Human Development Index Disparities in Baltimore City

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Table of Contents

1.0 Executive Summary

Freedom is the ideal that lays at the foundation of democratic societies. People in free societies enjoy numerous protected rights, such as freedom speech and association, freedom of religious expression, voting rights, property rights, and due process. Tantamount to these essential political rights are significant social, environmental, and economic factors that facilitate the experience of freedom; such as good health, access to information, quality education, and economic opportunity. All of these factors—political, social, environmental and economic—converge to produce self-autonomy; the idea that the choices individuals make determine their outcomes. However, by global and local observation it is evident that access to these foundational elements of self-autonomy are not evenly distributed. In fact, the degree of inequality that exists within these factors, and its impact on individual freedoms, can often be difficult to measure.

In 1990, the United Nations Development Program (UNDP) introduced the Human Development Index (HDI), which serves as a metric for measuring the richness of human wellbeing, the capabilities of individuals within societies, and the extent of community freedom.[1] Measures of human development extend beyond the traditional development discourse which typically focuses on collective economic productivity and output. Rather, human development incorporates a people-centered approach by assessing the opportunities available to individuals within society, and their degree of self-determination and autonomy. The UNDP maintains that universal access to human development is essential for ensuring individual freedom and will promote global peace and security.

The HDI considers three facets of human wellbeing:

- health, measured by life expectancy;
- education, measured by mean years of schooling and expected years of schooling; and
- standards of living, measured by income per capita.[2]

The UNDP's methodology uses these three metrics to calculate human development as an index score between zero and one for countries at the international level. In the organization's most recent calculations of the HDI in 2016, the United States of America received a score of 0.920, which ranked as the tenth-highest score in the world.[3] Yet, even within highly developed countries such as the United States, inequalities exist. The UNDP assesses the scope of the inequalities within countries by calculating an inequality-adjusted measure of human development, which accounts for the level of dispersion within each of the three dimensions of

[1] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 2, accessed May 3, 2018, http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf.
[2] United Nations Development Programme, "Technical notes," United Nations (2016): 1, accessed March 14, 2018, http://dev-hdr.pantheonsite.io/sites/default/files/hdr2016_technical_notes_0.pdf.
[3] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 206.

the HDI. After accounting for inequality, the United States' HDI score drops to 0.796, falling to a rank of 19th in the world.[4] Deep inequalities in human development are concerning, as they suggest the emergence of disparate experiences of freedom within societies.

Inequalities reflected by national indicators are often exacerbated when examined on a local level. Within the United States, Baltimore City is an ideal case study for examining the effects of grossly unequal levels of human development. Applying the UNDP's formula for the HDI to Baltimore City neighborhoods quantifies these local disparities, and reveals that individuals living just a few miles apart in one of the world's most developed economies experience levels of human development that are vastly different. Figure 1 below represents a summary of the human development disparities between Baltimore City neighborhoods with the ten highest and ten lowest HDIs.

[4] "Human Development Data: Inequality-Adjusted HDI," United Nations Human Development Programme, 2016, accessed May 7, 2018, http://hdr.undp.org/en/data.

Figure 1: Summary of Human Development Disparities in Baltimore City

Neighborhood	HDI	Life Expectancy	Mean Years of Schooling	Expected Years of Schooling	Income Per Capita
Ten Highest-Performing Neighborhoods					
Greater Roland Park/Poplar Hill	0.979	83.9	17.2	19.4	$73,941.63
North Baltimore/Guilford/Homeland	0.959	84.0	16.5	19.6	$53,707.14
Cross-Country/Cheswolde	0.923	87.1	14.9	17.0	$32,792.38
Mount Washington/Coldspring	0.921	81.5	15.9	16.0	$52,283.86
Inner Harbor/Federal Hill	0.920	79.2	15.6	16.4	$64,396.57
Canton	0.907	78.4	15.6	15.5	$65,416.16
South Baltimore	0.898	76.7	15.4	16.2	$58,560.54
Fells Point	0.896	78.7	15.8	14.4	$59,932.82
Midtown	0.891	76.4	15.2	18.1	$38,419.29
Medfield/Hampden/Woodberry/Remington	0.859	76.5	14.5	15.4	$37,297.27
Ten Lowest-Performing Neighborhoods					
Brooklyn/Curtis Bay/Hawkins Point	0.750	69.7	11.3	14.4	$18,425.23
Sandtown-Winchester/Harlem Park	0.746	70.0	11.2	14.4	$16,806.80
Pimlico/Arlington/Hilltop	0.744	68.2	11.7	14.1	$18,944.33
Midway/Coldstream	0.736	69.0	11.3	14.1	$16,009.33
Southwest Baltimore	0.734	68.0	11.0	14.7	$16,040.16
Southern Park Heights	0.732	70.1	11.5	12.8	$15,998.47
Clifton-Berea	0.732	66.9	11.5	14.1	$17,218.93
Madison/East End	0.731	68.9	11.2	14.4	$13,888.41
Greenmount East	0.729	67.9	11.4	14.3	$14,398.63
Upton/Druid Heights	0.725	68.2	11.8	13.5	$13,609.82
Baltimore City	**0.821**	**73.6**	**13.0**	**16.1**	**$27,129.00**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

The results of the HDI calculations for Baltimore City neighborhoods show that relative to international calculations by the UNDP, some neighborhoods such as Greater Roland Park/Poplar Hill live in conditions that are comparable to the most well-developed countries in the world, such as Australia and Singapore; whereas other neighborhoods such as Upton/Druid Heights fare worse than countries with developing economies and prevalent civil conflict, such as Iran and Thailand.[5]

Furthermore, HDI disparities fall along distinct racial divisions within Baltimore City. In a city with a resident population that is 27.7 percent white and 62.4 percent black or African-American, white residents are extremely over-represented in neighborhoods with HDIs,

[5] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 198.

accounting for over 60 percent of the population in the ten neighborhoods with the highest HDIs. By contrast, seven of the ten neighborhoods with the lowest levels of human development have a population that is over 90 percent black or African-American. These extreme inequalities have not taken root by chance, but rather are connected to the city's deeply ingrained history of racial segregation and discrimination.[6]

The disparities in HDIs across Baltimore City neighborhoods shed light onto the city's growing homicide epidemic, suggesting that inequalities in human development are related to heightened violent crime in the city's most disadvantaged neighborhoods. Understanding the causes and consequences of unequal human development in Baltimore City is important, as these measures can be used to guide policies that will promote more inclusive human development and expand social and economic freedoms to all people of Baltimore City. After assessing the underlying factors contributing to the disparities in human development in Baltimore City, RESI identifies three priority goals the City: expanding access to a healthy lifestyle, matching school resources to specific student needs, and reducing inequalities in economic opportunity. Four specific policy focuses to achieve these overarching goals include increasing the availability of healthy food, ensuring access to infant and maternal healthcare resources, creating safe and student-centered school environments, and expanding access to higher education.

2.0 Introduction to Human Development

Traditionally, in the international community, the concept of development is determined in reference to economic development—measurable by the maximization of society's collective income and the optimization of economic growth. However, this definition of development does not account for the level of opportunity or quality of living environment that individuals within societies experience on a daily basis. To incorporate a people-centered approach to the discourse of development, the United Nations Development Program (UNDP) developed the Human Development Index (HDI) in 1990 to measure the richness of human wellbeing, the capabilities of individuals within societies, and the extent of community freedom.[7] This index looks beyond the metrics of the economy that people live in, and aims to capture the opportunities that individuals have and the choices that they are able to make.[8] To measure this concept, the UNDP uses indicators relating to health, education, and standards of living to calculate an index score for human development on a scale from 0 to 1.

The UNDP maintains that human development can be equated to collective human freedom:

[6] Jelani Cobb, "City Life," *The New Yorker*, May 11, 2015, accessed May 29, 2018, https://www.newyorker.com/magazine/2015/05/11/city-life-what-racism-has-done-to-baltimore.
[7] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 2.
[8] "About Human Development," United Nations Development Programme, accessed March 14, 2018, http://hdr.undp.org/en/humandev.

"freedom to realize the full potential of every human life, not just of a few, nor of most, but of all lives."[9] While the UNDP upholds the centrality of political and democratic rights in creating a free society, the organization also emphasizes the role that social and economic factors play in determining the degree to which individuals experience freedom. For example, if people do not have the opportunity or access to the resources necessary to live healthy lives, receive high-quality education, or improve their standards of living due to external forces beyond their control, then fundamental principles of freedom such as self-determination and individual autonomy are restricted. When access to human development is unequal, only certain groups within societies have access to freedom, which can create a multitude of social problems and conflicts. To raise awareness of the issues associated with inequality in human development, and to promote inclusive human development, the UNDP grounds its work with the HDI in the founding principle of universalism; the concept that opportunity to live a healthy and enriching life should be available to all people, regardless of race, gender, religion, or geographic location.[10] The UNDP asserts that continuous, universal human development is an essential to engendering global peace, freedom, and sustainability.

Since the HDI was first measured in 1990, humanity has made significant progress in human development, as the global HDI has increased from 0.597 to 0.717.[11] For the most part, the world's most economically developed and richest countries, such as Norway, Australia, the United States, and Canada have maintained and increased standards of human development over the last 25 years. In addition, several countries with developing economies that recently experienced rapid growth such as Singapore, China, and India have contributed greatly to the global advancement in human development by achieving vast increases in their HDI. However, while remarkable global progress in human development has been achieved, this growth has not been universal. Some countries, such as Lebanon, Vanuatu, Lesotho and Tajikistan had HDIs in 2015 that were nearly unchanged compared to their initial recordings. Furthermore, countries such as Syria, Swaziland, and South Sudan had levels of human development in 2015 that were lower than their initial recordings, indicating deterioration in levels of development.[12] The disparity in global experiences of human development over the last 25 years prompted the UNDP to include national and multilateral strategies for promoting inclusive human development in the 2016 human development report.

The United States is one of the countries fortunate enough to experience considerable improvement in human development over the last two and a half decades. Despite recording a very high level of human development at the initial measurement in 1990 with a score of 0.860, the United States has maintained positive growth in HDI over the last 25 years, and has

[9] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," iii.
[10] Ibid.
[11] Ibid.
[12] Ibid, 202-205.

increased its index score to 0.920 in 2016.[13] With this HDI value, the United States currently ranks tenth in the world for human development.[14] The data components used to calculate the United States' HDI in 2016, and their international rank are displayed in Figure 2 below.

Figure 2: United States Human Development Index and Components

Data Point	U.S. National Average	Global Rank
Life Expectancy at Birth	79.2	36
Mean Years of Schooling	13.2	3
Expected Years of Schooling	16.5	18
Gross National Income Per Capita	$53,245	11
Human Development Index (HDI)	**0.920**	**10**

Source: RESI, UNDP

However, a deeper analysis of the United States reveals the extent to which inequalities in human development occur within countries and at the local level. The strong performance of the United States in terms of overall human development is not necessarily indicative of all regions within the country, nor is it an accurate reflection of the level of development experienced by all community groups within the United States. To account for inequalities and examine their impact on human development, the United Nations also publishes an Inequality-Adjusted Human Development Index (IHDI), which uses statistical measures to moderate HDI values according to the presence of disparities within a country's levels of health, education, and standards of living.[15, 16] To do so, the UNDP applies the Atkinson measure of inequality to each dimension index, thereby discounting each dimension according to the level of observed dispersion.[17] As a result, as the level of inequality within a country increases, the country's IHDI decreases. After adjusting for inequality, the UNDP found that the human development index in the United States fell to 0.796 in 2015.[18] While the United States' IDHI has improved slightly since 2013 when it was measured at a low of 0.757, it has remained consistently lower that the UNDP's initial measurement of this index in 2010, when the United States had an IDHI of 0.806.[19]

Inequalities can result due to differences in individuals' choices, behaviors, or preferences.

[13] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 206.
[14] Ibid.
[15] United Nations Development Programme, "Technical notes," 4.
[16] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 206.
[17] The Atkinson measure of inequality for each dimension of the HDI is calculated as $A=1-g/\mu$, where g is the geometric mean of the data and μ is the arithmetic mean. The result is subtracted from one, then multiplied by the original dimension index to create an inequality-adjusted value.
[18] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 206.
[19] "Inequality-adjusted HDI (IDHI)," United Nations Development Programme, 2016, accessed May 15, 2018, http://hdr.undp.org/en/indicators/138806.

However, they can also be the product of oppression, barriers to opportunity, reduced access to fundamental resources, and historically ingrained discrimination. When inequalities arise from these roots, they create a selective freedom; where those who are privileged enough to be born into well-developed, high-functioning communities have a greater level of individual autonomy and opportunity for self-determination than those who are born into the least-developed communities.

To further explore the inequalities in human development within countries, the UNDP's human development index can be applied at the local level. By using Baltimore City as a case study, local HDI calculations show the deep inequalities in human development that exist between different neighborhoods, even when they are only several blocks apart.

3.0 The Case of Baltimore City: Assessing Local Inequalities

Baltimore City is a perfect microcosm of the disparate levels of human development within the United States. By travelling from the northwest end of Baltimore to the west side of the inner city, the visible transition from affluence to poverty, opportunity to hardship, and health to suffering is palpable. While neighborhoods of central Baltimore City have been used as filming locations by the television series *House of Cards* to showcase material opulence and power in the United States, the streets of west Baltimore City were used to depict drug addiction, violence, and urban poverty in *The Wire*.[20, 21] Baltimore City highlights the persistent and cyclical nature of local inequalities and the immense impacts that they can have, even in one of the world's most developed economies.

In Baltimore City, children that grow up in different neighborhoods less than a few blocks away from one another experience levels of development that are worlds apart. At the neighborhood level, the percentage of families with children that live in poverty ranges from 63.3 percent in Poppleton/The Terraces/Hollins Market to just 2.6 percent in Canton.[22] The quality of educational resources available to students in the Baltimore City Public School System also varies immensely. For example, over 66 percent of teachers at Baltimore Polytechnic Institute located in Greater Roland Park/Poplar Hill are classified as advanced professionals, whereas only 27 percent of teachers at Benjamin Franklin High School in the neighborhood of

[20] Ellen Fishel, "'House of Cards' filming locations in the Baltimore area," *The Baltimore Sun*, 2016, accessed April 12, 2018, http://www.baltimoresun.com/entertainment/tv/z-on-tv-blog/bal-house-of-cards-locations-in-the-baltimore-area-20160320-photogallery.html.
[21] "Now and then: Places from 'The Wire,'" *The Baltimore Sun*, December 26, 2014, accessed April 12, 2018, http://www.baltimoresun.com/entertainment/tv/z-on-tv-blog/bal-baltimore-places-from-the-wire-20141226-photogallery.html.
[22] Baltimore City Health Department, "Neighborhood Health Profile Reports," 35, April 18, 2018, https://health.baltimorecity.gov/neighborhoods/neighborhood-health-profile-reports.

Brooklyn/Curtis Bay/Hawkins Point have the same designation.[23, 24] In 2017, the Urban Institute published a study on segregation in the United States between 1990 and 2010 which ranked Baltimore 21st among the 100 most populous commuting areas for concentrations of both economic segregation and black-white racial segregation.[25, 26]

Studying inequalities in human development, the histories that have brought them about, and the present-day forces that perpetuate them is important, as these findings can be used to guide policy to promote inclusive local development. Inclusive human development is essential for ensuring individual freedoms and promoting political and social stability.[27] Qualitatively, it is glaringly evident that an array of deep inequalities exist in Baltimore City. By applying the UNDP's calculation of human development at the local level, these inequalities and the way that they impact the lives of individual residents in the city can be quantitatively estimated.

4.0 Methodology

The HDI is a composite index which uses several sets of data to measure three dimensions: access to a long and healthy life, knowledge, and decent standards of living.[28] The data points used by the UNDP to calculate the HDI include life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income per capita.[29] Overall HDI scores are the geometric mean of three independent, normalized index scores representing each of the three dimensions.

While the UNDP's methodology for measuring each of the dimensions was replicated as closely as possible to calculate the HDI for Baltimore City neighborhoods to ensure comparability between the indices, some adjustments were necessary, and are detailed in the following methodology. The neighborhoods used by RESI to calculate local-level HDIs for Baltimore City reflect the boundaries of the city's 55 Community Statistical Areas (CSAs), a geography commonly used for local statistical analysis. CSAs are determined by the Baltimore City

[23] Baltimore City Public Schools, "School Report 2017: Benjamin Franklin High at Masonville Cove," accessed May 3, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/MSDEReportCards/2016/300239_2016ReportCard_ENG.pdf.
[24] Baltimore City Public Schools, "School Report 2017: Baltimore Polytechnic Institute," accessed May 3, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/MSDEReportCards/2016/300403_2016ReportCard_ENG.pdf.
[25] Gregory Acs, et al., "The Cost of Segregation," The Urban Institute (March 2017): 48, accessed April 12, 2018, https://www.urban.org/sites/default/files/publication/89201/the_cost_of_segregation_final.pdf.
[26] By comparison, New York City ranks 1st in economic segregation, and Milwaukee, Wisconsin ranks 1st in black-white racial segregation. Eugene, Oregon is the most integrated commuting zone for these measures, ranking 100th in both economic segregation and black-white racial segregation.
[27] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 51.
[28] United Nations Development Programme, "Technical notes," 1.
[29] Ibid.

Department of Planning and are described as a region comprising between one and eight census tracts with relative demographic homogeneity which reflects general public and institutional perceptions of the boundaries of a community.[30] A map of Baltimore City CSAs and neighborhood names is displayed in Figure 18 in Appendix B. Descriptions of the specific processes used to calculate each dimension, along with relevant adjustments made by RESI to calculate neighborhood HDIs are detailed in sections 4.1 through 4.3.

4.1 Long and Healthy Life

To measure access to a long and healthy life, the UNDP considers life expectancy at birth for a specific population. The estimated life expectancy at birth for a population is then normalized to create an index value. The most recent UNDP human development index report published in 2016 used a minimum life expectancy value of 20 years, due to "historical evidence that no country in the 20th century has a life expectancy of less than 20 years."[31] The maximum value used by the UNDP was 85 years, which was the projected worldwide maximum for 2016.[32]

To calculate the life expectancy index for neighborhoods in Baltimore City, data was collected for the life expectancy of each neighborhood in Baltimore City from the 2017 Neighborhood Health Profiles released by the Baltimore City Health Department in June 2017. To maintain comparability to the country indexes published in the UNDP's 2016 human development report, the minimum value for life expectancy of 20 years of age was also used in the HDI calculations for Baltimore City neighborhoods. However, the maximum life expectancy on the neighborhood level in Baltimore City in 2017 exceeded the goalpost of 85 assigned by the UNDP, at a value of 87.1 years of age in Cross-Country/Cheswolde. [33] As a result, a maximum life expectancy of 88 years of age was used to produce index scores for life expectancy at the neighborhood level.[34] Index scores for life expectancy in each neighborhood were calculated by dividing the difference between the defined maximum value and observed value by the difference between the defined maximum and minimum values.

