoir Hill	4	2017	34.7%	341
Frederick Elementary	Carrolton Ridge	3	2017	65.3%	384
Pimlico Elementary/Middle	Pimlico	2	2017	36.4%	441
Wildwood Elementary/Middle	Edmondson Village	2	2017	38.2%	791
Maree G. Farring Elementary/Middle	Brooklyn	1	1977	32.9%	743
Baltimore City				32.7%	32,246

### What is the Neighborhood Context Around these Schools?

The main question this research brief aims to explore is how the areas around the selected schools have changed during a time when neighborhood planning was occurring and construction was underway or completed. Many of the catchment areas include census tracts that are very different in terms of housing markets and socioeconomic status. So are the areas around the schools doing any better than the City overall? Has there been a positive change in the quality of life surrounding the schools that could help ensure better school outcomes? And if changes in the surrounding areas have not improved, how could there be any expectation for change within the schools themselves?

Indicator	Baltimore City		
	2012	2017	Change
Racial Diversity Index	54.5	55.9	1.4
Percentage of Population Black/African-American (Non-Hispanic)	63.8	62.3	-1.5%
Percentage of Residential Properties that are Vacant and Abandoned	8.0	8.2	0.2%
Percentage of Residential Properties that Do Not Receive Mail	7.5	8.3	0.8%
Number of Homes Sold	5,166	9,267	79.4%
Unemployment Rate	13.9	10.2	-3.7
Percentage of Households with Children in Poverty	33.4	32.9	-0.5%
Percentage of Population 25+ with Less than a High School Diploma/GED	20.4	15.8	-4.6%
Percentage of Population 25+ with a High School Diploma/GED or Some College	53.5	53.8	0.3%
Percent of Commuters Traveling More than 45 Minutes to Work	20.1	20.8	0.7%
Walk Score (2017)		56.2	

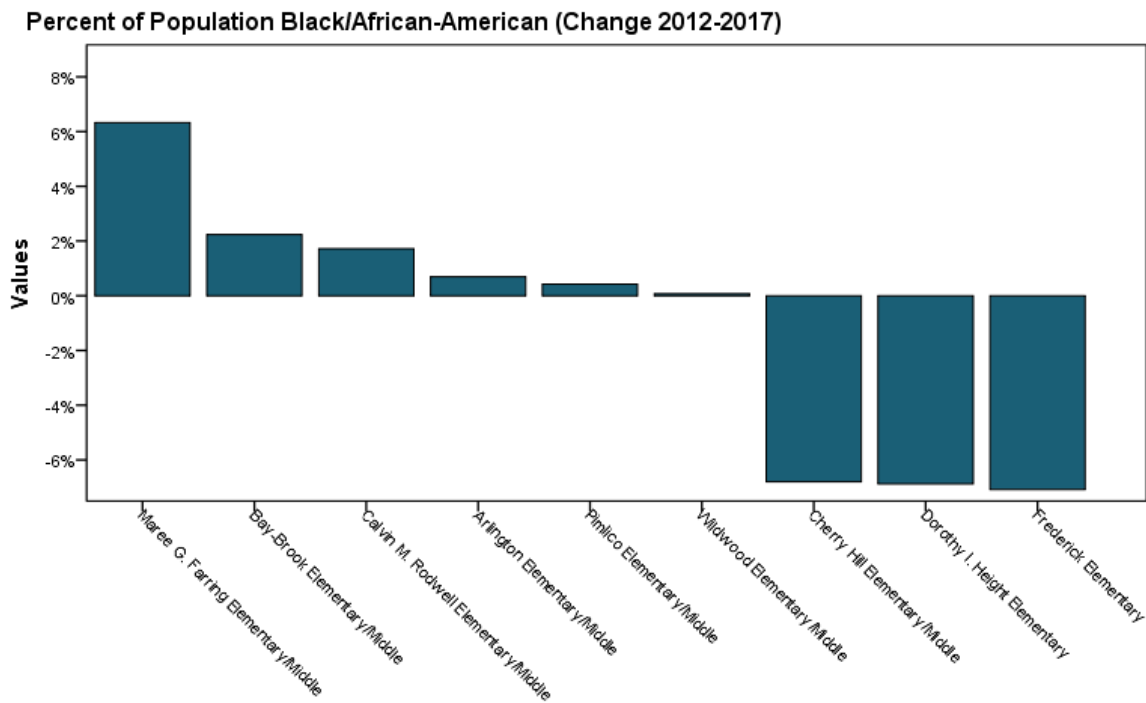
(See Appendix A for list of data definitions and sources. See Appendix B for data by school zone)

## Methods

To address the questions raised in this brief, neighborhood changes around the selected schools are measured by a core set of community based indicators: changes in racial composition and diversity, changes in total population and housing occupancy, changes in child poverty and unemployment rates and changes in measures of neighborhood accessibility such as commute time to work and walkability. Each of these measures were calculated for census tracts that were more than 50% inside the catchment area for the school. The discussion below shows how each of these measures have changed between 2012 and 2017 for each school.

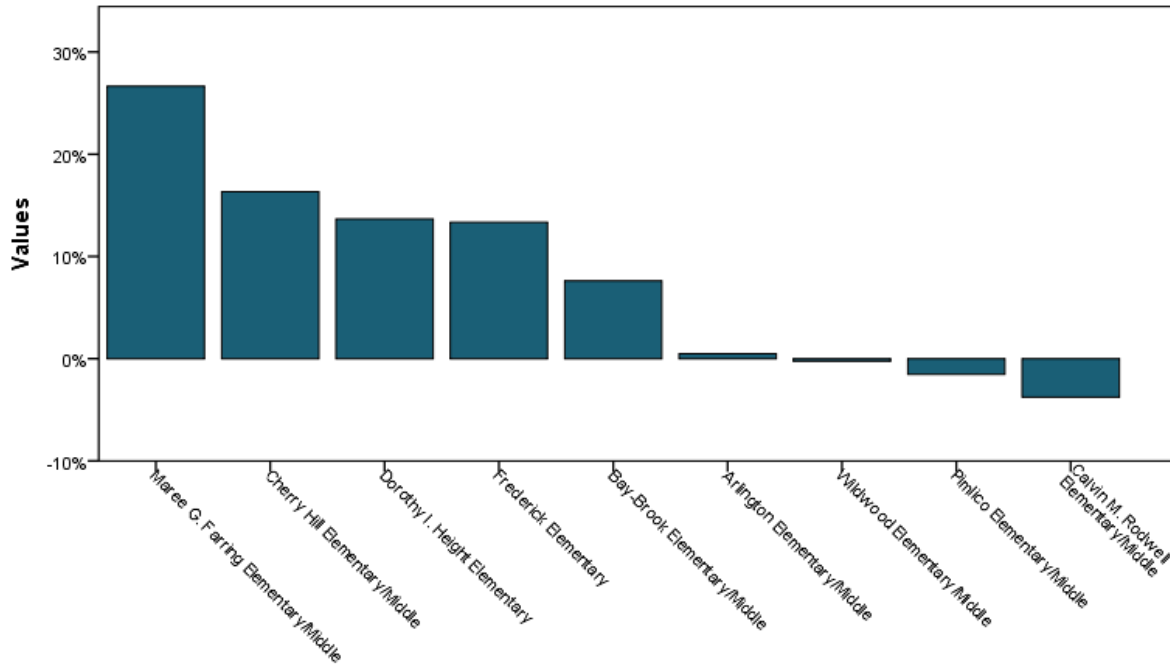
### Change in Diversity between 2012 and 2017

Between 2012 and 2017, the percent of Baltimore's overall population identified as Black/African American (non-Hispanic) declined by -1.5% (from 63.8% to 62.3%). For the areas around the schools, the experience varied greatly. Within the catchment area of MGF, the percent Black/African American increased by more than 6%, whereas the areas around Cherry Hill, DIH and Frederick decreased by more than -6%.