[30] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Clifton-Berea," 30, accessed May 9, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2010%20Clifton-Berea%20(rev%206-9-17).pdf.

[31] United Nations Development Programme, "Technical notes," 2.

[32] Ibid.

[33] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Cross-Country/Cheswolde," 22, accessed May 9, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2011%20Cross-Country-Cheswolde%20(rev%206-9-17).pdf.

[34] To adapt the value for maximum life expectancy, RESI consulted the life expectancy values published in the UNDP's 2016 HDI Report. In 2016, the highest life expectancy recorded was 84.2 years of age by Hong Kong, SAR China. As a result, RESI rounded up to the next whole number from the highest observed life expectancy in Baltimore City to set a new maximum life expectancy value at the neighborhood level.

4.2 Knowledge

The UNDP uses two measures to calculate the knowledge component of the HDI: mean years of schooling and expected years of schooling. The arithmetic mean of these independent measures is taken to calculate the overall knowledge dimension of the human development index. The methodology used to calculate mean years of schooling and expected years of schooling respectively, as well as the adaptations for applicability on the neighborhood level, are described below.

4.2.1 Mean Years of Schooling

Mean years of schooling estimates the average years of education of a country's adult population aged 25 years and over.[35] The UNDP uses International Standard Classification of Education (ISCED) levels to calculate the mean years of schooling component of the HDI. To standardize education levels across countries, the UNESCO Institute for Statistics (UIS) provides country mappings, which equate the education levels and durations to ISCED designations. The ISCED levels used to calculate mean years of schooling, their corresponding definition in the United States, and the number of years assigned to each level are displayed in Figure 3 below.

Figure 3: ISCED Levels and Equivalent U.S. Levels of Educational Attainment

ISCED Level	U.S. Level of Education Completed	Years Assigned
ISCED 01/02	No schooling	0
ISCED 03	Less than grade 6	3
ISCED 1	Grade 6	6
ISCED 2	Grade 9	9
ISCED 3/4	Grade 12 or GED Certificate	12
ISCED 5	Associate's Degree	14
ISCED 6	Bachelor's Degree	16
ISCED 7	Master's Degree	18
ISCED 8	Doctoral Degree	21

Source: RESI, UIS

It should be noted that the UIS only accounts for completed levels of education when calculating mean years of schooling, except in the case of incomplete primary education. Therefore, the education attainment of individuals why have only partially completed an ISCED level is rounded down to their highest completed level of education. For example, adults in the United States that attended some college but did not receive a degree are recorded as having completed ISCED 3/4 and allocated 12 years of schooling. This methodology was also used in the calculation of mean years of schooling at the neighborhood level for Baltimore City in order to maintain consistency.

[35] "Human Development Index (HDI)," United Nations Development Programme, 2016, accessed May 17, 2018, http://hdr.undp.org/en/content/human-development-index-hdi.

The data used by the UNDP to calculate mean years of schooling is the distribution of the population 25 years and older by level of educational attainment. First, the percentage of the population that has achieved each ISCED level is multiplied by the number of years of schooling required to achieve that level of education. Next, the results of each multiplication for all ISCED levels are summed to produce the mean years of schooling for the population. To normalize this result and create an index score for mean years of schooling, the UNDP uses a minimum value of 0 years of educational attainment, since it is determined that societies can exist without formal education.[36] The maximum value of mean years of educational attainment used by the UNDP is 15 years, as this was the projected global maximum at the time of the publication of the 2016 HDI Report.[37] The formula for calculating the mean years of schooling for a given population is displayed below.[38]

$$Mean\ Years\ of\ Schooling = \sum_{I} P_I \times Y_I$$

Where:

P_I The proportion of the population for which I is the highest level of education attained

Y_I Official number of years required to achieve the level of education I

To calculate mean years of schooling at the neighborhood level in Baltimore City, RESI used data on educational attainment by census tract from the 2012-2016 American Community Survey 5-Year Estimates released by the United States Census Bureau.[39] This data was matched to ISCED standards, and the mean years of schooling for each neighborhood was calculated using the above formula. The neighborhood in Baltimore City with the greatest number of mean years of schooling was Greater Roland Park/Poplar Hill, at 16.7 years. This result was greater than the maximum number projected by the UNDP, therefore the maximum value for this indicator was increased to 17 years for the mean years of schooling index calculations at the neighborhood level. Using this adjusted maximum value, and the minimum value of 0 established by the UNDP, mean years of schooling for each neighborhood was normalized to produce an index score. Index scores for mean years of schooling in each neighborhood were calculated by dividing the difference between the defined maximum value and observed value by the difference between the defined maximum and minimum values.

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[36] United Nations Development Programme, "Technical notes," 2.

[37] Ibid.

[38] UNESCO Institute for Statistics, "UIS Methodology for Estimation of Mean Years of Schooling," 5, December 2016, accessed June 15, 2018, http://uis.unesco.org/sites/default/files/documents/uis-methodology-for-estimation-of-mean-years-of-schooling-2013-en_0.pdf.

[39] "B15003: Educational Attainment for the Population 25 Years and Over: 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau, 2017, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B15003&prodType=table.

4.2.2 Expected Years of Schooling

Expected years of schooling, also known as "school life expectancy," is the number of years of schooling a child entering the education system today can expect to receive over their lifetime, assuming that current enrollment rates remain constant.[40] The UNDP calculates expected years of schooling by summing age-specific enrollment rates for the school aged population. The UNDP then normalizes this metric to create an index score, using a minimum value of 0, and a capped maximum value of 18 expected years of schooling. This means that any country with an expected years of schooling that exceeds 18 is assigned a value of 18 years when calculating the index score.[41]

To calculate the expected years of schooling on the neighborhood level in Baltimore City, RESI used data on enrollment rates by census tract from the 2012-2016 American Community Survey 5-Year Estimates released by the United States Census Bureau.[42] The enrollment rates for students between the ages of 5 and 24 were calculated and summed for each neighborhood to generate expected years of schooling. The United States Census Bureau reports school enrollment for the following age brackets at the local level; ages 5-9, 10-14, 15-17, 18-19, and 20-24.[43] Thus, to calculate the enrollment rate for the school aged population in this case, the enrollment rates of each age range were multiplied by the years of school included in each range. The formula used for the calculation of expected years of schooling is displayed below.[44]

$$Expected\ Years\ of\ Schooling = \sum_{c}^{a} n \times m_x$$

Where:

$$m_x = \frac{f}{P}$$

a	Age of children entering school system
c	Upper age limit of the school-aged population
n	Number of years in the school in the reported age interval
f	Number of residents in the reported age interval that are enrolled in school
P	Total number of residents in the reported age interval
m_x	Enrollment rate of people in the reported age interval

[40] "Expected Years of Schooling," United Nations Development Programme, 2016, accessed March 30, 2018, http://hdr.undp.org/en/content/expected-years-schooling-males-years.

[41] United Nations Development Programme, "Technical notes," 2.

[42] "B14003: School Enrollment: 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau, 2017, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B14003&prodType=table.

[43] Ibid.

[44] Jose Irineu Rangel Rigotti, et al., "A Re-Examination of the Expected Years of Schooling: What Can it Tell Us?," 2, International Policy Center for Inclusive Growth, 2013, accessed June 15, 2018, http://www.ipc-undp.org/pub/IPCWorkingPaper117.pdf.

After calculating the number of expected years of schooling for each neighborhood in Baltimore City, RESI normalized the values to produce the dimension index score by using the same minimum and capped maximum values as the UNDP. Index scores for expected years of schooling in each neighborhood were calculated by dividing the difference between the defined maximum value and observed value by the difference between the defined maximum and minimum values. The arithmetic mean of the mean years of schooling index and the expected years of schooling index was used to produce the neighborhood's overall index score for education.

4.3 Standards of Living

The UNDP uses gross national income (GNI) per capita to measure the standards of living within a country.[45] GNI per capita is defined by the World Bank as "the sum of value added by all resident producers, plus any product taxes (less subsidies) not included in the valuation of output, plus net receipts of primary income from abroad" divided by the resident population and converted to international purchasing power parity (equivalency to the U.S. dollar).[46] To calculate a standard of living index score from gross national income per capita, the UNDP takes the natural logarithm of the actual maximum and minimum values because each additional dollar of income has a smaller impact on expanding an individual's capabilities.[47] The UNDP sets the minimum value for GNI per capita at $100, and the maximum value at $75,000, because there is no significant gain in human development when income exceeds this maximum value.[48] Thus, the formula used to calculate the standards of living dimension index is a follows.

$$Standards\ of\ Living\ Index = \frac{\boldsymbol{ln}[maximum\ value] - \boldsymbol{ln}[observed\ value]}{\boldsymbol{ln}[maximum\ value] - \boldsymbol{ln}[minimum\ value]}$$

GNI per capita data is not disaggregated by neighborhood or census tract in the United States. Therefore, to calculate the standard of living index for neighborhoods in Baltimore City, RESI used data for per capita income in the past 12 months by census tract from the 2012-2016 American Community Survey 5-Year Estimates released by the United States Census Bureau.[49] Income per capita is defined by the United States Census Bureau as the aggregate income all people in a group received from "wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income; public assistance or welfare

[45] "Human Development Index (HDI)," United Nations Development Programme.
[46] "GNI per capita, PPP (current international $)," The World Bank, accessed May 22, 2018, https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD.
[47] United Nations Development Programme, "Technical notes," 2.
[48] Ibid.
[49] "B19301: Per Capita Income in the Past 12 Months (In 2016 Inflation-Adjusted Dollars): 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B19301&prodType=table.

payments; and retirement, survivor, or disability pensions" divided by the number of people in that group.[50] Although per capita income in the past 12 months is slightly different than GNI per capita, it is the closest substitute for calculating the standards of living dimension of the HDI at the local level. The same maximum and minimum values used by the UNDP were also applied to the standard of living calculations on the neighborhood level.

After calculating independent index scores for the health, knowledge, and standards of living dimensions using the methodology described above, RESI took the geometric mean of the three indices to produce the overall HDI for each neighborhood in Baltimore City.

5.0 Results

The HDI for each neighborhood in Baltimore City, as well as data for each metric used to calculate the HDI are displayed in Figure 4 below, in order of highest to lowest levels of human development. Please refer to Figure 19 in Appendix B for a map of HDIs across Baltimore City neighborhoods.[51]

[50] United States Census Bureau, "American Community Survey and Puerto Rico Community Survey 2016 Subject Definitions," 81-86, accessed May 22, 2018, https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2016_ACSSubjectDefinitions.pdf.

[51] A map displaying HDIs across Baltimore City neighborhoods can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.

Figure 4: Human Development Index and Dimension Components for Baltimore City Neighborhoods

Rank	Neighborhood	HDI	Life Expectancy	Mean Years of Schooling	Expected Years of Schooling	Income Per Capita
1	Greater Roland Park/Poplar Hill	0.979	83.9	17.2	19.4	$73,941.63
2	North Baltimore/Guilford/Homeland	0.959	84.0	16.5	19.6	$53,707.14
3	Cross-Country/Cheswolde	0.923	87.1	14.9	17.0	$32,792.38
4	Mount Washington/Coldspring	0.921	81.5	15.9	16.0	$52,283.86
5	Inner Harbor/Federal Hill	0.920	79.2	15.6	16.4	$64,396.57
6	Canton	0.907	78.4	15.6	15.5	$65,416.16
7	South Baltimore	0.898	76.7	15.4	16.2	$58,560.54
8	Fells Point	0.896	78.7	15.8	14.4	$59,932.82
9	Midtown	0.891	76.4	15.2	18.1	$38,419.29
10	Medfield/Hampden/Woodberry/Remington	0.859	76.5	14.5	15.4	$37,297.27
11	Highlandtown	0.853	74.5	13.9	15.7	$42,626.21
12	Greater Charles Village	0.845	74.1	14.4	18.4	$23,214.44
13	Downtown/Seton Hill	0.842	67.5	15.6	18.2	$35,974.03
14	Hamilton	0.839	73.8	13.2	17.3	$29,649.94
15	Glen-Fallstaff	0.838	79.2	12.9	15.6	$24,717.81
16	Lauraville	0.837	76.5	13.2	15.7	$28,929.00
17	Northwood	0.836	75.6	12.8	18.8	$22,034.27
18	Chinquapin Park/Belvedere	0.835	75.3	13.4	16.0	$28,162.57
19	Harford/Echodale	0.832	75.7	12.9	16.0	$28,659.94
20	Loch Raven	0.824	75.9	12.6	15.7	$26,785.89
21	Greater Govans	0.817	73.3	12.8	16.3	$25,962.25
21	Harbor East/Little Italy	0.817	72.1	13.4	15.6	$29,647.06
23	Beechfield/Ten Hills/West Hills	0.816	74.7	12.9	15.0	$27,564.39
24	Howard Park/West Arlington	0.814	76.1	12.4	15.2	$24,759.50
25	Paterson Park North & East	0.809	72.4	13.3	14.5	$31,086.70
26	Forest Park/Wallbrook	0.807	74.0	12.6	15.1	$25,389.21
27	Dorchester/Ashburton	0.800	73.4	12.2	15.8	$22,432.23

27	Dickeyville/Franklintown	0.800	73.2	13.1	14.6	$23,677.00
29	Washington Village/Pigtown	0.798	70.1	12.9	15.8	$26,211.65
30	Belair-Edison	0.795	72.0	12.4	16.5	$19,626.98
30	Morrell Park/Violetville	0.795	73.6	11.3	15.8	$23,584.56
32	Cedonia/Frankfurt	0.790	72.4	12.3	15.3	$21,788.10
33	Westport/Mount Winans/Lakeland	0.787	73.8	11.5	16.0	$18,206.55
34	Edmonson Village	0.784	71.8	12.1	15.3	$21,412.53
35	The Waverlies	0.783	72.0	12.5	14.5	$22,095.39
36	Orangeville/East Highlandtown	0.781	73.0	11.3	15.4	$20,370.29
37	Southeastern	0.778	72.7	11.5	15.4	$19,109.78
38	Penn North/Reservoir Hill	0.777	71.6	12.7	14.2	$20,639.81
39	Greater Mondawmin	0.769	70.4	12.0	15.6	$17,775.74
40	Allendale/Irvington/South Hilton	0.767	70.9	11.7	15.3	$17,909.09
41	Oldtown/Middle East	0.759	70.4	11.7	15.6	$14,965.23
42	Claremont/Armistead	0.757	70.9	11.6	14.5	$17,435.72
43	Greater Rosemont	0.756	70.6	11.7	14.3	$17,759.72
44	Poppleton/Terraces/Hollins Market	0.752	68.4	11.8	15.7	$15,635.99
45	Cherry Hill	0.751	69.5	11.9	15.6	$13,529.58
46	Brooklyn/Curtis Bay/Hawkins Point	0.750	69.7	11.3	14.4	$18,425.23
47	Sandtown-Winchester/Harlem Park	0.746	70.0	11.2	14.4	$16,806.80
48	Pimlico/Arlington/Hilltop	0.744	68.2	11.7	14.1	$18,944.33
49	Midway/Coldstream	0.736	69.0	11.3	14.1	$16,009.33
49	Southwest Baltimore	0.734	68.0	11.0	14.7	$16,040.16
51	Southern Park Heights	0.732	70.1	11.5	12.8	$15,998.47
51	Clifton-Berea	0.732	66.9	11.5	14.1	$17,218.93
53	Madison/East End	0.731	68.9	11.2	14.4	$13,888.41
54	Greenmount East	0.729	67.9	11.4	14.3	$14,398.63
55	Upton/Druid Heights	0.725	68.2	11.8	13.5	$13,609.82
	Baltimore City	**0.821**	**73.6**	**13.0**	**16.1**	**$27,129.00**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

As shown in Figure 4, only four Baltimore City neighborhoods—Greater Roland Park/Poplar Hill, North Baltimore/Guilford/Homeland, Cross-Country/Cheswolde and Mount Washington/Coldspring—have HDIs greater than the United States' national score of 0.920.[52] One neighborhood, Inner Harbor/Federal Hill, has an HDI equal to that of the United States as a whole. The remaining 50 neighborhoods have HDIs that are less than the national index.

One of the notable differences between the nationwide dimensions calculated by the UNDP and those calculated at the local level for Baltimore City, is that the city has considerably lower life expectancy. Life expectancy across the United States is 79.2 years of age, whereas life expectancy for Baltimore City residents is approximately five and a half years shorter, at 73.6 years of age.[53] While statistics for standards of living at the national and local levels are not directly comparable due differences in the calculation of per capita income and GNI per capita, they do suggest that Baltimore City has slightly lower standards of living than the United States as a whole. The mean years of schooling and expected years of schooling for residents of Baltimore City overall are similar to national averages. The adult population over 25 years of age in Baltimore City has a mean of 13 years of schooling, which is very close to the national average of 13.1 years of schooling.[54] Similarly, the expected years of schooling for children entering the education system in Baltimore City is 16.1 years, roughly equivalent to a bachelor's degree; whereas across the United States, children entering the education system can expect to receive 16.5 years of schooling.[55]

Most strikingly, the results of the local HDI calculations presented in Figure 4 highlight the vast disparities that exist between Baltimore City neighborhoods. Greater Roland Park/Poplar Hill has the highest level of human development with an HDI of 0.979. By contrast, the neighborhood with the lowest level of human development is Upton/Druid Heights, with an HDI of 0.725. Not surprisingly, there are also vast inequalities within each of the dimensions used to calculate the HDI for these two neighborhoods. In Upton/Druid Heights, life expectancy is 15.7 years shorter than in Greater Roland Park/Poplar Hill, and the adult population has approximately 5.4 years less education. Children entering school in Upton/Druid Heights can expect 5.9 fewer years of schooling than children living in Greater Roland Park/Poplar Hill; equating to the difference between dropping out of college after one and a half years and completing a Master's degree plus a year and a half of a doctoral degree. Finally, per capita income is $60,331.81 less per person in Upton/Druid Heights compared to income per capita in Greater Roland Park/Poplar Hill.