Conversely, the racial diversity index in Baltimore increased slightly from 54.4 to 55.9 between 2012 and 2017. For the schools with significant decreases in Black/African-American population (Cherry Hill, DIH, Frederick), these fluctuations actually resulted in increased racial diversity overall (see figure below).

Racial Diversity Index (Change 2012-2017)



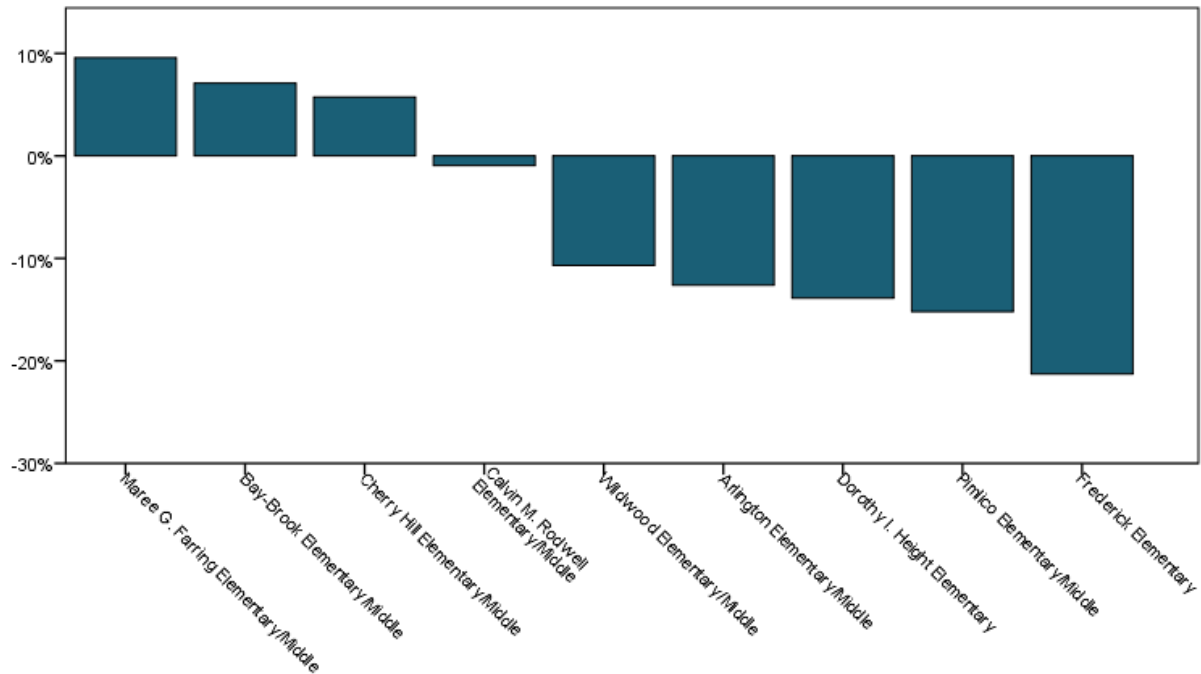
### Population Change and Housing Occupancy

Enrollment in Baltimore City schools is highly dependent on population stability or growth within the catchment area for the school, particularly for elementary schools where more than 65% of households<sup>5</sup> choose to send their children to the zoned neighborhood school.

Between 2000 and 2010, the City of Baltimore lost 4.6% of its overall population. During that same timeframe, however, some school areas grew in population: MGF, Bay-Brook and Cherry Hill. However, many of the selected schools experienced more than triple that rate of decline during the same time period (Wildwood, Arlington, DIH, Pimlico and Frederick).

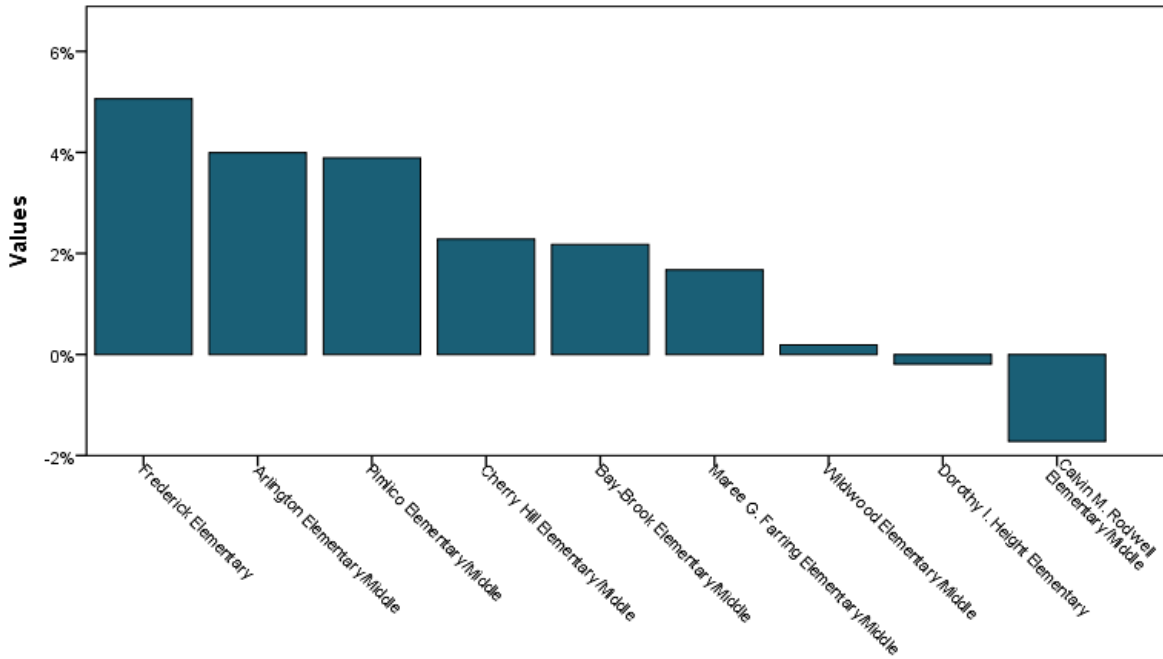
<sup>5</sup> City Schools have 105 zoned elementary schools. Of all the zone schools in SY 2017-18, 32% of students attending them are out of zone. Baltimore City Public School System Comprehensive Educational Facilities Master Plan (SY 2017-2018) <https://www.baltimorecityschools.org/sites/default/files/2019-01/CEFMP-2018.pdf>

Percentage Total Population Change (2000-2010)