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[52] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 206, accessed May 3, 2018, http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf.
[53] Ibid, 198.
[54] Ibid.
[55] Ibid.

5.1 Baltimore City's Human Development in a Global Context

Comparing the HDIs calculated for neighborhoods in Baltimore City to those of other countries provides a greater perspective on the extreme differences in health, education, and living standards that residents of Baltimore City experience. For example, the average HDI for member states of the Organization for Economic Cooperation and Development (OECD) is 0.887, a benchmark which only nine of fifty-five Baltimore City neighborhoods outperform. By contrast, the average HDI of developing countries is 0.668.[56] Although there are no neighborhoods in Baltimore City that have HDIs below 0.725, 18 neighborhoods in Baltimore City have HDIs that are closer to the average for countries with developing economies than to OECD standards.

Furthermore, specific comparisons between Baltimore City neighborhoods and countries with similar HDIs can be drawn to place local human development disparities in a global context. Figure 5 compares the ten neighborhoods in Baltimore City with the highest levels of human development, as well as the ten neighborhoods with the lowest levels of human development to countries with similar HDIs. In addition, Figure 5 lists the theoretical global ranking for each of the Baltimore City neighborhoods listed. A full global comparison of all Baltimore City neighborhoods is displayed in Figure 12 of Appendix A.

[56] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 201.

Figure 5: Baltimore City HDIs and International Comparisons for Selected Neighborhoods

Neighborhood	HDI	Theoretical World Ranking (2016)	Country Comparison
Ten Highest-Performing Neighborhoods			
Greater Roland Park/Poplar Hill	0.979	1	Norway (0.949)
North Baltimore/Guilford/Homeland	0.959	1	Norway (0.949)
Cross-Country/Cheswolde	0.923	8	Ireland (0.923)
Mount Washington/Coldspring	0.921	9	Iceland (0.921)
Inner Harbor/Federal Hill	0.920	10	United States (0.920)
Canton	0.907	16	United Kingdom (0.909)
South Baltimore	0.898	20	Luxembourg (0.898)
Fells Point	0.896	22	Belgium (0.896)
Midtown	0.891	25	Slovenia (0.890)
Medfield/Hampden/Woodberry/Remington	0.859	32	Andorra (0.858)
Ten Lowest-Performing Neighborhoods			
Brooklyn/Curtis Bay/Hawkins Point	0.750	81	Bosnia and Herzegovina (0.750)
Sandtown-Winchester/Harlem Park	0.746	83	Algeria (0.745)
Pimlico/Arlington/Hilltop	0.744	83	Algeria (0.745)
Midway/Coldstream	0.736	91	Fiji (0.736)
Southwest Baltimore	0.734	92	Mongolia (0.735)
Southern Park Heights	0.732	94	Jamaica (0.730)
Clifton-Berea	0.732	94	Jamaica (0.730)
Madison/East End	0.731	94	Jamaica (0.730)
Greenmount East	0.729	95	Colombia (0.727)
Upton/Druid Heights	0.725	97	Tunisia (0.725)
Baltimore City	**0.821**	**47**	**Bahrain (0.824)**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Only five of fifty-five neighborhoods in Baltimore City have levels of human development that rank within the top-ten HDI country listings. Conversely, seven neighborhoods fall outside of the top 90 countries in the world.[57] The ten neighborhoods with the highest level of human development in Baltimore City perform very well when compared to international HDI rankings. Each of the countries listed as a comparison for the top ten neighborhoods in Baltimore City is classified as a developed, high-income economy by the United Nation's World Economic

[57] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 199.

Situation and Prospects Report 2018.[58] By contrast, each of the ten neighborhoods with the lowest HDIs in Baltimore City has an HDI comparable to countries classified by the United Nations Department of Economic and Social Affairs as developing or transitioning economies, which typically have lower levels of income, industrialization, and global financial integration.[59] Further comparison between local and international HDIs reveals that the majority of neighborhoods in Baltimore City have HDIs lower than Russia (0.804).[60] Other notable countries which have national HDIs higher than all ten of the lowest-ranked neighborhoods in Baltimore City include Cuba (0.775), Iran (0.774), and Mexico (0.762).[61]

5.2 Race and Baltimore City's Human Development Indexes

The UNDP gives particular attention to disparities in human development that fall along racial and ethnic lines, as these divisions often identify specific groups that are consistently discriminated against, and thus left behind in the pursuit of development growth. The UNDP asserts that, "Group inequalities reflect divisions that are socially constructed and sustained because they establish the bases for unequal access to valued outcomes and scarce resources."[62] In the 2016 report *Human Development for Everyone*, the UNDP used the United States as a case study of a country in which levels of human development vary significantly between racial or ethnic groups.[63]

The UNDP's 2016 report highlighted that across the United States, African Americans experience a level of human development that is significantly lower than the national average, whereas white Americans and Asian Americans experience levels of human development that exceed national averages.[64] Among the factors contributing to the low levels of human development experienced by African Americans in the United States is a national history of institutionalized racism that has caused significant lags in development indicators for African Americans, such as income, employment, and educational attainment. Furthermore, the UNDP noted the extreme discrepancies in life expectancy between racial groups in the United States, with African-American life expectancy in major cities such as Baltimore, Chicago, and Detroit, only now reaching national averages from the 1970s.[65]

By comparing racial demographic statistics for residents of Baltimore City neighborhoods with the area's respective HDI, racial disparities in human development at the local level become

[58] United Nations Department of Economic and Social Affairs, "World Economic Situation and Prospects 2018," 142, accessed May 17, 2018, https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf.
[59] Ibid.
[60] Ibid.
[61] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 199.
[62] Ibid, 6.
[63] Ibid, 61.
[64] Ibid.
[65] Ibid.

increasingly apparent. Figure 6 below displays the racial demographics of the neighborhoods with the ten highest and ten lowest HDIs in Baltimore City. A detailed table including the racial composition of all Baltimore City neighborhoods by level of human development is located in Figure 13 of Appendix A.

Figure 6: Baltimore City HDIs and Racial and Ethnic Composition for Selected Neighborhoods[66]

Neighborhood	HDI	White	African American or Black	Asian	Other Race or Two or More Races	Hispanic or Latinx
Ten Highest-Performing Neighborhoods						
Greater Roland Park/Poplar Hill	0.979	78.3%	6.8%	7.8%	3.9%	3.3%
North Baltimore/Guilford/Homeland	0.959	65.6%	17.7%	7.7%	5.6%	3.4%
Cross-Country/Cheswolde	0.923	73.4%	18.6%	5.4%	0.5%	2.1%
Mount Washington/Coldspring	0.921	65.0%	25.7%	4.9%	0.8%	3.6%
Inner Harbor/Federal Hill	0.920	73.3%	13.6%	4.3%	3.6%	5.3%
Canton	0.907	86.5%	3.4%	4.0%	2.9%	3.2%
South Baltimore	0.898	89.7%	1.7%	3.1%	0.9%	4.6%
Fells Point	0.896	75.1%	5.4%	4.9%	4.0%	10.6%
Midtown	0.891	52.0%	31.4%	7.1%	3.3%	6.2%
Medfield/Hampden/Woodberry/Remington	0.859	75.6%	10.7%	6.9%	2.8%	4.0%
Ten Lowest-Performing Neighborhoods						
Brooklyn/Curtis Bay/Hawkins Point	0.750	40.7%	40.6%	1.2%	4.6%	12.9%
Sandtown-Winchester/Harlem Park	0.746	0.8%	96.2%	0.4%	2.4%	0.1%
Pimlico/Arlington/Hilltop	0.744	2.3%	95.2%	0.3%	1.7%	0.6%
Midway/Coldstream	0.736	3.0%	92.7%	0.6%	2.1%	1.6%
Southwest Baltimore	0.734	13.0%	75.5%	1.7%	3.3%	6.5%
Southern Park Heights	0.732	2.2%	93.8%	0.3%	0.8%	2.9%
Clifton-Berea	0.732	1.9%	93.8%	0.7%	1.8%	1.8%
Madison/East End	0.731	1.5%	88.1%	0.1%	0.9%	9.4%
Greenmount East	0.729	3.1%	94.2%	0.1%	0.6%	2.0%
Upton/Druid Heights	0.725	4.2%	92.0%	1.7%	1.5%	0.6%
Baltimore City	**0.821**	**27.7%**	**62.4%**	**2.5%**	**2.6%**	**4.8%**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

As shown above in Figure 6, there is a disproportionate racial distribution of residents in neighborhoods with the ten highest and the ten lowest HDIs in Baltimore City. Neighborhoods with the highest levels of human development also have a disproportionately high percentage of white residents, and a percentage of black or African-American residents that falls well below citywide demographic distributions. By contrast, nine of the ten neighborhoods in Baltimore City with the lowest HDIs have a disproportionately high percentage of African-

[66] In this table, white, African-American/black, Asian and other race/two or more races refer to non-Hispanic/Latinx populations.

American residents and a low percentage of white residents. Seven of the ten neighborhoods with the lowest levels of human development have a population that is over 90 percent black or African-American.

The disparities revealed by this comparison show that on a local level, black or African-American residents of Baltimore City are predominately experiencing lower levels of human development than white residents of Baltimore City. This stratification of human development along racial divisions is not by chance. The disparities that exist between health standards, quality of education, and income mobility for predominantly black communities are the product of the city's ties to legalized residential segregation and long-standing practices of racial discrimination.

Racism has been, and continues to be, a pervasive issue in Baltimore City that has been exemplified throughout the entirety of the city's history. The significance of this racist history to the city's development, and its impact on residential segregation is highlighted by Ordinance 610, which became law in 1911. This ordinance made Baltimore City the first in the United States to have legislation that legally established and enforced residential segregation between African-American and white residents.[67] Ordinance 610 made it illegal, with punishment of imprisonment, for African-American residents to move into blocks that were predominantly white and prohibited African-American residents from using locations on "white" streets as places of public assembly.[68]

The legislated enforcement of residential segregation in 1911 was driven by the desire of local government officials and neighborhood developers to make Eutaw Place the most affluent, stylish, and desirable residential street in Baltimore City. However, several blocks west of Eutaw Place was one of Baltimore City's most densely populated, almost entirely African-American neighborhoods, located between Argyle Street and Druid Hill Avenue, and extending from North Avenue to Biddle Street (now Dolphin Street).[69] While the residents to in the northern part of this neighborhood were modest middle-class African-American families, the southern part of the neighborhood was one of Baltimore City's most infamous slums.[70] As resident populations of this neighborhood continued to increase and living conditions deteriorated, racist politicians and local officials were concerned that African-American families who could afford to escape the poor living conditions in the Druid Hill/Biddle street area would move eastward to the Eutaw Place. They feared this migration would detract from its image of white affluence on Eutaw Place, and ultimately lower property values. Thus, Ordinance 610 was written to maintain the delineation of concentrated poverty and disparate neighborhood living

[67] Garrett Power, "Apartheid Baltimore Style: The Residential Segregation Ordinances of 1910-1913," *Maryland Law Review* 42, no. 2 (1982): 289, accessed April 27, 2018, https://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=2498&context=mlr.
[68] Ibid, 299-300.
[69] Ibid, 295.
[70] Ibid.

conditions along racial divisions.

In the landmark case of *Buchanan v. Warley* in 1917, United States Supreme Court declared local laws enforcing residential segregation to be unconstitutional on the grounds that they interfered with the property rights of current property owners, thereby nullifying Ordinance 610 in Baltimore City.[71] However, while local legislation could no longer legally guarantee the segregation of black and white residents in Baltimore City, banking practices, institutionalized racism, and social norms ensured that the intent of Ordinance 610 lived on. Banks and lending institutions in Baltimore practiced "redlining," where predominately black or integrated neighborhoods would be labelled as unstable, risky, or unfavorable, and therefore the residents of these neighborhoods would be denied access to credit, mortgage loans, and financial resources.[72] Without access to these essential resources, racial inequalities are perpetuated across generations, as people are systematically denied the opportunity to pursue avenues of socioeconomic mobility and wealth creation, and are often forced to take on risky and expensive financial agreements in order to access capital.[73]

The Federal Housing Administration also adopted this position, as it refused to provide support to residents in neighborhoods with "inharmonious racial groups."[74] Furthermore, affluent, white neighborhoods in Baltimore City, such as Roland Park, established homeowners' covenants that barred African-Americans.[75] These practices perpetuated de facto residential segregation by depriving minorities of the opportunity to move out of impoverished neighborhoods and into ones that would offer better education, job opportunities, standards of living, and health prospects for their children.

Although legislated residential segregation has been deemed unconstitutional, and discriminatory practices have been recognized as unlawful, Baltimore City's history of racist policies and practices have lasting impacts. In 2017, one in three households of color in Baltimore City had zero or negative net worth.[76] Today, the historically black, impoverished neighborhood that encompassed the area between Argyle Street and Druid Hill Avenue is located in the heart of the Upton/Druid Hill neighborhood; where the resident population is 92.2 percent black, life expectancy is 11 years below the national average, and overall human development is lowest in Baltimore City. Meanwhile, Eutaw Place remains the street marking the boundary between Upton/Druid Heights and the neighborhood of Midtown, which has one of the city's highest levels of human development and a resident population that is

[71] Buchanan v. Warley, 245 U.S. 60 (1917).
[72] Power, "Apartheid Baltimore Style: The Residential Segregation Ordinances of 1910-1913," 319.
[73] JP Morgan Chase & Co, "Racial Wealth Divide in Baltimore," January 2017, 3, accessed May 29, 2018, https://prosperitynow.org/files/PDFs/profiles/Racial_Wealth_Divide_in_Baltimore_RWDI.pdf.
[74] Power, "Apartheid Baltimore Style: The Residential Segregation Ordinances of 1910-1913," 319.
[75] Justin George and Mark Puente, "Baltimore Leaders Agree: City has a Race Problem," *The Baltimore Sun*, March 14, 2015, accessed April 30, 2018, http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-baltimore-racism-20150314-story.html.
[76] JP Morgan Chase & Co, "Racial Wealth Divide in Baltimore," 3.

disproportionately white. Thus, understanding the history of Baltimore City is essential to assessing the consequences of the city's extreme inequalities in human development, and how these inequalities disproportionately impact certain groups.

6.0 Consequences of Unequal Human Development

Disparities in human development have implications for peace and security at international, national, and local levels. As the breadth of research on human development continues to grow, one of the focal points of development analysts has been the concentration of violence in areas that are most disadvantaged. A common, yet overly simplistic explanation for this relationship is that poverty cultivates violence.[77] However, studies have found that while the poorest people are disproportionately impacted by social issues such as chronic violence and homicide; poverty itself is not the best indicator for predicting the occurrence of violence.[78] Rather, the best predictor for the prevalence of violence in an area is that society's level of material inequality.[79]

A foundational study conducted by Richard Wilkinson of Nottingham University and Kate Pickett of York University found that social issues, such as homicide rates and chronic violence, are caused by the scale of society's inequality of material conditions, which includes housing, nutrition, and educational opportunities.[80] The study found that this relationship held true at the international level by comparing the levels of inequality and violence among developed countries, as well as the national level, by comparing the same indicators between states in the United States.[81] The scale of social and material inequality increases the prevalence of violence by creating relative depravation; an awareness of the "gap between aspirations and livelihood options."[82] This awareness of the unequal access to opportunities for well-being and success spur feelings of hopelessness, resignation, shame, and rage, which can manifest into violence. [83]

The Woodrow Wilson International Center for Scholars recently published a report which further suggests that the link between inequality and violence is particularly pronounced in societies where there is a history of systematic exclusion, discrimination, or violent oppression

[77] Tani Marilena Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," The Woodrow Wilson International Center for Scholars (2017): 11, accessed April 25, 2018, https://www.wilsoncenter.org/sites/default/files/chronic_violence_final_by_tani_adams.pdf.
[78] Ibid.
[79] Ibid.
[80] Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Greater Equality Makes Stronger Societies*: (New York: Bloomsbury Press, 2009), 20-25.
[81] Wilkinson and Pickett, *The Spirit Level: Why Greater Equality Makes Stronger Societies*, 25.
[82] Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," 11.
[83] Ibid, 14.

of a particular group.[84] Remembered histories can cause traumatic associations between current experiences of violence and those of the past, and cause individuals to react to real and perceived threats in ways that intensify violence and social conflict.[85] These factors that contribute to the prevalence of violence in unequal societies are pertinent to the case of Baltimore City, given its history of racism and human development disparities. On a local level, these associations between violence and inequality are particularly relevant to the case of Baltimore City, and can be used as a platform to inform policy designed to decrease inequalities and violence.

Homicide is becoming an epidemic in Baltimore City. In 2017 there were 343 homicides, setting the record for the City's highest-ever homicide rate, at nearly 56 killings per 100,000 people.[86] This reality was further underscored by a USA Today report which found that in 2017 Baltimore City had eclipsed Chicago as the deadliest city in the United States by per capita homicides.[87] In Baltimore City, African-American men between the ages of 15 and 29 are currently at the same risk for violent death as American soldiers serving in Iraq at the height of the Iraq War.[88] However, this violence is disproportionately experienced by some neighborhoods more than others and is tied to the City's extremely unequal levels of human development.

6.1 HDI Inequalities and Homicide in Baltimore City Neighborhoods

To examine the impact of Baltimore City's record-setting homicide rate across all neighborhoods, RESI calculated the homicide count and rate by neighborhood in Baltimore City for 2017. Data pertaining to homicide incidents is reported by the City of Baltimore, and includes approximate locations for 342 of Baltimore City's 343 homicides in 2017.[89] These approximate locations were re-coded to match the CSAs used to calculate neighborhood HDIs. The resulting homicide rates are expressed per 100,000 people, and are calculated based on neighborhood specific populations reported by the United States Census Bureau in the American Community Survey 2012-2016 5-year estimates.[90] While neighborhood specific

[84] Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," 11.
[85] Ibid.
[86] Kevin Rector, "Baltimore Has Now Had 343 Homicides in 2017, Sets Record for Killings Per Capita," *The Baltimore Sun,* December 27, 2017, accessed April 24, 2018, http://www.baltimoresun.com/news/maryland/crime/bs-md-ci-per-capita-homicides-20171227-story.html.
[87] Aamer Madhani, "Baltimore is the Nation's Most Dangerous City," USA Today, February 19, 2018, accessed June 11, 2018, https://www.usatoday.com/story/news/2018/02/19/homicides-toll-big-u-s-cities-2017/302763002/.
[88] "Crime and Despair in Baltimore," *The Economist*, June 29, 2017, accessed April 25, 2018, https://www.economist.com/news/united-states/21724399-america-gets-safer-marylands-biggest-city-does-not-crime-and-despair-baltimore.
[89] "BPD Part 1 Victim Based Crime Data," City of Baltimore, 2018, accessed May 17, 2018, https://data.baltimorecity.gov/Public-Safety/BPD-Part-1-Victim-Based-Crime-Data/wsfq-mvij/data.
[90] "B01003: Total Population: 2012-2016 ACS Community Survey 5-Year Estimates," United States Census Bureau, 2017, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table.

populations for 2017 have not yet been released, the United States Census Bureau issued a preliminary estimate of the citywide population at 611,648 residents in 2017; a decrease of 9,352 residents from 2016 estimates.[91] As a result, the homicide rates reported by neighborhood in Figure 7 are likely to slightly underestimate the homicide rates experienced across Baltimore City in 2017.

The results of these calculations reveal extreme differences in the prevalence of violence in Baltimore City neighborhoods. In the neighborhood of Greenmount East on Baltimore City's central-west side, the homicide rate climbed as high as 290.8 killings per 100,000 people in 2017.[92, 93] By contrast, two neighborhoods in northern Baltimore City, Greater Roland Park/Poplar Hill and Cross-Country/Cheswolde, experienced zero homicides in 2017. Figure 7 below displays the homicide counts and rates in 2017 for the ten highest and lowest performing neighborhoods in the HDI. The 2017 homicide counts and rates for all Baltimore City neighborhoods by HDI is displayed in Figure 14 located in Appendix A.

[91] "Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2017," United States Census Bureau, March 2018, accessed April 25, 2018, https://www.census.gov/quickfacts/fact/table/baltimorecitymaryland,US/PST045216.
[92] "BPD Part 1 Victim Based Crime Data," City of Baltimore, 2018, accessed May 17, 2018, https://data.baltimorecity.gov/Public-Safety/BPD-Part-1-Victim-Based-Crime-Data/wsfq-mvij/data.
[93] "B01003: Total Population: 2012-2016 ACS Community Survey 5-Year Estimates," United States Census Bureau, 2017, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table.

Figure 7: Homicide Rates and Counts by HDI for Selected Neighborhoods, 2017

Neighborhood	HDI	Homicides in 2017	Population	Homicide Rate (per 100,000 people)
Ten Highest-Performing Neighborhoods				
Greater Roland Park/Poplar Hill	0.979	0	7,726	0.0
North Baltimore/Guilford/Homeland	0.959	2	17,293	11.6
Cross-Country/Cheswolde	0.923	0	13,613	0.0
Mount Washington/Coldspring	0.921	1	4,998	20.0
Inner Harbor/Federal Hill	0.920	3	13,520	22.2
Canton	0.907	1	8,182	12.2
South Baltimore	0.898	0	7,357	0.0
Fells Point	0.896	4	9,175	43.6
Midtown	0.891	1	16,092	6.2
Medfield/Hampden/Woodberry/Remington	0.859	1	16,976	5.9
Ten Lowest-Performing Neighborhoods				
Brooklyn/Curtis Bay/Hawkins Point	0.750	12	13,836	86.7
Sandtown-Winchester/Harlem Park	0.746	15	14,862	100.9
Pimlico/Arlington/Hilltop	0.744	18	11,017	163.4
Midway/Coldstream	0.736	13	8,706	149.3
Southwest Baltimore	0.734	26	17,647	147.3
Southern Park Heights	0.732	8	14,070	56.9
Clifton-Berea	0.732	11	8,777	125.3
Madison/East End	0.731	7	6,996	100.1
Greenmount East	0.729	23	7,910	290.8
Upton/Druid Heights	0.725	13	10,252	126.8
Baltimore City	**0.821**	**342**	**621,000**	**55.1**

Source: Baltimore City Department of Health, City of Baltimore, RESI

The ten highest-performing neighborhoods in the HDI recorded a total of 13 murders in 2017, resulting in an overall homicide rate of just 11.3 killings per 100,000 people. By contrast, across the ten lowest-performing neighborhoods in the HDI, there was a total of 146 homicides, equating to a rate of approximately 128 killings per 100,000 people. Despite making up just 18.4 percent of Baltimore City's total population, the ten neighborhoods with the lowest HDIs

account for 42.6 percent of the city's homicides.[94, 95] A map displaying homicide rates across Baltimore City neighborhoods in 2017 is displayed in Figure 20 in Appendix B.[96]

Baltimore City's neighborhood HDIs reveal the degree of inequality that exists within the city, and the stratification of resources along racial divisions makes these inequalities increasingly visible. Furthermore, the prevalence of violence in Baltimore City's neighborhoods with the lowest levels of human development fits the pattern identified by Wilkinson and Pickett: that violence, which is exacerbated in unequal societies, is concentrated in the communities with the fewest resources.[97]

In addition to recognizing the role of inequality in the persistence of community violence, the UNDP emphasizes the cyclical deprivations that result from violence and crime. These deprivations in turn undermine community progress in human development, creating a mutually-reinforcing relationship between violence and suppressed human development.[98] Violence impacts people's physical and mental health, emotional wellbeing, and can put strain on their employment, academic achievement, and relationships. In Baltimore City, the battle for inclusive human development is exceedingly difficult due to the prevalence of violence in disadvantaged communities.

Furthermore, violent crime increases human insecurity, raises barriers to opportunity, and prevents people from enjoying a complete range of freedoms.[99] The presence of chronic violence places conditions of extreme stress and fear on communities, weakens social relationships, and erodes capacity for civic engagement.[100] In addition, the stress of living in environments impacted by chronic violence can subconsciously impair the ability for parents to develop and maintain healthy and strong relationships with their children, thus limiting the child's capacity for physical, mental and emotional development.[101] As a result of these

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[94] "BPD Part 1 Victim Based Crime Data," City of Baltimore, 2018, accessed May 17, 2018, https://data.baltimorecity.gov/Public-Safety/BPD-Part-1-Victim-Based-Crime-Data/wsfq-mvij/data.

[95] "B01003: Total Population: 2012-2016 ACS Community Survey 5-Year Estimates," United States Census Bureau, 2017, accessed May 17, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table.

[96] A live map displaying homicide rates across Baltimore City neighborhoods in 2017 can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.

[97] Wilkinson and Pickett, *The Spirit Level: Why Greater Equality Makes Stronger Societies*, 26.

[98] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 5.

[99] United Nations Development Programme, "Citizen Security with a Human Face: Evidence and Proposals for Latin America," 4, November 2013, accessed April 25, 2018, http://hdr.undp.org/sites/default/files/citizen_security_with_a_human_face_-executivesummary.pdf.

[100] Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," 32-41.

[101] Ibid, 32.

weakened familial structures, children who experience traumatic events associated with chronic community violence are at an increased risk for developing lifelong physical, mental, and behavioral health problems. As a result, frequent violent crime creates cyclical effects that lower the quality of life and degree of individual autonomy in impacted neighborhoods, thereby suppressing opportunities for positive human development growth.

6.2 Using Development Initiatives to Reduce Homicide

Due to the role of inequality in community violence and the cyclical impacts that it creates, disparities in human development within Baltimore City must be addressed as a critical component of reducing the city's swelling homicide rate. Fortunately, Baltimore City is not the only city that has faced these issues, and relevant case studies can be used as a means for informing policy. One of the most compelling examples of a city that has reduced homicide rates by focusing on social and economic inclusion is the case of Medellín, Colombia, and the transformation that the city has undergone over the last two decades.

Today, the homicide rates in Greenmount East and several other Baltimore City neighborhoods are beginning to approach the citywide rates experienced in Medellín, Colombia in the 1990s. In response to rapidly growing homicide rates in the mid-1990s, local government officials in Medellín initiated a broad range of policies that have been coined as "social urbanism," that effectively contributed to the reduction in homicide rates from a high of 381 per 100,000 people in 1991 to rates around 50 per 100,000 people by 2014.[102] Local officials in Medellín recognized widespread socioeconomic inequality and exclusion as major driving forces of urban violence (in addition to the prevalence of violent drug cartels). Input from local residents was used to guide investment into community development initiatives, which included creating social programs; building clean, high-quality infrastructure such as libraries, community centers, and public schools; and constructing efficient subway and public transportation systems.[103, 104] These initiatives served to connect the neighborhoods with the fewest resources to employment and educational opportunities, and worked to reduce social and economic exclusion of Medellín's most disadvantaged residents.[105]

While the city is still working on overcoming broad issues relating to homelessness, employment opportunities, and justice reform, the case of Medellín serves as an example for how social policy can be used to reduce homicide and abate inequality concurrently. Noting the successes in Medellín, the UNDP recommends local development-centered initiatives as a

[102] "Medellin's Comeback: The Trouble With Miracles," *The Economist*, June 7, 2014, accessed April 26, 2018, https://www.economist.com/news/americas/21603432-transformation-colombias-second-city-will-be-hard-copy-trouble-miracles.
[103] Michael E. O'Hanlon and Elizabeth Pearce, "Once a Drug Den, Medellin is on a New Path," Brookings Institute, August 13, 2016, accessed April 26, 2018, https://www.brookings.edu/blog/order-from-chaos/2016/08/13/once-a-drug-den-medellin-is-on-a-new-path/.
[104] "Medellin's Comeback: The Trouble With Miracles," *The Economist*.
[105] O'Hanlon and Pearce, "Once a Drug Den, Medellin is on a New Path."

means of mitigating urban violence through addressing human development inequalities to achieve multidimensional benefits.[106]

In addition to addressing inequalities that produce systemic violence, social development policies that invest in the health, education, and infrastructure with the input of local residents provide communities with socioeconomic alternatives to violence and foster social trust by making residents feel represented and included in civic life.[107, 108] Moreover, public investment in the vitality of disadvantaged neighborhoods facilitate positive dialogue between local law enforcement agencies and members of the community. Trusting relationships between local police and resident populations are essential for reducing violence and enabling people to feel safe to participate in normal social, recreational, and civic elements of life that are a part of living in a free society and are essential for human development growth.[109]

However, trust between Baltimore City residents and the local police force is exceedingly low due to recent incidents of intensifying police brutality and widespread corruption. The gravity of these issues in the Baltimore Police Department are highlighted by the police killing of Freddie Gray in 2015 and the crimes committed against Baltimore City residents by officers of the Gun Trace Task Force, which included repeated racketeering and robberies dating back to at least 2014.[110] The causes of community distrust of the police gained national attention when a 2016 Department of Justice investigation found that the Baltimore Police Department "engages in a pattern or practice of conduct that violates the First and Fourth Amendments of the Constitution as well as federal anti-discrimination laws," including unjustified stops, searches and arrests; excessive use force, and retaliation against individuals engaging in free speech.[111]

Following the results of the investigation, the Department of Justice filed a complaint against the Baltimore Policy Department in the federal court system detailing these allegations, which the City and the Baltimore Police Department denied.[112] The two parties entered into a consent decree to resolve the issues raised by the Department of Justice investigation and avoid litigation against Baltimore City. The consent decree included mandated community oversight

[106] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 15.
[107] Ibid.
[108] O'Hanlon and Pearce, "Once a Drug Den, Medellin is on a New Path."
[109] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 125.
[110] Jessica Anderson, "Gun Trace Task Force Overview," *The Baltimore Sun*, 2018, accessed June 14, 2018, http://data.baltimoresun.com/news/gun-trace-overview/.
[111] Office of Public Affairs, "Justice Department Finds a Pattern of Civil Rights Violations by the Baltimore Police Department," United States Department of Justice, August 10, 2016, accessed April 25, 2018, https://www.justice.gov/opa/pr/justice-department-announces-findings-investigation-baltimore-police-department.
[112] United States of America v. Police Department of Baltimore City, 1:17, 1 (2017).

of police conduct, additional training programs for officers, appropriate management of allegations of employee misconduct, and appointment of an independent monitoring party to ensure constitutional policing.[113] While the provisions of the consent decree are intended to correct policy misconduct in Baltimore City in order to build trust between communities and local law enforcement, the ongoing trials and investigation of crimes committed by officers of Baltimore Police Department's Gun Trace Task Force have overshadowed the City's attempts at justice reform, and further cemented community distrust of the police.

In addition to essential, widespread justice reform, public projects that invest in the community well-being and economic vitality of Baltimore City's disconnected neighborhoods can help begin to rebuild relationships with local authorities that have been seriously damaged due to decades of misconduct. Ensuring human security and freedom from real and perceived community violence is an essential component of broader peace, stability, and economic opportunity.[114] Given the role of inequality in the perpetuation of violence, it is imperative that local policies that will address the disparities in human development across Baltimore City neighborhoods are pursued. The demonstrated success of other cities in reducing homicide rates by using targeted social and economic strategies indicates the benefit of addressing the issue of violence in Baltimore City from a human development perspective. By creating policies that focus on alleviating factors that suppress or limit human development in Baltimore City's lowest-performing neighborhoods, both inequalities and homicides in the city can be reduced.

7.0 Towards Inclusive Human Development for Baltimore City

The results of Baltimore City neighborhood HDI calculations indicate the need for change. Human development in Baltimore City is extremely segregated, with some of the City's residents experiencing conditions that are on par with the richest, most developed countries in the world, while others live in areas that have levels of human development would barely fall within the top 100 countries in the world. The deep inequalities in human development between Baltimore City neighborhoods can provide insight on the city's homicide epidemic, and ultimately restrict the potential growth in human development at the regional and national levels. However, the impacts of these inequalities can be mitigated if factors contributing to these disparities are addressed through targeted policymaking designed to promote more inclusive human development at the local level.

In the 2016 Human Development Report, the UNDP addressed the inequalities of human development growth at the international level. In doing so, the report emphasized several key issues that continue to restrict inclusive human development and provided policy

[113] United States of America v. Police Department of Baltimore City, 1:17, 1 (2017).
[114] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 37.

recommendations that would work to reduce the inequalities that currently exist.[115] These recommendations are guided by the UNDP's four-pronged policy strategy for inclusive human development, which requires: reaching people with the fewest resources through universal policies, ensuring appropriate provisions for populations with diverse needs, building community resilience, and using policies that empower those who have been left out.[116] The same process and policy strategy can be applied on the local level to identify opportunities for investment that will promote equal access to human development growth for all residents of Baltimore City.

Underlying factors that contribute to the disparities in the health, education, and standard of living components of Baltimore City neighborhood HDIs include unequal access to health resources, nutritious food, safe communities, positive educational environments, and economic opportunities. In an effort to address the needs of citizens in all of Baltimore City's neighborhoods and promote inclusive human development, RESI identified three priority areas:

1) Expanding access to a healthy life,
2) Matching school resources to student needs, and
3) Reducing inequality of economic opportunity.

7.1 Expanding Access to a Healthy Life

One of the most concerning disparities revealed by the HDIs for Baltimore City neighborhoods is the difference in the length of life that children born into different areas of Baltimore City can expect. Life expectancy in Baltimore City has a range of 20.2 years between the best and worst neighborhoods. In Cross-Country/Cheswolde, a neighborhood located in northwest Baltimore, children born in 2017 can expect to live until they are 87.1 years of age, a life that is 7.9 years longer than the national average of the United States.[117] By contrast, fewer than nine miles away on the central-east side of Baltimore City in Clifton-Berea, children born in 2017 can only expect a life that is 66.9 years long, a life expectancy similar to children born in Pakistan in the same year (66.4). [118]

Furthermore, eight of Baltimore City's ten lowest-performing neighborhoods in the HDI had health index scores that were the lowest of all three dimensions, meaning that the shortened life expectancies in these neighborhoods negatively impacted their HDI more than factors of education and income. The extreme disparities in life expectancy between Baltimore City neighborhoods and their impact on human development in Baltimore City's most disadvantaged neighborhoods signals the need for an exploration of unequal health and mortality factors that currently contribute to decreased life expectancy. In Baltimore City,

[115] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 37.
[116] Ibid, iii.
[117] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," 198-201.
[118] Ibid, 198.

disparities in life expectancy are perpetuated by unequal access to healthy food, the prevalence of related chronic health issues, and heightened infant mortality rates.

7.1.1 Access to Healthy Food

One of the most central elements of increasing life expectancy is ensuring that communities have the ability to live a healthy lifestyle on a daily basis. In order to live a healthy lifestyle, people need access to healthy food and physical activity. These components of a healthy lifestyle work to lengthen life expectancy by reducing obesity and decreasing risk of heart disease, stroke, diabetes, and other preventable and chronic health conditions.[119]

Obesity, and the health conditions that follow, are a prevalent issue across Baltimore City. In Baltimore City high schools, one in three students are overweight or obese, and less than half eat more than one serving of fruits or vegetables per day.[120] The rate of obesity and overweight students in Baltimore City high schools is 31 percent higher than the statewide rate for high school students in Maryland.[121] One of the factors currently contributing to the prevalence of obesity in Baltimore City, and particularly in the city's most disadvantaged neighborhoods, is external environmental factors that restrict residents' access to healthy food options. One of the ways to assess a community's access to a healthy lifestyle is to measure the prevalence of food deserts—areas where residents have limited accessibility to healthy food options. In order to be classified as a food desert, an area has to meet four definitional requirements:

- Distance to supermarket is more than a 0.25 mile walk,
- Median household income in the area is at or below 185 percent of the Federal Poverty Level,
- Over 30 percent of households in the area do not have a vehicle, and
- The average Healthy Food Availability Index Score for all food stores in the area is low.[122, 123]

Thus, not only do food deserts capture a lack of healthy food options in the area, they also identify areas in which the residents have limited ability to travel to obtain healthy food and

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[119] Center for Disease Control and Prevention, "Chronic Diseases: The Leading Causes of Death and Disability in the United States," U.S. Department of Health and Human Services, June 28, 2017, accessed April 18, 2018, https://www.cdc.gov/chronicdisease/overview/index.htm.

[120] Leana Wen, "Whitepaper: State of Health in Baltimore," Baltimore City Health Department (March 2017): 3, accessed April 18, 2018, https://health.baltimorecity.gov/sites/default/files/BCHD%202017%20White%20Paper_0.pdf.

[121] Johns Hopkins Urban Health Institute, "Health Disparities in Baltimore City: Is Disparity Destiny?" 9, accessed May 9, 2018, http://urbanhealth.jhu.edu/media/reports/healthdis_baltimore.pdf.