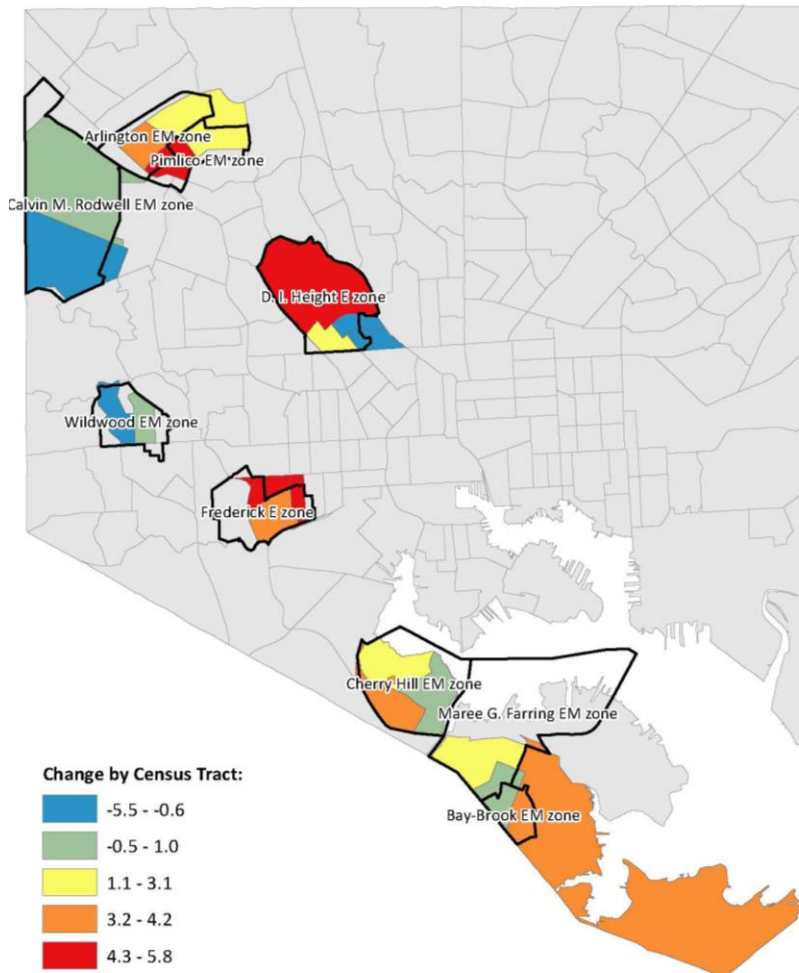


While reliable population data at the census tract level since 2010 is not available through the US Census Bureau, one indicator that serves as a proxy for population change is the rate of vacant and abandoned buildings that exist within a neighborhoods. Between 2012 and 2017, the percent of vacant properties in Baltimore increased slightly from 8.0% to 8.2%. In the same time period, vacant properties increased by 4% or more around Frederick, Arlington and Pimlico, potentially signaling continued population loss in these catchment areas. Vacancy decreased by nearly -2.0% around Calvin M. Rodwell (CMR).

**Percent of Residential Properties that are Vacant and Abandoned (Change 2012-2017)**



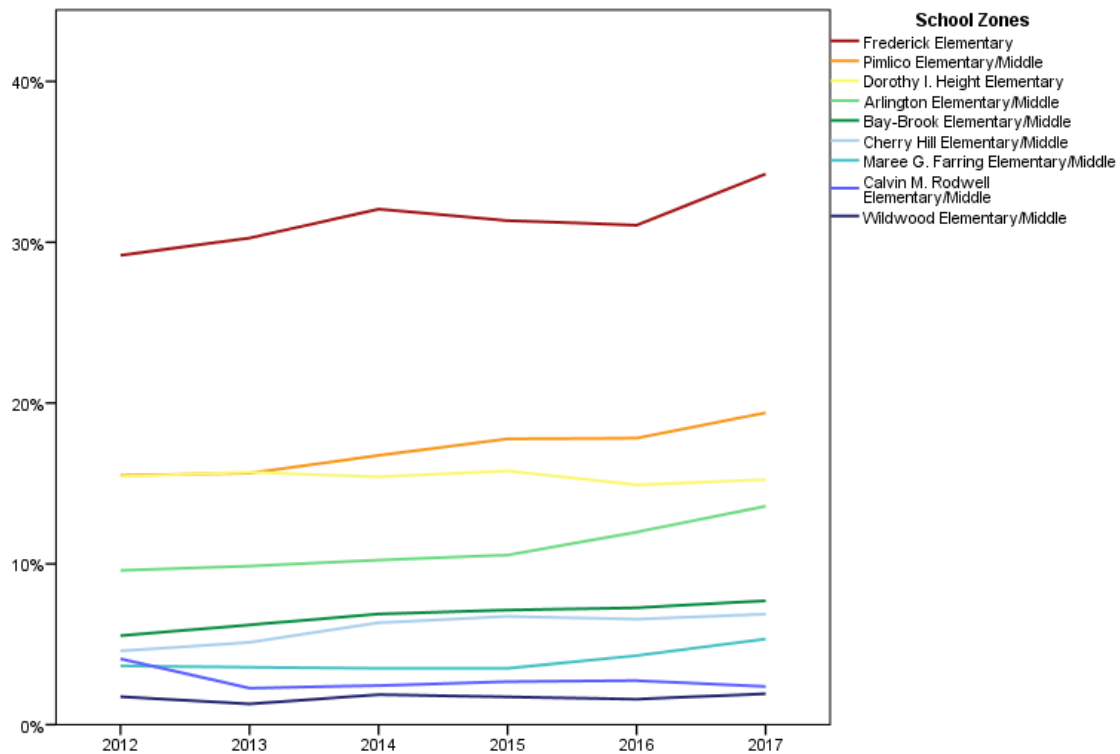
**Change in Percentage of Residential Properties that are Vacant and Abandoned, 2012 to 2017**



An important concern for schools revolves around the differences that occur in different parts of the catchment area that affect students. The starkest example is around DIH. The eastern part of the zone is Reservoir Hill which experienced a decline in housing vacancy rates between 2012 and 2017 while the Parkview/ Woodbrook neighborhood to the north experienced an increase of more than 4.3% (see adjacent map). Students from both parts of the catchment zone have variable differences based on their neighborhood conditions. These are important issues for teachers and administrators should be aware of prior to students even entering the building for the school day.

Change in vacancy rates varied over the time period as well as the overall nature of vacancy across catchment areas. For example, not only did vacancy around Frederick increase the most between 2012 and 2017, the catchment area had 4 times higher vacancy overall (34.2%) than the citywide average in 2017 (see figure below). Overall vacancy rates at DIH decreased slightly, despite the variation by census tracts noted previously, but still remains nearly double (15.2%) the citywide average. Vacancy rates for MGF, CMR and Wildwood have consistently been below the citywide average.