[122] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Greater Roland Park/Poplar Hill," 35, accessed April 18, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2022%20Greater%20Roland%20Park-Poplar%20Hill%20(rev%206-9-17).pdf.

[123] Healthy Food Index Availability Scores measure the quantity of whole and healthy foods available for purchase at a given store. Scores range from 0 to 28.5, and neighborhood blocks with average scores between 0 and 9.5 are considered potential food deserts.

money to invest in adequate nutrition, which further constrain their ability to source adequate nutrition and live healthy lifestyles.

Figure 8 below lists the percentage of land covered by a food desert for neighborhoods with the ten highest and lowest HDIs in Baltimore City. Please refer to Figure 15 in Appendix A for a comparison of HDIs and prevalence of food deserts across all Baltimore City neighborhoods.

Figure 8: Selected Neighborhood HDIs and Percent of Land Covered by a Food Desert, 2017

Neighborhood	HDI	Percent of Land Covered by Food Desert
Ten Highest-Performing Neighborhoods		
Greater Roland Park/Poplar Hill	0.979	0.0%
North Baltimore/Guilford/Homeland	0.959	0.4%
Cross-Country/Cheswolde	0.923	0.0%
Mount Washington/Coldspring	0.921	0.1%
Inner Harbor/Federal Hill	0.920	0.0%
Canton	0.907	0.0%
South Baltimore	0.898	37.7%
Fells Point	0.896	0.2%
Midtown	0.891	9.6%
Medfield/Hampden/Woodberry/Remington	0.859	0.1%
Ten Lowest-Performing Neighborhoods		
Brooklyn/Curtis Bay/Hawkins Point	0.750	2.8%
Sandtown-Winchester/Harlem Park	0.746	59.4%
Pimlico/Arlington/Hilltop	0.744	42.6%
Midway/Coldstream	0.736	23.9%
Southwest Baltimore	0.734	37.7%
Southern Park Heights	0.732	70.2%
Clifton-Berea	0.732	47.9%
Madison/East End	0.731	40.0%
Greenmount East	0.729	44.3%
Upton/Druid Heights	0.725	26.3%
Baltimore City	**0.821**	**12.5%**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Figure 8 above reveals a pattern indicating that neighborhoods with high percentages of land covered by a food desert almost consistently have lower levels of human development. For example, Southern Park Heights, which ranks 51st out of Baltimore City's 55 neighborhoods in the HDI, has 70.2 percent of land classified as a food desert.[124] By contrast, zero percent of land

[124] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Southern Park Heights," 20, accessed April 18, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2050%20Southern%20Park%20Heights%20(rev%206-9-17).pdf.

qualifies as a food desert in Cross-Country/Cheswolde, the neighborhood with the highest life expectancy in Baltimore City and the third-highest HDI.[125] Moreover, eight of the ten highest-performing neighborhoods in the HDI have less than one percent of land covered by a food desert, suggesting that accessibility of healthy food options is related to higher levels of health and human development. A map of food desert density across Baltimore City neighborhoods is displayed in Figure 21 in Appendix B.[126]

The absence of food deserts in high HDI neighborhoods is likely driven by the prevalence of grocery stores that carry healthy foods as well as household access to vehicles. Across the ten neighborhoods with the highest HDIs, approximately 83 percent of households have access to one or more vehicles, compared to just 52 percent of households in the ten neighborhoods with the lowest HDIs.[127] It is important to note that due the demographic composition of neighborhoods where food deserts are concentrated in Baltimore City, African-Americans and children are disproportionately affected by a lack of access to healthy food.[128]

The absence of accessible heathy food options in many Baltimore City neighborhoods contributes to poor nutritional habits, which can cause chronic and co-morbid health problems, and ultimately decreases life expectancy for community residents. Due to a lack of access to healthy food options, residents in food deserts often turn to convenience stores and local corner stores for groceries. These types of stores have been found to stock limited to no fresh produce and have extremely low Healthy Food Availability Index scores; meaning that shoppers at these locations do not have the opportunity to purchase foods that that are central components to maintaining a healthy diet and weight.[129] As a result, people who live in food deserts are at greater risk of diet-induced diseases, including heart disease, diabetes, and

[125] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Southern Park Heights," 20.

[126] A live map displaying food desert density across Baltimore City neighborhoods in 2017 can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.

[127] "B08201: Household Size by Vehicles Available, 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau, accessed June 15, 2018, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B08201&prodType=table.

[128] Center for a Livable Future, "1 in 4 Baltimore Residents Live in a Food Desert," Johns Hopkins Bloomberg School of Public Health, June 10, 2015, accessed May 9, 2018, https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/news-room/News-Releases/2015/1-In-4-Baltimore-Residents-Live-Food-Desert.html.

[129] Caitlin Misiaszek, Sarah Buzogany, and Holly Freishtat, "Baltimore City's Food Environment: 2018 Report," Johns Hopkins Center for a Livable Future (January 2018): 9, accessed April 19, 2018, https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/projects/bal-city-food-env/baltimore-food-environment-digital.pdf.

obesity, as well as higher mortality rates.[130] Therefore, the prevalence of food deserts across many of Baltimore City's most disadvantaged neighborhoods is likely one of the barriers that prevents neighborhoods with low HDIs from becoming healthier and achieving a higher level of human development.

Furthermore, poor nutrition related to food deserts can cause cyclical effects, as women with unhealthy weight during pregnancy have a higher probability of giving birth to newborns who are predisposed to obesity and subsequent chronic health conditions such as heart disease or diabetes.[131] The Baltimore City Health Department reports the percentage of mothers who had a Body Mass Index (BMI) equal to or greater than 30 at the time of their child's birth as one measure of maternal health during pregnancy. This benchmark is used because BMIs equal to or exceeding 30 suggest obesity.[132] Overall, Baltimore City neighborhoods that have low percentages of land covered by a food desert typically have lower percentages of mothers with BMIs that indicate obesity. In addition, those neighborhoods with reduced prevalence of food deserts have lower heart disease mortality rates, which is one of the chronic health disorders associated with obesity. By contrast, neighborhoods with higher percentages of land classified as a food desert have elevated prevalence of maternal obesity and higher heart disease mortality rates.

Figure 9 below indicates these selected health statistics for Baltimore City neighborhoods that have the ten highest and lowest HDIs. Please refer to Figure 16 in Appendix A for a detailed table including health indicators for all Baltimore City neighborhoods.

[130] Amanda Behrens Buczynski, Holly Freishtat, and Sarah Buzogany, "Mapping Baltimore City's Food Environment: 2015 Report," Johns Hopkins Center for a Livable Future (June 2015): 16-25, accessed April 19, 2018, https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/research/clf_reports/Baltimore-Food-Environment-Report-2015-1.pdf.
[131] "Preventing Obesity," Johns Hopkins Medicine, February 11, 2015, accessed April 18, 2018, https://www.hopkinsmedicine.org/news/articles/Preventing-Obesity.
[132] Centers for Disease Control and Prevention, "About Adult BMI," United States Department of Health and Human Services, August 29, 2017, accessed April 18, 2018, https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html.

Figure 9: Health Indicators by HDI for Selected Neighborhoods, 2016

Neighborhood	HDI	% of Land Covered by Food Desert	% of Mothers with BMI ≥30	Heart Disease Mortality Rate (per 10,000, residents per year)
Ten Highest-Performing Neighborhoods				
Greater Roland Park/Poplar Hill	0.979	0.0%	9.5%	13.6
North Baltimore/Guilford/Homeland	0.959	0.4%	11.1%	17.5
Cross-Country/Cheswolde	0.923	0.0%	15.3%	11.5
Mount Washington/Coldspring	0.921	0.1%	11.8%	24.0
Inner Harbor/Federal Hill	0.920	0.0%	10.7%	25.7
Canton	0.907	0.0%	8.3%	19.9
South Baltimore	0.898	37.7%	34.5%	27.2
Fells Point	0.896	0.2%	11.3%	22.5
Midtown	0.891	9.6%	20.0%	35.8
Medfield/Hampden/Woodberry/Remington	0.859	0.1%	15.4%	31.5
Ten Lowest-Performing Neighborhoods				
Brooklyn/Curtis Bay/Hawkins Point	0.750	2.8%	31.5%	36.1
Sandtown-Winchester/Harlem Park	0.746	59.4%	36.8%	31.2
Pimlico/Arlington/Hilltop	0.744	42.6%	38.8%	34.4
Midway/Coldstream	0.736	23.9%	39.2%	32.3
Southwest Baltimore	0.734	37.7%	34.5%	27.2
Southern Park Heights	0.732	70.2%	39.8%	29.4
Clifton-Berea	0.732	47.9%	41.8%	27.7
Madison/East End	0.731	40.0%	38.2%	41.2
Greenmount East	0.729	44.3%	39.5%	42.3
Upton/Druid Heights	0.725	26.3%	38.1%	39.1
Baltimore City	**0.821**	**12.5%**	**30.5%**	**24.4**

Sources: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

The interaction between human development and community health indicators such as food deserts, obesity, and heart disease mortality in Baltimore City neighborhoods demonstrates the centrality of accessible and affordable nutrition and health resources in creating inclusive human development. The prevalence of food deserts and chronic health issues in Baltimore City neighborhoods shows how many Baltimore City residents are disconnected from nutritious food options due to their location, income, and lack of transportation, and as a result, do not have an equal opportunity to live a healthy lifestyle. This disconnection lowers maternal health and causes trans-generational health impacts that reinforce barriers to improving community health over time. Policies that aim to increase access to healthy food in neighborhoods densely covered by food deserts and provide public education about nutrition are required to create healthier communities, increase life expectancy, and raise human development in disadvantaged neighborhoods.

The Baltimore City Health Department recognizes that addressing the scarcity of healthy food in Baltimore City neighborhoods is a priority for creating healthier communities and providing a more equitable quality of life for all residents. Over the last five years, the Baltimore City Health Department has launched several programs under the umbrella of the Baltimarket initiatives to address these issues.[133] One of these programs is the Healthy Corner Stores Program, which works to reduce obesity and related health problems by changing the retail food environment in Baltimore City neighborhoods. Since 2014, this program has helped 25 corner stores to stock healthier food options, and with a newly awarded grant of $150,000, the program hopes to increase its reach by 40 stores by 2019.[134] Working in tandem with the Healthy Corner Stores Program is the Neighborhood Food Advocates Initiative, which educates and engages residents of communities with food deserts to empower local leaders to advocate for community-based solutions to issues of food insecurity and food access.[135] Finally, Baltimarket's flagship initiative, the Virtual Supermarket Program, works to connect people living in food deserts to healthy food options outside of their community.[136]

The Virtual Supermarket Program is an innovative strategy which serves to connect low-income residents of Baltimore City with limited or no access to transportation the opportunity to purchase nutritious groceries. Through the Virtual Supermarket Program, residents are able to place an online order at a ShopRite grocery store and pick up their order at one of fourteen designated, central locations in the city.[137] The Virtual Supermarket pick up locations are selected to ensure accessibility for those that are most disconnected to healthy food options, and are often located in senior residences or public housing communities.[138] Baltimore is the first city in the United States to use online ordering and delivery systems to address urban food deserts and has won several awards for the success and positive impacts of the Virtual Supermarket Program.[139] To date, the Virtual Supermarket Program in Baltimore City has delivered over $500,000 worth of groceries to over 1,200 customers. [140]

Speaking to the efficacy of the program, a recent study conducted by researchers from the University of Michigan and Michigan State University in collaboration with the Baltimore City Health Department evaluated the Virtual Supermarket Program as a mechanism for promoting healthy eating among program participants. The study, which included a survey of nearly 100

[133] "Baltimarket," Baltimore City Health Department, accessed June 5, 2018, https://health.baltimorecity.gov/programs/baltimarket.
[134] Mona Rock and Perry Myers, "Baltimore City Health Department Announces New Funding to Improve Healthy Food Access," July 19th, 2017, accessed June 5, 2018, https://health.baltimorecity.gov/news/press-releases/2017-07-19-baltimore-city-health-department-announces-new-funding-improve.
[135] "Baltimarket," Baltimore City Health Department.
[136] Ibid.
[137] Wen, "White Paper: State of Health in Baltimore," 17.
[138] Baltimore City Health Department, "Baltimore City 2018 Food Environment Brief," 5, 2018, accessed June 5, 2018, https://planning.baltimorecity.gov/sites/default/files/City%20Map%20Brief%20011218.pdf.
[139] "Baltimarket," Baltimore City Health Department.
[140] Wen, "White Paper: State of Health in Baltimore," 17.

customers who use the Virtual Supermarket Program in Baltimore, found that 92.5 percent of respondents felt that the program made it easier for them to eat healthier.[141] Of these respondents, nearly 78 percent attributed this to increased healthy food availability though the program, while over 65 percent indicated that it was easier to purchase healthy food because they no longer needed to arrange transportation.[142] Nearly 50 percent of customers surveyed reported that they purchase more fruits and vegetables now through the Virtual Supermarket Program than they did before, and over 40 percent reported a decrease in the quantity of snacks and desserts they purchase. [143] These findings highlight the positive impacts that the Baltimarket Virtual Supermarket Program has created thus far on creating healthier communities through food access.

While the Virtual Supermarket Program has been very successful to date, there are several opportunities for program expansion so that it can create an even larger impact. One of these opportunities it to add pick up locations in areas of the city that have low levels of human development and high percentages of land as a food desert. Currently, the Baltimore City's Virtual Supermarkets are located in the following neighborhoods:

- Brooklyn/Curtis Bay/Hawkins Point,
- Cherry Hill,
- Forest Park/Walbrooke,
- Howard Park/West Arlington,
- Inner Harbor/Federal Hill,
- Midtown,
- Mount Washington/Coldspring,
- Sandtown-Winchester/Harlem Park, and
- Washington Village/Pigtown.[144]

These locations undoubtedly provide increased food access to underserved populations in need, and help to alleviate the location and transportation factors that contribute to poor nutrition in Baltimore City. However, only two of the neighborhoods where the Baltimore City Health Department lists Virtual Supermarket sites are among the ten lowest neighborhoods in the HDI. Expanding the Virtual Supermarket Program by establishing locations in neighborhoods with low levels of human development and a high prevalence of food deserts, such as Southern Park Heights, Greenmount East, and Clifton-Berea would allow for these kinds of food access programs to be used as a tool for creating inclusive human development in Baltimore City.

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[141] Pooja Lagisetty, et al., "A Multi-Stakeholder Evaluation of the Baltimore City Virtual Supermarket Program," 4, BMC Public Health, 2017, DOI 10.1186/s12889-017-4864-9, accessed June 5, 2018, https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-017-4864-9.
[142] Ibid.
[143] Ibid.
[144] Misiaszek, Buzogany, and Freishtat, "Baltimore City's Food Environment: 2018 Report,"30.

Furthermore, the current Virtual Supermarket pick up locations in Baltimore City predominately serve senior, disabled and public housing areas.[145] To build from this foundation, Virtual Supermarkets could also be established in areas that specifically serve children and young families by locating in or near public schools. Baltimore City's 2018 Food Environment Profile reports that almost 38,000 children in Baltimore City live in a food desert.[146] In addition, access to nutrition is extremely important for early childhood development, as a lack of proper nutrition in young children perpetuates long-term health and economic disparities.[147] By choosing to build upon the present success of the Virtual Supermarket Program by adding locations in neighborhoods with low HDIs and targeting areas that are likely to have the greatest impact on childhood nutrition, Baltimore City can work to create multidimensional impacts through expanding food access programs that are already operating successfully in the city.

7.1.2 Infant Mortality

In addition to food access, infant mortality is a vital indicator of a community's health resources because it is largely preventable through the provision of prenatal care to women in their first trimester and also through ensuring adequate maternal education.[148] As an indicator of community health environments, infant mortality measures the number of babies under one year of age that died per 1,000 live births in a given year.[149] Despite its preventability, high rates of infant mortality have been a persistent issue for Baltimore City. In 2009, Baltimore City had the fourth highest infant mortality rate across cities in the United States at a rate of 13.5 deaths per 1,000 live births.[150] In response, Baltimore City has implemented the B'more for Healthy Babies program; a public-private partnership that works to improve maternal health and educate new mothers on appropriate and safe infant care.[151] Through the dedicated work of this program, Baltimore City experienced a record low infant mortality rate of 8.4 deaths per 1,000 live births in 2015.[152] Unfortunately, since 2015 the citywide infant mortality rate has risen and was recorded at 10.4 deaths per 1,000 live births in 2017. This rate is almost double

[145] Baltimore City Health Department, "Baltimore City 2018 Food Environment Brief," 5.
[146] Ibid.
[147] Kristen M. Hurley, Aisha K. Yousafzai, and Florencia Lopez-Boo, "Early Child Development and Nutrition: A Review of the Benefits and Challenges of Implementing Integrated Interventions," 357, *Advances in Nutrition* 7, no. 2, March 2016, accessed June 5, 2018, https://doi.org/10.3945/an.115.010363.
[148] Baltimore City Health Department, "Baltimore City 2008 Neighborhood Health Profile: Clifton-Berea," 6, accessed April 17, 2018, http://health.baltimorecity.gov/sites/default/files/10%20Clifton%20%282008%29.pdf.
[149] Ibid, 24.
[150] "Infant Mortality Statistics and Research," B'more for Healthy Babies, accessed June 8, 2018, http://healthybabiesbaltimore.com/about-bhb/infant-mortality-statistics-and-research.
[151] "Baltimore City Experiences Record Low Infant Mortality Rate in 2015," Baltimore City Health Department, October 15, 2016, accessed April 17, 2018, https://health.baltimorecity.gov/news/press-releases/2016-10-05-baltimore-city-experiences-record-low-infant-mortality-rate-2015.
[152] Ibid.

the United States' national average, which was approximately 5.8 deaths per 1,000 live births in 2017.[153, 154]

Neighborhood-specific analysis indicates that infant mortality is related to human development and disproportionately effects neighborhoods with the lowest HDIs. Figure 10 below compares the infant mortality rates of the Baltimore City neighborhoods with the ten highest and ten lowest HDIs. Figure 17 located in Appendix A displays the infant mortality rates by level of human development for all neighborhoods in Baltimore City.

Figure 10: Infant Mortality Rates by HDI for Selected Neighborhoods, 2016

Neighborhood	HDI	Infant Mortality Rate (Deaths per 1,000 live births)
Ten Highest-Performing Neighborhoods		
Greater Roland Park/Poplar Hill	0.979	3.6
North Baltimore/Guilford/Homeland	0.959	1.5
Cross-Country/Cheswolde	0.923	5.4
Mount Washington/Coldspring	0.921	0.0
Inner Harbor/Federal Hill	0.920	3.3
Canton	0.907	3.2
South Baltimore	0.898	13.9
Fells Point	0.896	5.7
Midtown	0.891	9.7
Medfield/Hampden/Woodberry/Remington	0.859	6.9
Ten Lowest-Performing Neighborhoods		
Brooklyn/Curtis Bay/Hawkins Point	0.750	9.0
Sandtown-Winchester/Harlem Park	0.746	10.1
Pimlico/Arlington/Hilltop	0.744	20.0
Midway/Coldstream	0.736	13.0
Southwest Baltimore	0.734	13.9
Southern Park Heights	0.732	15.5
Clifton-Berea	0.732	14.8
Madison/East End	0.731	12.1
Greenmount East	0.729	16.2
Upton/Druid Heights	0.725	10.0
Baltimore City	**0.821**	**10.4**

Sources: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

[153] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Clifton-Berea," 24.
[154] "Country Comparisons: Infant Mortality Rate," CIA World Factbook, 2017, accessed April 17, 2018, https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html.

As shown in Figure 10, the neighborhood of Pimlico/Arlington/Hilltop, which is among the lowest-performing neighborhoods in the HDI, has the highest infant mortality rate in Baltimore City, at 20 deaths per 1,000 live births.[155] This rate of infant mortality is higher than national averages in countries with developing economies recently emerging from civil conflicts, such as Libya (10.8), Colombia (13.6), Syria (14.8), and Algeria (19.6).[156] By contrast, Mt. Washington/Coldspring, which borders Pimlico/Arlington/Hilltop, has one of the highest HDIs in Baltimore City and recorded an infant mortality rate of 0 in 2017.[157] The stark disparity between the infant mortality rates of these two neighborhoods shows that while Baltimore City has the health resources necessary to reduce and even eliminate infant deaths, access to these essential resources is extremely unequal.

The mission of B'more for Healthy Babies is to address this inequality of prenatal and maternal healthcare resources by providing essential information, educational materials, and services to pregnant women and new mothers in Baltimore City. Some of the program's main initiatives include reducing infant deaths during sleep by educating new mothers about safe sleep habits for infants, as well as promoting maternal physical and mental health post-pregnancy through dietary counselling, exercise classes, and home visitation programs.[158] In addition, B'more for Healthy Babies works to increase access to prenatal care by connecting pregnant women in Baltimore City to HealthCare Access Maryland, which helps women to find adequate prenatal and family health care, even if they do not have health insurance.[159] Through these initiatives, the program has been a driving force in reducing the city's overall rates of infant mortality.[160]

While the 2017 citywide infant mortality rate is lower than the rate recorded in 2009, the increases in infant mortality over the last two years are concerning and cause for deeper analysis. By comparing neighborhood-specific infant mortality rates reported by the Baltimore City Health Department in 2008 to those reported in 2017, it appears as though benefits from public programs implemented to reduce infant mortality, such as B'more for Healthy Babies, have not reached all neighborhoods equally. Seven of the ten neighborhoods with the lowest HDIs have experienced drops in infant mortality rates between 2008 and 2017, with the largest improvement taking place in Sandtown-Winchester/Harlem Park neighborhood, which

[155] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Pimlico/Arlington/Hilltop," 25, accessed April 3, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2045%20Pimlico-Arlington-Hilltop%20(rev%206-9-17).pdf.
[156] "Country Comparisons: Infant Mortality Rate," CIA World Factbook.
[157] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Mount Washington/Coldspring," 25, accessed April 3, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2038%20Mt%20Washington-Coldspring%20(rev%206-9-17).pdf.
[158] "Baltimore City Experiences Record Low Infant Mortality Rate in 2015," Baltimore City Health Department.
[159] "Prenatal Care," B'more for Healthy Babies, accessed June 8, 2018, http://www.healthybabiesbaltimore.com/parents-and-caregivers/babycare-center.
[160] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Clifton-Berea," 25.

decreased its infant mortality rate from 18.7 in 2008 to 10.1 in 2017.[161, 162] However, the neighborhoods of Pimlico/Arlington/Hilltop, Southern Park Heights, and Clifton-Berea have each experienced increases in infant mortality rates between 2008 and 2017. Most notably, Pimlico/Arlington/Hilltop had the greatest increase in infant mortality, from a rate of 13.7 in 2008 to 20.0 in 2017. [163, 164]

While prenatal and maternal health education and services in Baltimore City have certainly improved since the implementation of B'more for Healthy Babies, the increases in infant mortality in several neighborhoods over this time signal the need for additional attention in these areas to ensure that access to essential health resources is available to those who need it most. By maintaining its current operations and focusing on increasing engagement with pregnant women and new mothers in these select neighborhoods, B'more for Healthy Babies can continue to create immense positive impacts on maternal and infant health in Baltimore City, and work to create inclusive human development growth.

7.2 Matching School Resources to Student Needs

The HDI dimension that measures levels of education or "knowledge" is formed by two elements: mean years of schooling and expected years of schooling. The purpose of including both of these factors is to accurately reflect the current educational levels of the adult population as well as the anticipated educational attainment of future generations. Mean years of schooling in Baltimore City has a range of 6.2 years, highlighting the variation in the educational attainment of adults in different neighborhoods. In Greater Roland Park, the adult population has an average of 17.2 years of education, which equates to a bachelor's degree plus a little more than one year of additional higher education or professional training. By contrast, the adult population in Southwest Baltimore has an average of just 11 years of schooling, equating to a grade eleven education.

Expected years of schooling across school-aged populations in Baltimore City show similar disparities, despite being consistently higher than mean years of schooling in each neighborhood. In North Baltimore/Guilford/Homeland, school-aged children can expect to achieve 19.6 years of education, which falls midway between a Master's degree and a Doctoral degree. By contrast, children in Southern park heights can only expect 12.8 years of schooling; equivalent to less than one year of college. Thus, the range in expected years of schooling between Baltimore City neighborhoods is 6.8 years—highlighting an interesting trend in the

[161] Baltimore City Health Department, "Sandtown-Winchester/Harlem Park Health Profile 2008," 6, accessed June 8, 2018, http://health.baltimorecity.gov/sites/default/files/47%20Sandtown%20%282008%29.pdf.
[162] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Sandtown-Winchester/Harlem Park," 24, accessed April 3, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2047%20Sandtown-Winchester-Harlem%20Park%20(rev%206-9-17).pdf.
[163] Baltimore City Health Department, "Pimlico/Arlington/Hilltop Health Profile 2008," 6, accessed June 8, 2018, http://health.baltimorecity.gov/sites/default/files/45%20Pimlico%20%282008%29.pdf.
[164] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Pimlico/Arlington/Hilltop," 24.

disparities that exist between current and projected educational attainment. The range in expected years of schooling between Baltimore City neighborhoods is greater than neighborhood range in mean years of schooling. This indicates that while the level of education that students in neighborhoods like Southern Park Heights can expect to receive is improving compared to the adults in their neighborhood before them, students are becoming worse off relative to the level of education that children in the neighborhoods with the highest levels of expected years of schooling will receive.

The increase in expected years of education compared to mean years of education is largely due to increased enrollment rates in primary and secondary education, which have raised the number of expected years schooling for Baltimore City residents to a point where children entering school in all neighborhoods can expect to achieve higher levels of education than previous generations in their neighborhood. However, as illustrated by the dispersion of mean years of schooling and expected years of schooling across neighborhoods, disparities in education remain persistent and are perhaps increasing. Relative to school aged children in prosperous neighborhoods, children in Baltimore City's most disadvantaged neighborhoods are still falling significantly behind with regard to projected educational attainment.

Further analysis on the issue of enrollment reveals that unsurprisingly, in neighborhoods with low levels of human development, school enrolment rates substantially decrease between the ages of 17 to 20, during which students would typically be graduating high school and entering (non-compulsory) college or university. By comparison, enrollment rates at this age bracket decrease far less for students living in for neighborhoods with high levels of human development.[165] These trends indicate that there are increased barriers to attending and completing post-secondary education for students in low HDI neighborhoods that are not as prominent in neighborhoods with high HDIs. Aside from personal preference and choice to pursue higher education, barriers for disadvantaged students can include a wide range of factors such as high tuition costs, inadequate guidance through application and admissions processes, disadvantages in competitiveness due to a lack of access to academic resources during high school, discriminatory admissions procedures, and perceptions of a reduced return on investment in education for students from low-income backgrounds.[166, 167] Reducing the barriers to higher education indicated by the disparities in the education dimension of the HDI is important for inclusive development, as educational attainment is closely related to other factors of human development including income and health. A detailed discussion of the barriers to higher education that disadvantaged students face, and the impacts of these

[165] "B14003: School Enrollment: 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau.
[166] Melissa S. Kearney and Phillip B. Levine, "Income Inequality, Social Mobility, and the Decision to Drop Out of High School," *Brookings Papers on Economic Activity* (Spring 2016): 345, accessed May 17, 2018, http://www.jstor.org/stable/43869027.
[167] Jonathan D. Glater, "Foreword: Barriers to Higher Education," *UC Irvine Law Review* 7, no.1 (September 2017): 2-7, accessed June 15, 2018, http://www.law.uci.edu/lawreview/vol7/no1/Online_Glater.pdf.

barriers on economic opportunity and human development is included in Section 7.3.

7.2.1 Specific Needs of Baltimore City School Students for Educational Success

In addition to expanding participation in education, the quality and suitability of public education in Baltimore City is equally as important, as effective education systems that meet the specific needs of students can act as a positive force of empowerment, income mobility and human development growth. In general, children in Baltimore City are among the most disadvantaged in the State of Maryland and most in need of additional support resources.[168] While ensuring that disadvantaged students have access to physical needs for academic success, such as textbooks, computers, and food, it is also important to provide appropriate levels of support for students' mental and emotional needs. Due to the low standards of living, community health conditions, and high levels of neighborhood violence that affect many Baltimore City students, it is important that public schools recognize the specific needs of their student populations in order to provide an effective educational environment.

One of the most common quantitative measures of the mental and emotional challenges that children face are Adverse Childhood Experience (ACE) estimates. ACE tests gauge childhood exposure to a list of ten deeply traumatic family and community experiences including: domestic violence, living with someone who has substance abuse problems, the death of a parent, being a victim or witness of neighborhood violence, sexual abuse, and neglect.[169] The Baltimore City Health Department reports that approximately 30 percent of children in Baltimore City have experienced two or more ACEs.[170] By comparison, only 19.4 percent of children across the state of Maryland have ACE scores of two and above.[171] Among specific ACEs, Baltimore City has a particularly high percentage of children who have either been a victim or witness of neighborhood violence, with more than one in eight children having exposure to this experience. [172] Furthermore, studies have shown that children in low-income households have higher exposure to ACEs, suggesting that within Baltimore City, children from low-income and disadvantaged neighborhoods likely account for a disproportionate share of ACEs across the city.[173]

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[168] "Free and Reduced Price Meal Statistics," Maryland State Department of Education, 2018, accessed June 6, 2018, http://www.marylandpublicschools.org/programs/Pages/School-Community-Nutrition/FreeReducedPriceMealStatistics.aspx.

[169] "Adverse Childhood Experience (ACE) Questionnaire," National Council of Juvenile and Family Court Judges, accessed May 8, 2018, https://www.ncjfcj.org/sites/default/files/Finding%20Your%20ACE%20Score.pdf.

[170] Wen, "Whitepaper: State of Health in Baltimore," 3.

[171] "Adverse Childhood Experiences Among Baltimore and Maryland's Children," Data Resource Center for Child and Adolescent Health, accessed April 20, 2018, http://childhealthdata.org/docs/default-source/local-area-synthetic-estimates/adverse-childhood-experiences-among-baltimore-maryland-s-children.pdf?sfvrsn=b43903fd_4.

[172] Ibid.

[173] Roy Wade Jr., et al., "Adverse Childhood Experiences of Low-Income Urban Youth," *Pediatrics* 134, no. 1 (July 2014): 14, accessed May 8, 2018, http://pediatrics.aappublications.org/content/pediatrics/134/1/e13.full.pdf.

All ACEs have demonstrated life-long impacts on children's mental and physical health. Children with multiple ACEs are at greater risk for depression, obesity, drug and alcohol abuse, and other chronic health conditions in adulthood.[174] In addition, students with ACEs are less engaged in school, more likely to repeat grades, and generally struggle with academic achievement.[175] As a result of these negative impacts, an Expert Panel for the United Nation's World Health Organization declared ACEs to be a primary barrier to development worldwide, as they are often then cause of long-term social, economic, and health issues that suppress community wellbeing.[176]

Nevertheless, systems that support children's emotional and mental health and encourage the development of positive relationships with trusted adults can help children to manage ACEs.[177] However, because ACEs relate almost exclusively to family and community environments, schools are often left as one of the main forums for cultivating these relationships and helping children to develop resilience. As a result of the prevalence of children with elevated ACE scores in Baltimore City, and particularly those impacted by neighborhood violence, it is essential that Baltimore City Public Schools play a role in fostering positive relationships and child resilience in order to ensure meaningful community development. Designing public education systems in a manner that meets the specific needs of all Baltimore City children and empowers students to build resilience is an essential component of mitigating life-long health and behavioral impacts of ACEs and promoting inclusive human development across all Baltimore City neighborhoods.

Considering that Baltimore City Public Schools serves a student population with a high prevalence of ACEs, there is an inadequate investment in mental health resources and dedication to building positive relationships in Baltimore City's schools. For example, only 10 of 38 high schools in Baltimore City have an equivalent of one full-time psychologist.[178] The remaining 28 high schools employ less than one full-time psychologist to address the mental health needs of their entire student body. Excel Academy in Southwest Baltimore, where almost 70 percent of the school's 542 students qualify as low-income, only has the resources to employ a psychologist for roughly 16 hours per week, or 40 percent of a full-time position.[179] In addition, the results of Baltimore City Public School's yearly survey found that there was considerable concern amongst teachers, students, and parents that schools are not promoting

[174] "Adverse Childhood Experiences Among Baltimore and Maryland's Children," Data Resource Center for Child and Adolescent Health.
[175] Ibid.
[176] Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," 11.
[177] "Resilience to ACEs," Minnesota Department of Health, accessed May 8, 2018, http://www.health.state.mn.us/divs/cfh/program/ace/resilience.cfm.
[178] "School Budgets," Baltimore City Public Schools, 2018, accessed April 23, 2018, http://www.baltimorecityschools.org/Page/30318.
[179] Baltimore City Public Schools, "School 0178 Budget Snapshot for FY18," accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/domain/8801/pdf/2018/0178.pdf.

respectful relationships. Responses from this survey placed on a scale from 1 (low) to 100 (high) revealed that ten high schools in the Baltimore City Public School System had respectful relationship indexes of less than 50, ranging as low as 24.8 at New Era Academy in Cherry Hill.[180]

Furthermore, many public schools in Baltimore City do not consistently provide learning environments that are conducive to the academic success of students, especially those with exposure to ACEs. Another dimension captured by the Baltimore City Public Schools' yearly survey is a physical security index, which measures the degree to which students and staff feel safe in school buildings, that there are no concerns about students fighting or bringing weapons to school, and that parents feel comfortable sending their children to school knowing they will be safe.[181] The average physical security rating across all high schools in the Baltimore City Public Schools system was 71.5, however this includes indexes ranging as low as 27.5 at the Friendship Academy of Engineering and Technology, and as high as 100 at George W. F. McMechan High.[182, 183] The average physical security rating for public high schools located in the ten highest human development neighborhoods in Baltimore City is 75.2, whereas high schools located in the ten neighborhoods with the lowest levels of human development have an average physical security index of 65.5. [184] For all students, and particularly those with elevated ACE scores, attending school in an environment that feels insecure will detract from their ability to learn, build resilience, and develop healthy ways to cope with past traumatic experiences.

Not only is it difficult for students to learn in environments that feel unsafe, but the regularity with which students attend school may be impacted by how safe they feel while they are there. While the education component of HDI captures educational attainment and enrollment rates, there is more to take into account when assessing the education that students receive. Attendance and absence rates, which are a widespread issue across public schools in Baltimore City, can be used as an indication of how engaged students are with their education. Baltimore

[180] Baltimore City Public Schools, "New Era Academy: School Profile Spring 2018," 2, accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/SchoolProfiles/422-NewEra.pdf.
[181] Baltimore City Public Schools "Baltimore Polytechnic Institute: School Profile Spring 2018," 2, accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/SchoolProfiles/403-BaltimorePolytechnic.pdf.
[182] Baltimore City Public Schools "Friendship Academy of Engineering and Technology: School Profile Spring 2018," 2, accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/SchoolProfiles/339-Friendship.pdf.
[183] Baltimore City Public Schools "George W. F. McMechen: School Profile Spring 2018," 2, accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/SchoolProfiles/177-GeorgeWFMcMechen.pdf.
[184] "School Profiles," Baltimore City Public Schools, 2018, accessed April 23, 2018, http://www.baltimorecityschools.org/Page/30346.

City Public Schools reports the percentage of students that are chronically absent, defined as missing more than 20 days of school.[185] Across all Baltimore City public high schools, an average of 52 percent of students are classified as chronically absent. In one of the most extreme cases, chronic absenteeism in the 2016-2017 school year was 86.9 percent of students at Renaissance Academy; a high school located in the Upton/Druid Heights neighborhood with a physical security index of 51.[186] Analysis of both chronic absences and physical security suggests that there is an inverse relationship between these variables. All but one school with a physical security index above 85 had less than 35 percent of students who were chronically absent. By contrast, all but one school with a physical security index less than 55 reported that over half of their students that were chronically absent, with some rates ranging as high as 86.9 percent.[187]

Education has been long heralded as a mechanism for raising people out of poverty, increasing living standards, and promoting economic growth.[188] However, in order to promote inclusive development, school environments need to be adaptable to the specific needs of the students that they serve. In Baltimore City, children experience deeply traumatic events within their families and communities at rates much higher than state and national averages. As a result, children in Baltimore have different needs for academic achievement when they go to school. Creating school environments in which students feel safe and have access to the appropriate resources empowers children to become thriving members of the community in the future and helps to mitigate negative health and behavioral impacts that are associated with ACEs. For Baltimore City Public Schools to meet these objectives, there must be a focus on increasing access to mental healthcare services and improving student security at school.