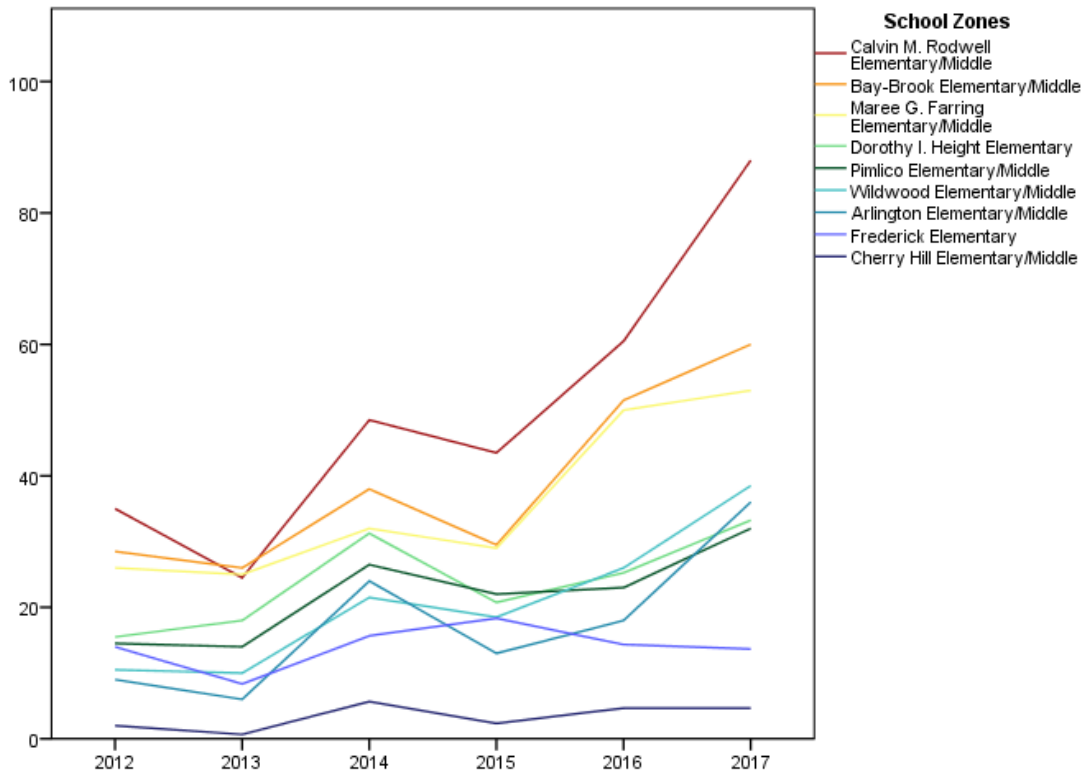
**Percent of Vacant and Abandoned Residential Properties by School Zone Areas (2012- 2017)**



One of the key ways to reoccupy residential properties in the catchment areas is to ensure homes can be bought and sold on the market. Home sales around CMR more than doubled between 2012 and 2017 and were also stronger around Bay-Brook and MGF (see figure below). However, home sales remained extremely low around Cherry Hill and declined as well in the area around Frederick.



## Number of Homes Sold by School Zone Areas (2012-2017)

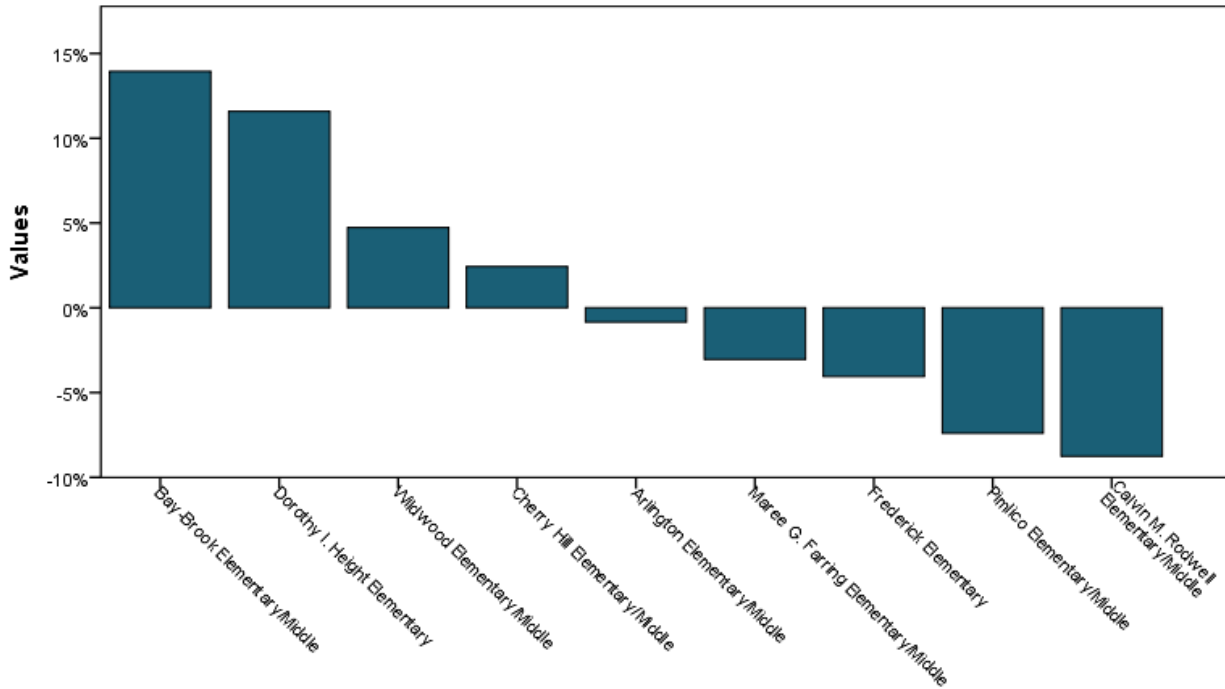


## Change in Socioeconomic Status

The percentage of households with children living in poverty has remained persistent in Baltimore City (32.9% in 2017). Only two of the selected schools for this report had catchment areas with lower percentages of households with children living in poverty: Calvin M. Rodwell (21.3%) and Wildwood (25.6%). In 2017, the school zones with the highest percentages were Arlington (51.8%) and Bay-Brook (48.8%).

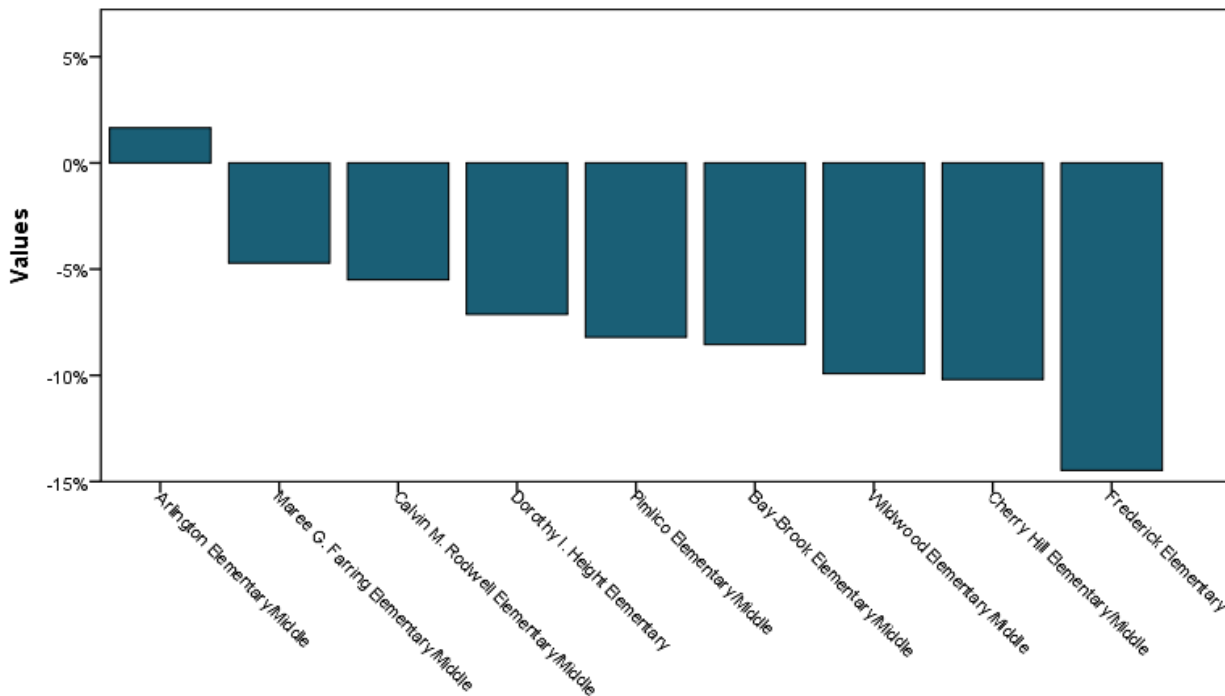
Between 2012 and 2017, Bay-Brook also experienced the greatest increase in children living in poverty along with DIH and Wildwood. Pimlico and CMR, on the other hand, experienced the greatest decreases in the percent of households with children living in poverty.