To create a more positive educational environment for students in Baltimore City Public Schools, there must be a focus on increasing the accessibility of mental health resources. The National Association of School Psychologists asserts that children have an increased ability to learn when they feel safe and respected in their school environment, have a positive trusting relationship with an adult at school, understand academic expectations, and have access to mental health resources.[189] In addition to helping children build resilience to trauma and

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[185] "Chronic Absence and Truancy," Baltimore City Public Schools, 2018, accessed April 23, 2018, http://www.baltimorecityschools.org/Page/27088.
[186] Baltimore City Public Schools, "Renaissance Academy: School Profile Spring 2018," 2, accessed April 23, 2018, http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/SchoolProfiles/433-Renaissance.pdf.
[187] "School Profiles," Baltimore City Public Schools, 2018, accessed April 23, 2018, http://www.baltimorecityschools.org/Page/30346.
[188] "Millions Could Escape Poverty by Finishing Secondary Education, says UN Cultural Agency," United Nations, June 22, 2017, accessed April 23, 2018, https://news.un.org/en/story/2017/06/560162-millions-could-escape-poverty-finishing-secondary-education-says-un-cultural.
[189] National Association of Schools Psychologists, "Rethinking School Safety: Communities and Schools Working Together," 1, accessed June 26, 2018, https://www.nasponline.org/Documents/Research%20and%20Policy/Advocacy%20Resources/Rethinking_School_Safety_Key_Message.pdf.

providing a wide range of developmental benefits, the availability of mental health resources in schools has been found to improve school climate and reduce disciplinary action, suspensions, and grade retentions.[190] By emphasizing the importance of mental health, Baltimore City Public Schools can create safer, better connected learning environments and give their students the resources they need to achieve their highest academic potential.

Fortunately, many of the resources and programs that are needed to make Baltimore City Public Schools safer and more equitable learning environments for all students already exist. Several local organizations have taken an active role in meeting this need through the provision of mental health resources in Baltimore City public schools, such as the nonprofit organization Behavioral Health Systems Baltimore. Since the creation of the Behavioral Health Systems Baltimore (BHSB) in 2013, the organization has worked to improve school-based behavioral health services. The programs administered by BHSB include Early Childhood Mental Health, Expanded School Mental Health, and Substances Use Disorder Treatment, through which BHSB connects professional clinicians to YMCA Headstart sites and public elementary, middle, and high schools to work with students on issues relating to mental and emotional wellbeing, managing the effects of trauma, and substance abuse.[191]

In particular, BHSB's Expanded School Mental Health (ESMH) program provides treatment and counselling services to approximately 5,000 youth in Baltimore City Public Schools annually. The program receives funding of approximately $2.7 million per year and currently has partnerships with 120 of Baltimore City's 176 public schools.[192] While this program certainly expands access to mental health resources, there are still financial barriers to participation as some of the costs of services provided by the program are covered by Medicaid, others are not. [193] For some low-income students at risk, this creates a barrier to accessing the full range of essential mental health services that the program provides. With increased funding, the BHSB could help to offset the costs of services currently not covered by Medicaid, and the immensely impactful work of the ESMH program in Baltimore City Public Schools could have the added benefit of reaching even more children and youth in need.

In addition to providing mental health services and substance abuse treatment in schools, the BHSB works with youth in distressed Baltimore City neighborhoods to prevent negative impacts associated with ACEs.[194] Specifically, BHSB employs community outreach workers to help empower children with ACEs in the Sandtown-Winchester/Harlem Park neighborhood through

[190] National Association of Schools Psychologists, "Rethinking School Safety: Communities and Schools Working Together," 2.
[191] "Behavioral Health at School," Behavioral Health System Baltimore, accessed June 6, 2018, http://www.bhsbaltimore.org/behavioral-health-school/#other.
[192] Ibid.
[193] Ibid.
[194] Behavioral Health Systems Baltimore, "Impact Report 2016," 17, accessed June 6, 2018, http://www.bhsbaltimore.org/wp-content/uploads/2017/11/BHSB-Annual-Report_2017-1.pdf.

a program called U-TURNS. This program is administered at the Penn North Kids Safe Zone and uses structured, private conversations between children and community outreach mentors to develop skills such as emotional management and problem-solving.[195] Ultimately, building these positive relationships with trusted mentors helps children to develop the necessary tools to overcome the traumatic experiences that they have faced.[196] The importance of community initiatives such as these cannot be understated in the mission to circumvent the potential life-long negative impacts of ACEs. To expand the benefits of this program to children across Baltimore City, public schools could adopt the principles of the U-TURNS program and incorporate them as part of everyday lessons and interactions between teachers and students. By bridging community initiatives and school resources to support children with ACEs in Baltimore City Public Schools can play a role in mitigating the barriers to educational success associated with traumatic childhood experiences that many of their students currently face.

The work that the BHSB currently engages in to provide mental health and substance abuse treatments to public schools students, as well as addressing the social and emotional needs of children with ACEs in Sandtown-Winchester/Harlem Park have immense positive impacts on communities and education systems by empowering children to improve their social and emotional well-being and achieve their academic potential. By lobbying for increased funding for initiatives such as the Expanded School Mental Health program and expanding the reach of the U-TURNS programs, the educational environment of public schools across Baltimore City can become better equipped to meet the specific needs of the students they serve.

7.3 Reducing Inequality of Economic Opportunity

Finally, deep economic inequalities are known to exist within the United States and are reflected in the income dimension of Baltimore City's HDIs. Across Baltimore City neighborhoods, income per capita ranges from $73,941.63 per year in Greater Roland Park/Poplar Hill to just $13,529.58 in Cherry Hill. While eonomic inequalities can be related to income inequalities and other measures of economic outcome; they also pertain to levels of opportunity. Economic opportunity differs from economic outcomes because it relates to the circumstances of an individual's birth and environment, rather than simply the economic status that one achieves.[197] While inequality in economic outcomes can sometimes be explained by variables such as differences in individual characteristics and choices; inequality in economic opportunity cannot be explained in the same way, as it arises from circumstances that are outside of an individual's control. [198]

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[195] Behavioral Health Systems Baltimore, "Impact Report 2016," 17, accessed June 6, 2018, http://www.bhsbaltimore.org/wp-content/uploads/2017/11/BHSB-Annual-Report_2017-1.pdf.
[196] Ibid.
[197] Katherine Bradbury and Robert K. Triest, "Introduction: Inequality of Economic Opportunity," *The Russell Sage Foundation Journal of the Social Sciences* 2, no. 2 (May 2016): 1, accessed May 2, 2017, https://muse.jhu.edu/article/616919/pdf.
[198] Bradbury and Triest, "Introduction: Inequality of Economic Opportunity," 1.

However, inequality of outcomes and inequality of opportunity interact with each other in a mutually reinforcing and intergenerational manner.[199] For example, it has been well-documented that the income levels and educational attainment of a child's parents have a significant impact on determining the degree of economic opportunity that a child will have during their lifetime, and thus the economic status that they are likely to achieve. [200] In addition, the geographic location and living conditions where children grow up also have an impact on economic opportunity, as those from low-income and disadvantaged neighborhoods often lack social, developmental, and educational resources that are readily available to children in more affluent neighborhoods.[201]

Another way in which inequality of economic opportunity works to produce unequal economic outcomes is through income mobility. Cross-national and national studies show that children born into the lower tail of highly unequal societies have less opportunity for upward social and income mobility, compared to similarly-situated children in more equal societies.[202, 203] In 2015, a study conducted by researchers at Harvard University found that of the 100 largest counties in the United States, Baltimore City has the worst prospects of income mobility for children who grow up in poor families.[204] The study found that for children of households that rank at the 25th percentile for national income distribution, each year of living in Baltimore City reduces potential earnings by 0.86 percent, accumulating to a reduction of 17 percent by the time the child reaches adulthood.[205] The Harvard University study also identified several other factors in addition to inequality that are associated with lower levels of income mobility, including concentrated poverty, racial segregation, and higher crime rates—each of which is prevalent in Baltimore City.[206] This research indicates that opportunities are not evenly distributed, and that there are prominent intersectional social, environmental, and systemic factors that work to limit economic mobility for many of the residents in Baltimore City communities.

7.3.1 Higher Education as a Gateway to Economic Opportunity

Targeted public policy can help to mitigate inequality in economic opportunity and outcomes for those raised in the most disadvantaged communities. One of these policies is investment in

[199] Bradbury and Triest, "Introduction: Inequality of Economic Opportunity," 1.
[200] Ibid.
[201] Ibid.
[202] Raj Chetty, et al., "Where is the Land of Opportunity?: The Geography of Intergenerational Mobility in the United States," *Quarterly Journal of Economics* 129, no.4 (2014): 3, accessed May 17, 2018, http://www.nber.org/papers/w19843.pdf.
[203] Miles Corak, "Economic Mobility," The Stanford Center on Poverty and Inequality (2016): 52-53, accessed May 1, 2018, https://inequality.stanford.edu/sites/default/files/Pathways-SOTU-2016-Economic-Mobility-3.pdf.
[204] Raj Chetty and Nathaniel Hendren, "The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effects County-Level Estimates," Harvard University and the National Bureau of Economic Research (May 2015): 12, accessed April 30, 2018, https://scholar.harvard.edu/files/hendren/files/nbhds_paper.pdf.
[205] Ibid.
[206] Ibid.

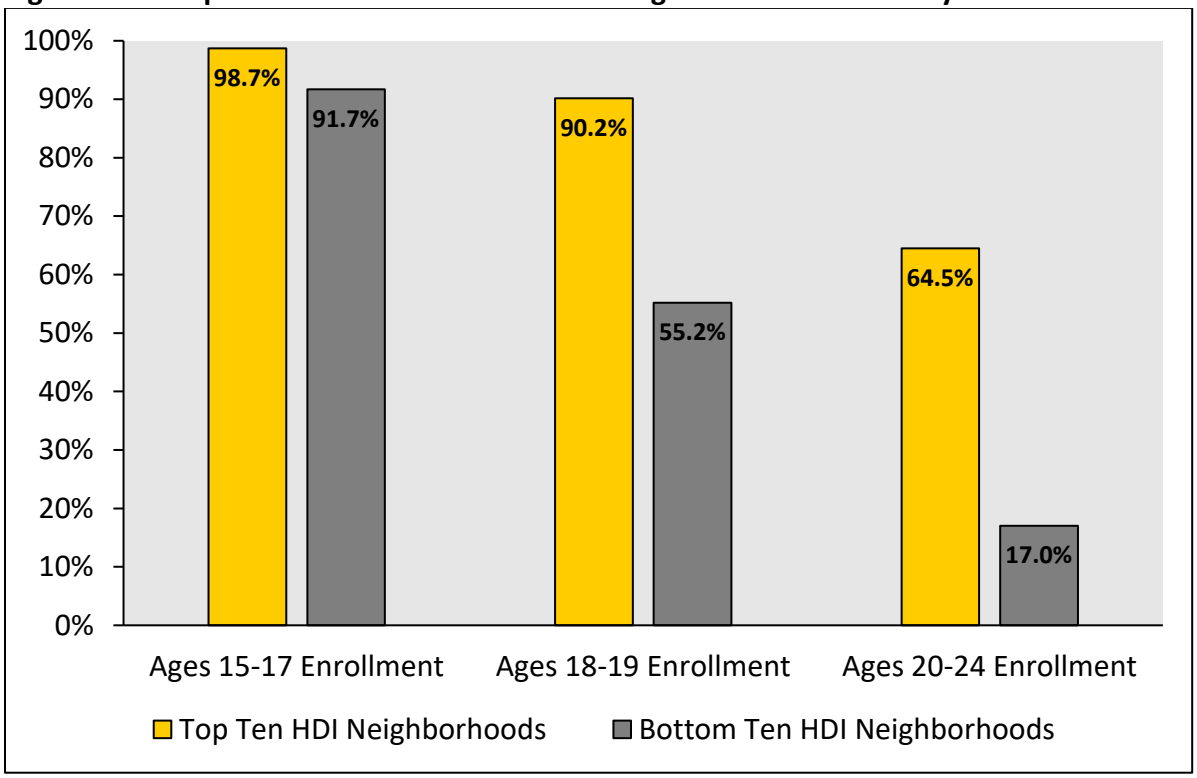
human capital through initiatives that make higher education more accessible for the lowest-income students. The OECD has found that increasing the share of the population that has attended tertiary education has a significant impact on reducing income inequality by lowering the dispersion of incomes.[207] In the United States' current economy, income is strongly tied to educational attainment. In Baltimore City, median annual earnings for individuals with a high school diploma is $28,396, whereas the median for individuals with a Bachelor's degree is $50,450.[208] Baltimore City residents with less than a high school diploma have a median annual earnings of just $21,359.[209] Thus, the ability of students to obtain higher education has a significant impact on their potential earnings and shapes economic opportunities of their children.

However, higher education is a tool for income mobility that is not accessible to everyone in Baltimore City. The HDI calculations for Baltimore City neighborhoods reveal that expected years of schooling vary greatly between neighborhoods. As displayed previously in Figure 4 of this report, seven of the ten neighborhoods with the highest levels of human development have an expected years of schooling that is equivalent to or greater than a Bachelor's degree. By contrast, none of the ten lowest-performing neighborhoods in the HDI have an expected years of schooling for the current student population that reaches equivalency to a Bachelor's degree.[210]

These disparities in expected educational attainment are further highlighted by the decline in school enrollment rates past the age of 17 in disadvantaged neighborhoods versus wealthy neighborhoods. The enrollment rates of students aged 15 to 17, 18 to 19, and 20 to 24 years of age respectively for the ten highest- and lowest-performing neighborhoods in the HDI are displayed in Figure 11 below.

[207] Office of Economic Cooperation and Development, "Reducing Income Inequality While Boosting Economic Growth: Can It Be Done?," 191, accessed May 1, 2018, https://www.oecd.org/eco/growth/49421421.pdf.
[208] "S2001: Earnings in the Past 12 Months (In 2016 Inflation-Adjusted Dollars): 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau.
[209] Ibid.
[210] "B14003: School Enrollment: 2012-2016 American Community Survey 5-Year Estimates," United States Census Bureau.

Figure 11: Comparison of Enrollment Rates during Transition to Tertiary Education



Sources: RESI, U.S. Census Bureau

Figure 11 shows how rapidly enrollment for the traditional college-age population decreases in neighborhoods with low levels of human development compared to those with high levels of human development. In neighborhoods with high HDIs, the enrollment rate between ages 15-17 and 18-19 drops only 8.5 percent (and remains above 90 percent), compared to a decrease of 36.5 percent between the same age groups in neighborhoods with low HDIs. Enrollment rates for these groups of neighborhoods fall to 64.5 percent and 17 percent respectively by the time the students reach the age range of 20-24. These trends in enrollment during the transition from secondary to tertiary education suggest that there are external forces that act as barriers to higher education that have particular impact on low-income and economically disadvantaged students.

One of the most renowned contemporary barriers to higher education is the cost of tuition, which especially impacts low-income students.[211] Even at Baltimore City's most affordable four-year institution, Coppin State University, tuition costs alone for four years would amount to almost $30,000.[212] This financial burden would make higher education virtually inaccessible to

[211] Ron Haskins, "A Key to Increasing Economic Mobility," Brookings Institute, August 26, 2015, accessed May 1, 2018, https://www.brookings.edu/opinions/a-key-to-increasing-economic-mobility/.
[212] "Tuition and Fees," Coppin State University, 2018, accessed May 17, 2018, https://www.coppin.edu/controller/tuitionandfees.

children in neighborhoods such as Upton/Druid Heights, where median household income is just $15,950, and more than 60 percent of families with children live below the federal poverty line.[213] Although there are funding opportunities that are intended to benefit low-income students, such as the Free Application for Federal Student Aid (FAFSA), these resources are not necessarily benefitting the students that need them the most. In Maryland, students in low-poverty school districts have FAFSA completion rates that are 4.8 percent higher than students in high-poverty school districts.[214] This trend, which holds true across most states, may be attributable to the disproportionate access to guidance counselling, information, and support systems between high-income and low-income high school students.[215] Therefore, while higher education is intended to serve as a pathway for economic mobility, access to this resource is restricted and works to the disadvantage of the lowest-income students. As a result, children that grow up in the poorest neighborhoods of Baltimore City have less economic opportunity and restricted access to avenues of upward income mobility.

Furthermore, studies on inequality and income mobility such as one published by the Brookings Institute in Spring 2016 suggest that low-income youth from areas with high levels of economic inequality often decide to drop out of school or choose not to pursue higher education because they believe their chances for economic success and upward mobility are unlikely.[216] Therefore, they often perceive a lower rate of return on investing time and money in additional education while sacrificing present-day earnings to study. [217] However, these decisions not to pursue higher education are made based on assumptions about how inequalities of economic opportunity limit upward social mobility, and thus influenced by external environmental factors, and not simply personal preference. Therefore, ingrained, perpetual inequality of economic opportunity also has the ability to influence people's perceptions of what they can achieve, and shape their decisions that will determine economic outcomes.

To mitigate these education-related barriers to economic opportunity in the contemporary labor force, the City of Baltimore must invest in the higher education of its young adults. Baltimore City Mayor Catherine Pugh has recently created a new initiative called the Mayor's Scholars Program, which specifically provides opportunities for Baltimore City Public School students to access higher education. Starting in summer of 2018, students who have recently

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[213] Baltimore City Health Department, "Baltimore City 2017 Neighborhood Health Profile: Upton/Druid Heights," 9, June 2017, accessed May 1, 2018, https://health.baltimorecity.gov/sites/default/files/NHP%202017%20-%2053%20Upton-Druid%20Heights%20(rev%206-9-17).pdf.
[214] Carrie Warick, "Higher Poverty Means Lower FAFSA Completion, New Data Shows," National College Access Network, April 19, 2017, accessed June 26, 2018, http://www.collegeaccess.org/BlogItem?dg=c7821796-adae-48a5-844d-fc865bfbb539.
[215] The Executive Office of the President, "Increasing College Opportunity for Low-Income Students: Promising Models and a Call to Action," 7, January 2014, accessed June 26, 2018, https://obamawhitehouse.archives.gov/sites/default/files/docs/increasing_college_opportunity_for_low-income_students_report.pdf.
[216] Kearney and Levine, "Income Inequality, Social Mobility, and the Decision to Drop Out of High School," 234.
[217] Ibid.

graduated from a Baltimore City Public High School can receive fully covered tuition fees for pursuing an associate degree, certificate, or job training programs at Baltimore City Community College through the Mayor's Scholars Program. This program is unique, as it provides equal opportunity for Baltimore City students regardless of their high school GPA, income, or immigration status.[218] In addition, shortly after the announcement of this initiative, Coppin State University pledged to offer free tuition for Baltimore City students who graduate with an associate's degree from Baltimore City Community College through the Mayor Scholars program.[219] These programs give Baltimore City Public School students an affordable pathway to pursue a higher education and greater opportunities for economic mobility.