**Percent of Children Living in Poverty (Change 2012-2017)**



On a positive note, the time period referenced for this research brief occurred at the end of what is generally referred to as the Great Recession in the US; nearly all of the areas around the schools zones experienced significant reductions in the unemployment rate.

**Unemployment Rate (Change 2012-2017)**



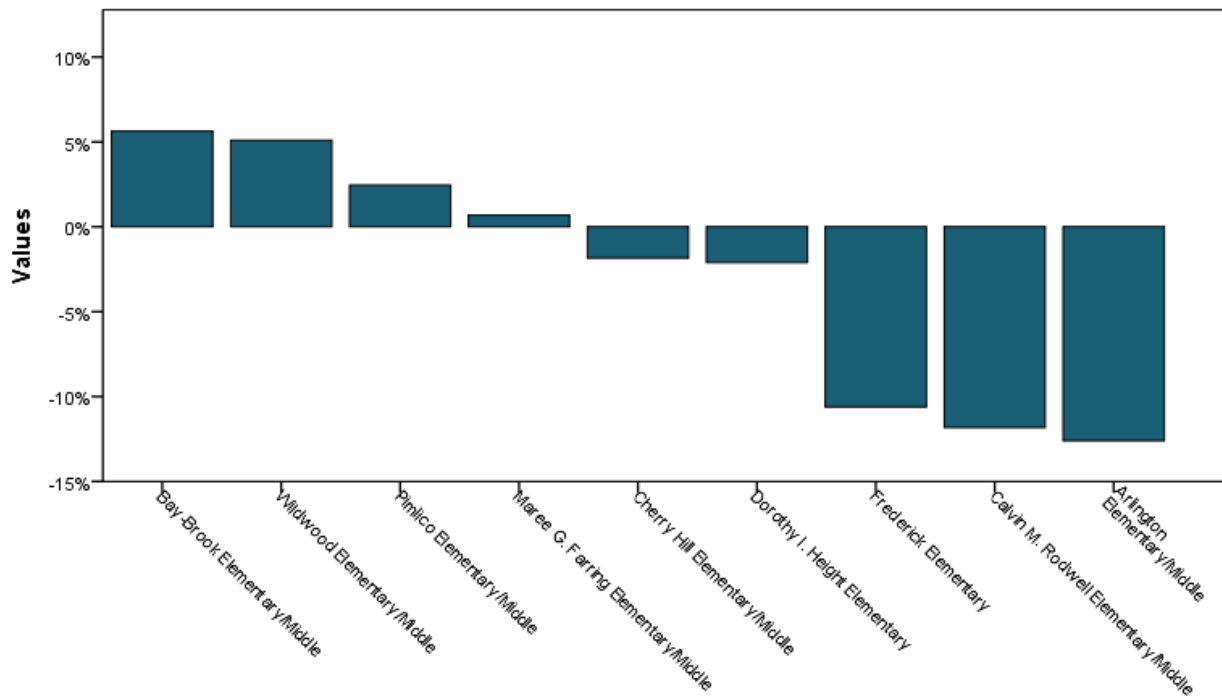
## Change in Measures of Accessibility

Urban living often means having access to alternative means of transportation that reduce vehicle miles traveled by car. Baltimore’s mid-size transportation system includes regional rail (MARC), Metro, light rail, the Charm City Circulator, and a system of local and commuter buses. While transportation is robust for movement north and south, problems with accessibility still persist in movement east and west. In addition, recent research has shown that “walkability” is necessary for cities to thrive and that where transit use is high, so too is walking and/or biking.

The percent of commuters in a neighborhood traveling more than 45 minutes to get to work has the strongest association with population decline for a neighborhood. The impact on urban neighborhoods of long commute times is two-fold. Chances are high for an employed resident to move closer to a job more than 45 minutes away, as the negative correlation to population growth implies; conversely, chances are high for a worker to not keep a job and become unemployed. Many of the same neighborhoods with long commute times have some of the city’s highest unemployment rates as well. Neither outcome contributes to the quality of life in the neighborhood itself.

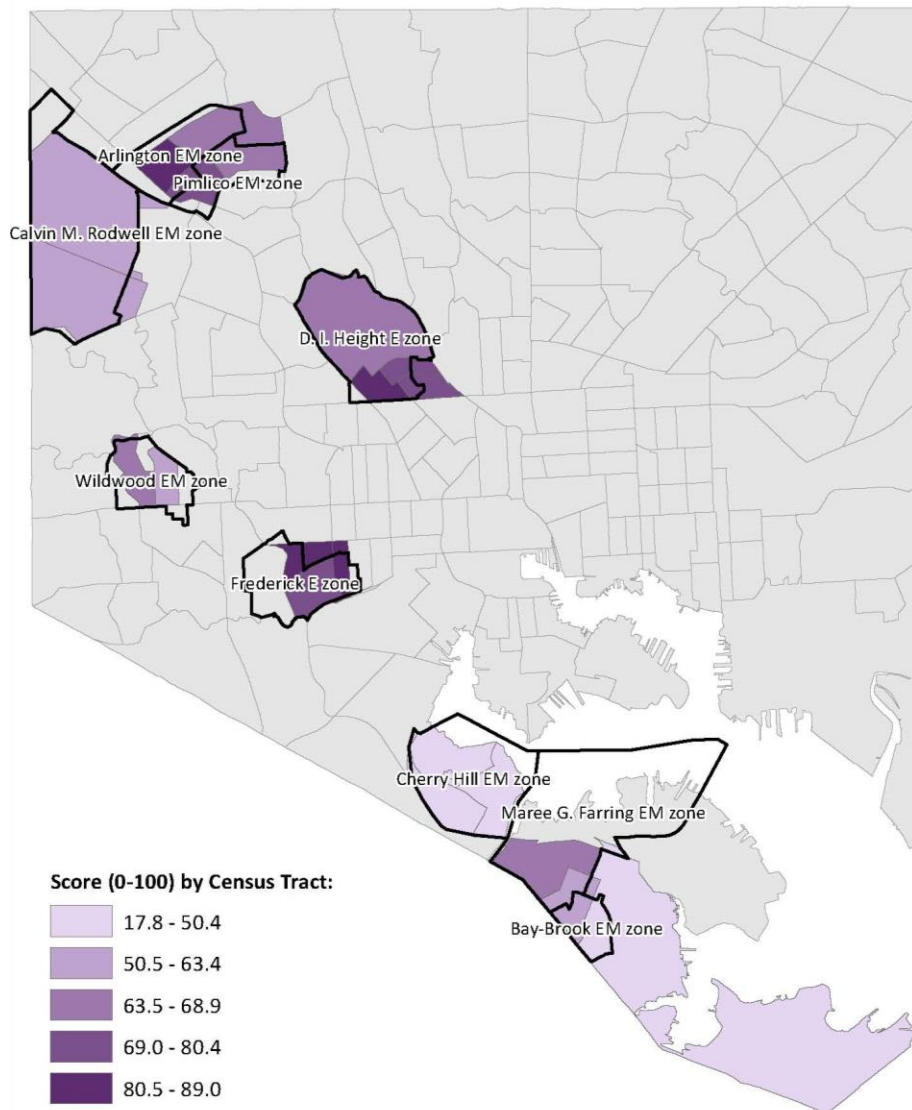
In 2017, 20.8% of households in Baltimore traveled more than 45 minutes to get to work. The areas around Bay-Brook and Wildwood experienced the greatest increases in households commuting more than 45 minutes and had the highest percentages among the selected schools (27.6% and 30.8% respectively). The lowest percent of households commuting more than 45 minutes were around MGF and Arlington. The implications for schools is that parental engagement may be impacted by guardians with long commute times.

**Percent of Households Commuting More than 45 Minutes (Change 2012-2017)**



In 2017, Baltimore City had a WalkScore of 56.2, which places the city as a whole in the “somewhat walkable” category, meaning that some amenities are within walking distance. The highest WalkScores overall occur around Frederick and Arlington. The lowest WalkScores occur around Bay-Brook and Cherry Hill.

Walk Score, 2017



## Key Observations

This report uses community-based indicators of diversity, occupancy, accessibility and socioeconomic status to show that the neighborhood conditions around each of the selected schools vary greatly across each other and in some cases vary within the catchment area of the school itself. To better support educational outcomes for students in these schools, these kinds of data can be more routinely provided to educators so that closer collaboration may occur with the neighborhood improvement and planning processes overall. The results of this analysis bring forward the following key observations:

- 1) Schools with increasing racial diversity in catchment areas will inevitably result in growing diversity among enrolled students. Focusing on cultural competency for all students will help ensure better inclusion within the school. In some cases however, diversity within the school occurs when different neighborhoods are brought together by a catchment area, which is the case for Dorothy I. Heights. For these kinds of situations, understanding the varying neighborhood context beyond the school property will be important for educators to better understand.
- 2) Schools with high vacancy and stunted/variable housing markets seem to be connected with the least favorable educational measures. For example, Frederick Elementary reported nearly double the percentage of chronic absenteeism and also had the highest (and increasing) rates of housing vacancy. Focusing on the relationship between vacancy in the surrounding neighborhoods and projected enrollment in the schools is important to maintain the school sustainably into the future.
- 3) Schools in areas of high commute times may experience challenges with family or parental engagement as care givers for students are spending significant time away from the neighborhood. Providing alternative means for connecting with school administrators and educators may be necessary to increase participation.

## Appendix A: Data Definitions and Sources

All indicators used in this report come from the Baltimore *Vital Signs*<sup>6</sup> report.

Racial Diversity Index	Definition	Source
Percentage of Population Black/African-American (Non-Hispanic)	The total number of persons that identify themselves as being racially Black or African American (and ethnically non-Hispanic) out of the total number of persons living in an area. Black or African American refers to a person having origins in any of the Black racial groups of Africa. It includes people who indicated their race as Black.	U.S. Bureau of the Census, American Community Survey
Percentage of Residential Properties that are Vacant and Abandoned	The percentage of residential properties that have been classified as being vacant and abandoned by the Baltimore City Department of Housing out of all properties. Properties are classified as being vacant and abandoned if: the property is not habitable and appears boarded up or open to the elements; the property was designated as being vacant prior to the current year and still remains vacant; and the property is a multi-family structure where all units are considered to be vacant.	Baltimore City Department of Housing
Percentage of Residential Properties that Do Not Receive Mail	The percentage of residential addresses for which the United States Postal Service has identified as being unoccupied (no mail collection) for a period of at least 90 days or longer. These properties may be habitable, but are not currently being occupied. It is important to note that a single residential property can contain more than one address.	U.S. Postal Service, U.S. Department of Housing and Urban Development
Number of Homes Sold	The total number of residential properties sold in a calendar year.	First American Real Estate Solutions
Unemployment Rate	The percent of persons between the ages of 16 and 64 that are in the labor force (and are looking for work) but are not currently working.	American Community Survey
Percentage of Households with Children in Poverty	This indicator measures the percentage of persons under the age of 18 living in households where the total income fell below the poverty threshold out of all children in households in an area. Federal and state governments use such estimates to allocate funds to local communities. Local communities use these estimates to identify the number of individuals or families eligible for various programs.	American Community Survey
Percentage of Population 25+ with Less than a High School Diploma/GED	The percentage of persons that have not completed, graduated, or received a high school diploma or GED. This is a standard indicator used to measure the portion of the population with less than a basic level of skills needed for the workplace. Persons under the age of 25 are not included in this analysis since many of these persons are still attending various levels of schooling.	American Community Survey

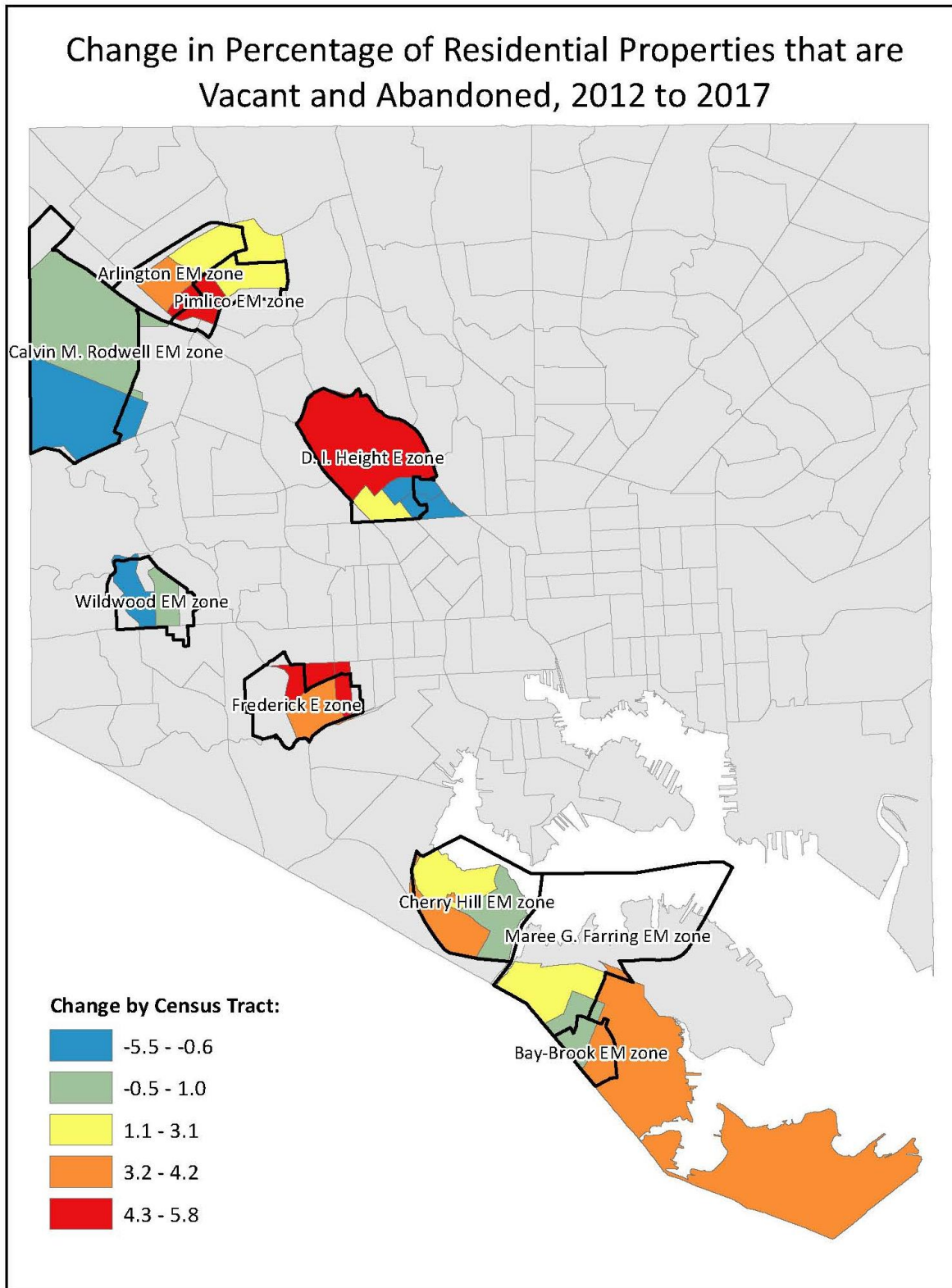
<sup>6</sup> The Baltimore *Vital Signs* is an annual compendium of community-based indicators for all communities. For more information, visit the Baltimore Neighborhood Indicators Alliance [www.bnijafi.org](http://www.bnijafi.org)

Racial Diversity Index	Definition	Source
Percentage of Population 25+ with a High School Diploma/GED or Some College	The percentage of persons that have completed, graduated, or received a high school diploma or GED and also have taken some college courses or completed their Associate's degree. This is a standard indicator used to measure the portion of the population with a basic level of skills needed for the workplace. Persons under the age of 25 are not included in this analysis since many of these persons are still attending various levels of schooling.	American Community Survey
Percent of Commuters Traveling More than 45 Minutes to Work	The percentage of commuters that spend more than 45 minutes travelling to work out of all commuters aged 16 and above.	American Community Survey
Walk Score	The Walk Score® is calculated by mapping out the distance to amenities in nine different categories (grocery stores, restaurants, shopping, coffee shops, banks, parks, schools, book stores/libraries, and entertainment) and are weighted according to importance. The distance to a location, counts, and weights determine a base score of an address, which is then normalized to a score from 0 to 100. More information on Walk Score can be found at <a href="http://www.walkscore.com/">http://www.walkscore.com/</a> .	Walk Score

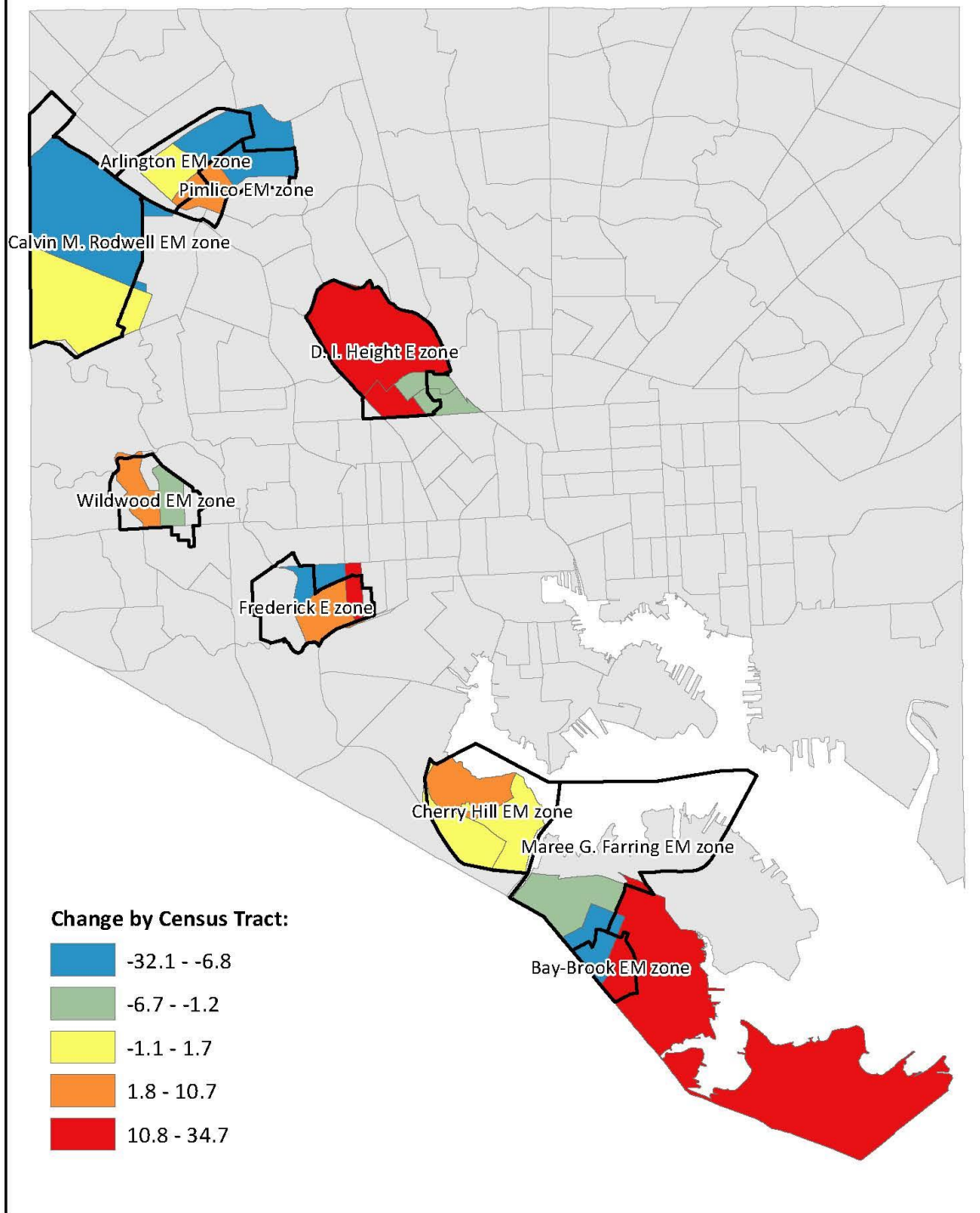
Appendix B: Indicators by School Zone (2012-2017)	School Zones									
	Arlington Elementary/Middle	Bay-Brook Elementary/Middle	Calvin M. Rodwell Elementary/Middle	Cherry Hill Elementary/Middle	Dorothy I. Height Elementary	Frederick Elementary	Maree G. Farring Elementary/Middle	Pimlico Elementary/Middle	Wildwood Elementary/Middle	Total
Racial Diversity Index (2008-2012)	14.7	65.4	15.8	16.1	16.5	37.6	44.8	8.7	6.9	24.0
Racial Diversity Index (2013-2017)	15.2	73.0	12.1	32.4	30.1	51.0	71.4	7.2	6.6	32.7
Percentage of Population Black/African-American (2008-2012)	92.9	40.0	92.1	92.4	91.4	75.3	22.5	96.0	96.8	81.7
Percentage of Population Black/African-American (2013-2017)	93.6	42.2	93.8	85.6	84.6	68.3	28.8	96.4	96.9	79.0
Percentage Total Population Change (2000-2010)	-12.6	7.1	-0.9	5.7	-13.9	-21.3	9.6	-15.2	-10.7	-7.2
Percentage of Residential Properties that are Vacant and Abandoned (2012)	9.6	5.5	4.1	4.6	15.4	29.2	3.7	15.5	1.7	11.5
Percentage of Residential Properties that are Vacant and Abandoned (2017)	13.6	7.7	2.4	6.9	15.2	34.2	5.3	19.4	1.9	13.3
Percentage of Residential Properties that Do Not Receive Mail (2012)	9.9	9.5	7.2	4.4	17.0	15.2	11.2	11.4	6.0	10.8
Percentage of Residential Properties that Do Not Receive Mail (2017)	12.5	15.2	8.4	4.5	18.3	26.1	12.4	16.4	5.4	14.0
Number of Homes Sold (2012)	9.0	28.5	35.0	2.0	15.5	14.0	26.0	14.5	10.5	16.1
Number of Homes Sold (2017)	36.0	60.0	88.0	4.7	33.3	13.7	53.0	32.0	38.5	35.7
Walk Score (2017)	82.1	40.6	57.5	47.0	75.4	83.7	68.9	73.8	59.6	65.4
Unemployment Rate (2008-2012)	16.4	20.9	15.8	20.9	20.4	31.2	19.0	21.8	22.8	21.8
Unemployment Rate (2013-2017)	18.1	12.3	10.3	10.7	13.3	16.8	14.3	13.6	12.9	13.3
Percentage of Households with Children in Poverty (2008-2012)	52.6	34.9	30.1	41.0	36.3	47.1	36.3	41.1	20.9	37.6
Percentage of Households with Children in Poverty (2013-2017)	51.8	48.8	21.3	43.5	47.9	43.0	33.2	33.7	25.6	39.7
Percentage of Population 25+ with Less than a High School Diploma/GED (2008-2012)	26.6	32.6	16.5	22.8	24.7	32.1	38.6	26.1	23.2	26.3
Percentage of Population 25+ with Less than a High School Diploma/GED (2013-2017)	23.2	25.5	17.7	16.7	14.7	38.1	31.9	22.6	14.9	22.0
Percentage of Population 25+ with a High School Diploma/GED (2008-2012)	66.3	61.6	68.0	69.9	56.0	61.5	53.4	65.8	63.9	62.8
Percentage of Population 25+ with a High School Diploma/GED (2013-2017)	67.3	66.3	58.7	71.9	58.8	56.6	58.6	68.0	70.4	63.7
Percent of Commuters Traveling More than 45 Minutes to Work (2008-2012)	30.3	21.9	31.0	25.7	24.1	29.1	15.8	22.4	25.6	25.4
Percent of Commuters Traveling More than 45 Minutes to Work (2013-2017)	17.7	27.6	19.1	23.8	22.0	18.5	16.5	24.9	30.8	22.7



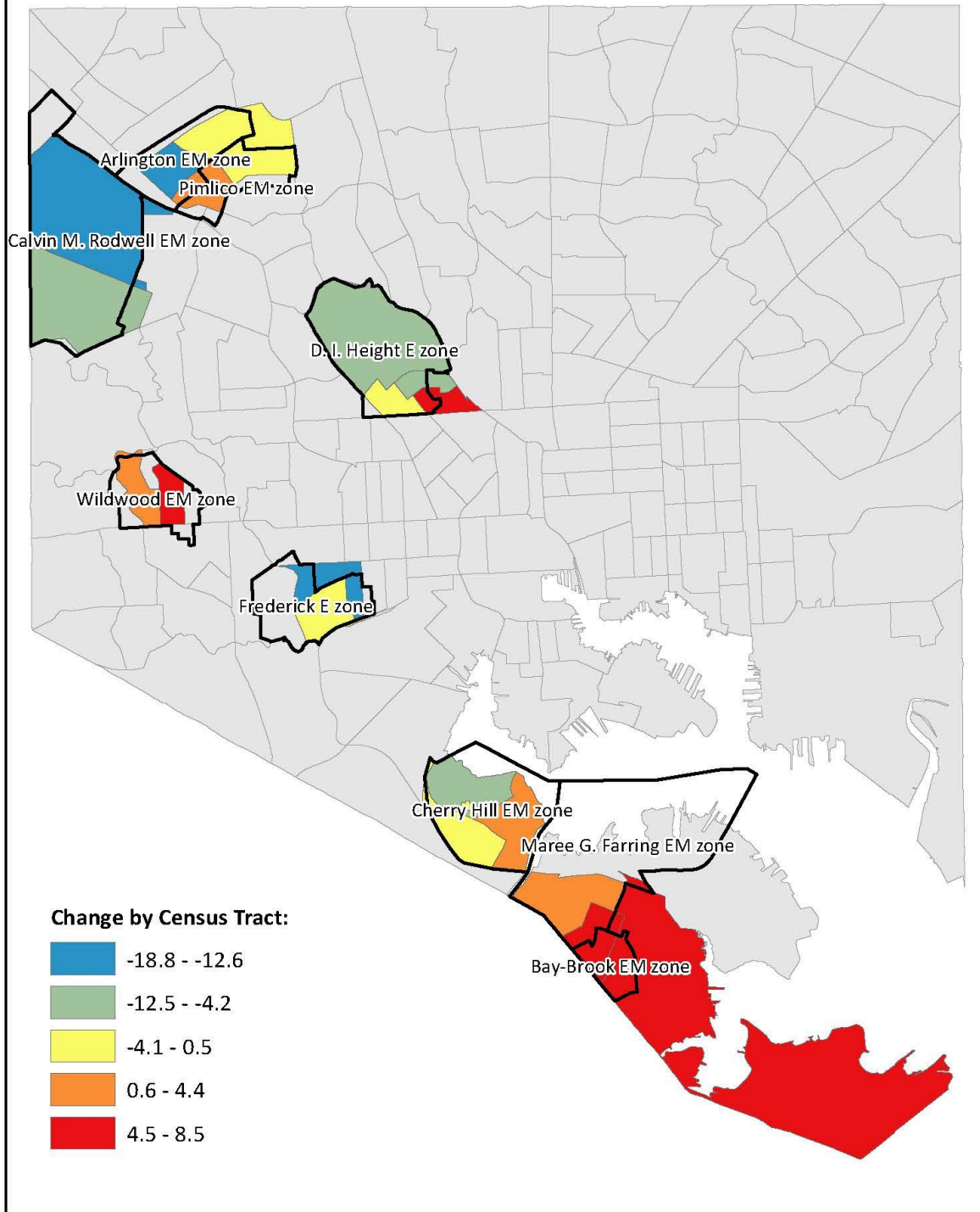
## Appendix C: Selected Maps of Change in Indicators, 2012-2017



## Change in Percentage of Households with Children in Poverty, 2008-2012 to 2013-2017



## Change in Percentage of Commuters Traveling More than 45 Minutes to Work, 2008-2012 to 2013-2017



# Walk Score, 2017