Now that these new pathways for affordable higher education for Baltimore City students are being developed, it is important that Baltimore City facilitate their success by reducing institutional barriers to participation. One critical factor in ensuring the accessibility of college and university programs to students in Baltimore City is adequate transportation networks. Most of the academic institutions located in Baltimore City do not have independently operated off-campus shuttles or have very limited services, therefore requiring students to depend on local public transportation. The most extensive network of off-campus shuttles is provided by Johns Hopkins University, however these routes predominately service higher-income neighborhoods with high HDIs.[220]

Moreover, most colleges and universities in Baltimore City are fairly disconnected from public transportation routes, and especially from those that service areas of the city with some of the lowest levels of human development. For example, there are currently no direct public transportation routes that would take residents of east Baltimore neighborhoods such as Greenmount East, Clifton-Berea, or Madison/East End to Baltimore City Community College.[221] Furthermore, the Baltimore Collegetown Shuttle, which is dedicated solely for connecting students to higher education institutions in the Baltimore area, does not run south of Penn Station or west of Charles Street, thereby excluding Coppin State University and Baltimore City Community College.[222] Therefore, transportation and geographic barriers can become significant obstacles to students of Baltimore City neighborhoods that try to participate in the new higher education opportunities that are becoming available, such as the Mayor's Scholars Program.

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[218] Baltimore City Community College, "Mayor's Scholars Program," 2018, accessed June 7, 2018, https://www.bccc.edu/cms/lib/MD02000050/Centricity/Domain/2132/MSP_FAQ_Flyer_3_19_18-2.pdf.
[219] Liz Bowie, "Coppin State to Offer Free Tuition to City Students Graduating From BCC," *The Baltimore Sun* August 18, 2017, accessed June 7, 2018, http://www.baltimoresun.com/news/maryland/education/bs-md-ci-coppin-free-tuition-20170818-story.html.
[220] "Johns Hopkins University Real-Time Vehicle Locations," Johns Hopkins University, 2018, accessed June 15, 2018, http://jhu.transloc.com/.
[221] "Baltimore Link System Map," Maryland Transportation Authority, accessed June 7, 2018, https://mta.maryland.gov/sites/default/files/Geographic%20System%20Map_04302018.pdf.
[222] "Shuttle Schedule," Baltimore Collegetown, 2018, accessed June 7, 2018, http://baltimorecollegetown.org/shuttle/schedule/index.html.

The perpetuation of economic inequalities that stem from the unaffordability and lack of equal access to higher education is a serious issue for human development as a whole, as it limits the potential for community growth in both the income and education dimensions of the HDI. Through public initiatives that provide more equitable access to higher education, such as the Mayor's Scholars Program, and by supporting success of these programs through adequate transportation, Baltimore City can work to lessen some of the inequalities of opportunity that currently restrict inclusive development. While these policies will not solve all of the issues associated with unequal economic opportunities, which also include the quality of primary education, availability of health resources, and systemic racism, making higher education more affordable for those that have the fewest economic opportunities will make great strides towards promoting inclusive human development growth in Baltimore City.

8.0 Conclusion

The vast disparities in human development across Baltimore City neighborhoods paint a bleak picture. While the United States is frequently championed on the international stage as a global leader in economic development and standards of living, there are immense disparities in the experiences of different communities within the United States. The case of human development in Baltimore City illustrates just how widely levels of human development can range in an area less than 93 square miles. While some children in the city are born into neighborhoods that have conditions of health, education, and income that are on par with the most-developed countries in the world, others are born into neighborhoods that have conditions similar to that of countries with developing economies, political instability, and rampant civil conflict. Extreme disparities in levels of human development are particularly concerning, as several studies have indicated a relationship between levels of societal inequality and the prevalence of violence.[223, 224] Given the rapidly increasing homicide rate in Baltimore City, research of human development inequalities at the local level and the impacts of these disparities is particularly imperative.

Due to Baltimore City's history of social, legal, and political racism, human development disparities fall along racial divisions, and low levels of human development disproportionately impact the city's African-American residents. Over time, the effects of systemic forces have converged in a manner that has reduced opportunities for predominately African-American communities in Baltimore City to live healthy lives, receive equitable and high-quality public education, and access avenues of economic mobility. These human development inequalities have intergenerational impacts that work to restrict growth in the most disadvantaged communities.

Furthermore, an assessment of the underlying factors that contribute to human development reveals the high levels of inequality in access to health, education, and economic resources

[223] Adams, "How Chronic Violence Affects Human Development, Social Relations, and the Practice of Citizenship: A Systemic Framework for Action," 11.
[224] Wilkinson and Pickett, *The Spirit Level: Why Greater Equality Makes Stronger Societies*, 25.

across Baltimore City. Restricted access to quality resources that are essential for communities to create meaningful growth can cause cyclical and transgenerational impacts that work to keep the lowest-performing neighborhoods at the bottom. By addressing some of the factors that perpetuate disparities in life expectancy, education, and standards of living, inequalities in human development can be reduced. This analysis identifies four priority areas for creating inclusive human development in Baltimore City: availability of healthy food, access to infant and maternal healthcare resources, safe and secure school environments, and access to higher education.

Each of the systemic issues that are tied to inequalities in human development across Baltimore City neighborhoods can be met with targeted policy responses to create more equitable access to opportunity. Over the last five years, several new public programs have begun to address some the underlying factors that perpetuate HDI disparities, such as Baltimarket Virtual Supermarket Program, the BHSB's Expanded Mental Health in Schools and U-TURNs programs, and the Mayor's Scholars Program. These programs are currently working to provide essential health and education resources and opportunities for economic mobility to Baltimore City's most underserved communities. Investing in programs that connect all neighborhoods in Baltimore City to the resources that they need is an essential component of creating inclusive human development.

In the UNDP's research, the organization emphasizes the importance of universal human development by recognizing the connection between access to opportunity and freedom. As previously quoted, the UNDP states "Human development is all about human freedoms: freedom to realize the full potential of every human life, not just of a few, nor of most, but of all lives."[225] By adopting an inclusive approach to human development through investing in neighborhoods that have been systemically excluded, Baltimore City as a whole can become more equitable and prosperous.

[225] United Nations Development Programme, "Human Development Report 2016: Human Development for Everyone," iii.

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Appendix A—Supplementary Data Tables

Figure 12: Baltimore City HDIs and International Comparisons, All Neighborhoods

Neighborhood	HDI	Theoretical World Ranking (2016)	Country Comparison
Greater Roland Park/Poplar Hill	0.979	1	Norway (0.949)
North Baltimore/Guilford/Homeland	0.959	1	Norway (0.949)
Cross-Country/Cheswolde	0.923	8	Ireland (0.923)
Mount Washington/Coldspring	0.921	9	Iceland (0.921)
Inner Harbor/Federal Hill	0.920	10	United States (0.920)
Canton	0.907	16	United Kingdom (0.909)
South Baltimore	0.898	20	Luxembourg (0.898)
Fells Point	0.896	22	Belgium (0.896)
Midtown	0.891	25	Slovenia (0.890)
Medfield/Hampden/Woodberry/Remington	0.859	32	Andorra (0.858)
Highlandtown	0.853	36	Poland (0.855)
Greater Charles Village	0.845	40	Slovakia (0.845)
Downtown/Seton Hill	0.842	41	Portugal (0.843)
Hamilton	0.839	42	United Arab Emirates (0.840)
Glen-Fallstaff	0.838	42	United Arab Emirates (0.840)
Lauraville	0.837	43	Hungary (0.836)
Northwood	0.836	43	Hungary (0.836)
Chinquapin Park/Belvedere	0.835	43	Hungary (0.836)
Harford/Echodale	0.832	44	Latvia (0.830)
Loch Raven	0.824	47	Bahrain (0.824)
Greater Govans	0.817	47	Bahrain (0.824)
Harbor East/Little Italy	0.817	47	Bahrain (0.824)
Beechfield/Ten Hills/West Hills	0.816	47	Bahrain (0.824)
Howard Park/West Arlington	0.814	48	Montenegro (0.807)
Paterson Park North & East	0.809	48	Montenegro (0.807)
Forest Park/Wallbrook	0.807	48	Montenegro (0.807)
Dorchester/Ashburton	0.800	51	Kuwait (0.800)
Dickeyville/Franklintown	0.800	51	Kuwait (0.800)
Washington Village/Pigtown	0.798	52	Oman (0.796)
Belair-Edison	0.795	54	Barbados (0.795)
Morrell Park/Violetville	0.795	54	Barbados (0.795)
Cedonia/Frankfurt	0.790	59	Malaysia (0.789)

Westport/Mount Winans/Lakeland	0.787	60	Panama (0.788)
Edmonson Village	0.784	62	Antigua and Barbuda (0.786)
The Waverlies	0.783	63	Seychelles (0.782)
Orangeville/East Highlandtown	0.781	64	Mauritius (0.781)
Southeastern	0.778	66	Costa Rica (0.776)
Penn North/Reservoir Hill	0.777	66	Costa Rica (0.776)
Greater Mondawmin	0.769	70	Georgia (0.769)
Allendale/Irvington/South Hilton	0.767	71	Turkey (0.767)
Oldtown/Middle East	0.759	78	Azerbaijan (0.759)
Claremont/Armistead	0.757	78	Azerbaijan (0.759)
Greater Rosemont	0.756	79	Brazil (0.754)
Poppleton/Terraces/Hollins Market	0.752	79	Brazil (0.754)
Cherry Hill	0.751	81	Bosnia and Herzegovina (0.750)
Brooklyn/Curtis Bay/Hawkins Point	0.750	81	Bosnia and Herzegovina (0.750)
Sandtown-Winchester/Harlem Park	0.746	83	Algeria (0.745)
Pimlico/Arlington/Hilltop	0.744	83	Algeria (0.745)
Midway/Coldstream	0.736	91	Fiji (0.736)
Southwest Baltimore	0.734	92	Mongolia (0.735)
Southern Park Heights	0.732	94	Jamaica (0.730)
Clifton-Berea	0.732	94	Jamaica (0.730)
Madison/East End	0.731	94	Jamaica (0.730)
Greenmount East	0.729	95	Colombia (0.727)
Upton/Druid Heights	0.725	97	Tunisia (0.725)
Baltimore City	**0.821**	**47**	**Bahrain (0.824)**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Figure 13: Baltimore City HDIs and Racial and Ethnic Composition, All Neighborhoods

Neighborhood	HDI	White	African American or Black	Asian	Other Race or Two or More Races	Hispanic or Latinx
Greater Roland Park/Poplar Hill	0.979	78.3%	6.8%	7.8%	3.9%	3.3%
North Baltimore/Guilford/Homeland	0.959	65.6%	17.7%	7.7%	5.6%	3.4%
Cross-Country/Cheswolde	0.923	73.4%	18.6%	5.4%	0.5%	2.1%
Mount Washington/Coldspring	0.921	65.0%	25.7%	4.9%	0.8%	3.6%
Inner Harbor/Federal Hill	0.920	73.3%	13.6%	4.3%	3.6%	5.3%
Canton	0.907	86.5%	3.4%	4.0%	2.9%	3.2%
South Baltimore	0.898	89.7%	1.7%	3.1%	0.9%	4.6%
Fells Point	0.896	75.1%	5.4%	4.9%	4.0%	10.6%
Midtown	0.891	52.0%	31.4%	7.1%	3.3%	6.2%

Medfield/Hampden/Woodberry/Remington	0.859	75.6%	10.7%	6.9%	2.8%	4.0%
Highlandtown	0.853	71.2%	8.9%	1.9%	1.9%	16.1%
Greater Charles Village	0.845	43.0%	33.7%	13.2%	5.1%	4.9%
Downtown/Seton Hill	0.842	43.7%	29.8%	14.5%	6.3%	5.8%
Hamilton	0.839	29.9%	63.1%	0.9%	4.6%	1.5%
Glen-Fallstaff	0.838	27.7%	63.1%	2.1%	2.0%	5.1%
Lauraville	0.837	34.8%	53.3%	2.4%	5.9%	3.6%
Northwood	0.836	8.0%	84.6%	0.9%	3.0%	3.5%
Chinquapin Park/Belvedere	0.835	20.8%	68.9%	2.4%	2.5%	5.4%
Harford/Echodale	0.832	42.1%	52.4%	0.6%	1.6%	3.3%
Loch Raven	0.824	7.2%	88.5%	1.4%	1.0%	1.9%
Greater Govans	0.817	6.9%	89.5%	0.2%	1.3%	2.1%
Harbor East/Little Italy	0.817	27.8%	55.8%	4.5%	1.2%	10.6%
Beechfield/Ten Hills/West Hills	0.816	15.7%	78.7%	0.4%	3.6%	1.6%
Howard Park/West Arlington	0.814	3.4%	93.5%	0.2%	2.1%	0.8%
Paterson Park North & East	0.809	47.9%	31.2%	1.2%	2.6%	17.1%
Forest Park/Wallbrook	0.807	2.3%	94.4%	0.1%	1.8%	1.4%
Dorchester/Ashburton	0.800	1.3%	95.5%	0.3%	2.1%	0.8%
Dickeyville/Franklintown	0.800	7.0%	81.3%	1.9%	8.0%	1.8%
Washington Village/Pigtown	0.798	31.6%	60.1%	2.2%	2.7%	3.4%
Belair-Edison	0.795	9.9%	85.3%	0.5%	2.9%	1.4%
Morrell Park/Violetville	0.795	64.4%	22.2%	2.0%	2.5%	8.8%
Cedonia/Frankfurt	0.790	13.4%	78.5%	4.3%	1.0%	2.8%
Westport/Mount Winans/Lakeland	0.787	21.4%	69.4%	3.9%	1.0%	4.3%
Edmonson Village	0.784	0.8%	95.9%	0.0%	1.8%	1.5%
The Waverlies	0.783	13.5%	76.2%	2.1%	5.1%	3.1%
Orangeville/East Highlandtown	0.781	43.5%	13.8%	1.7%	5.8%	35.1%
Southeastern	0.778	41.4%	33.1%	1.3%	0.9%	23.3%
Penn North/Reservoir Hill	0.777	9.9%	84.9%	0.7%	1.7%	2.8%
Greater Mondawmin	0.769	1.6%	94.1%	0.2%	2.9%	1.2%
Allendale/Irvington/South Hilton	0.767	8.7%	87.4%	0.2%	2.1%	1.6%
Oldtown/Middle East	0.759	8.3%	87.6%	2.2%	0.4%	1.5%
Claremont/Armistead	0.757	27.9%	56.4%	0.5%	3.7%	11.5%
Greater Rosemont	0.756	1.1%	96.6%	0.2%	0.6%	1.4%
Poppleton/Terraces/Hollins Market	0.752	14.3%	80.6%	1.3%	1.7%	2.0%
Cherry Hill	0.751	3.1%	88.8%	1.0%	2.5%	4.6%
Brooklyn/Curtis Bay/Hawkins Point	0.750	40.7%	40.6%	1.2%	4.6%	12.9%
Sandtown-Winchester/Harlem Park	0.746	0.8%	96.2%	0.4%	2.4%	0.1%
Pimlico/Arlington/Hilltop	0.744	2.3%	95.2%	0.3%	1.7%	0.6%
Midway/Coldstream	0.736	3.0%	92.7%	0.6%	2.1%	1.6%
Southwest Baltimore	0.734	13.0%	75.5%	1.7%	3.3%	6.5%
Southern Park Heights	0.732	2.2%	93.8%	0.3%	0.8%	2.9%

Clifton-Berea	0.732	1.9%	93.8%	0.7%	1.8%	1.8%
Madison/East End	0.731	1.5%	88.1%	0.1%	0.9%	9.4%
Greenmount East	0.729	3.1%	94.2%	0.1%	0.6%	2.0%
Upton/Druid Heights	0.725	4.2%	92.0%	1.7%	1.5%	0.6%
Baltimore City	**0.821**	**27.7%**	**62.4%**	**2.5%**	**2.6%**	**4.8%**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Figure 14: Homicide Rates and Counts by HDI for All Neighborhoods, 2017

Neighborhood	HDI	Homicides (2017)	Neighborhood Population	Homicide Rate (per 100,000 people)
Greater Roland Park/Poplar Hill	0.979	0	7,726	0.0
North Baltimore/Guilford/Homeland	0.959	2	17,293	11.6
Cross-Country/Cheswolde	0.923	0	13,613	0.0
Mount Washington/Coldspring	0.921	1	4,998	20.0
Inner Harbor/Federal Hill	0.920	3	13,520	22.2
Canton	0.907	1	8,182	12.2
South Baltimore	0.898	0	7,357	0.0
Fells Point	0.896	4	9,175	43.6
Midtown	0.891	1	16,092	6.2
Medfield/Hampden/Woodberry/Remington	0.859	1	16,976	5.9
Highlandtown	0.853	5	7,250	69.0
Greater Charles Village	0.845	13	16,515	78.7
Downtown/Seton Hill	0.842	6	6,297	95.3
Hamilton	0.839	3	13,448	22.3
Glen-Fallstaff	0.838	6	16,714	35.9
Lauraville	0.837	2	12,194	16.4
Northwood	0.836	1	17,265	5.8
Chinquapin Park/Belvedere	0.835	0	8,447	0.0
Harford/Echodale	0.832	3	15,788	19.0
Loch Raven	0.824	2	17,055	11.7
Greater Govans	0.817	8	8,394	95.3
Harbor East/Little Italy	0.817	1	5,671	17.6
Beechfield/Ten Hills/West Hills	0.816	2	14,121	14.2
Howard Park/West Arlington	0.814	4	10,796	37.1
Paterson Park North & East	0.809	4	14,667	27.3
Forest Park/Wallbrook	0.807	3	9,702	30.9
Dorchester/Ashburton	0.800	9	11,956	75.3
Dickeyville/Franklintown	0.800	0	3,563	0.0
Washington Village/Pigtown	0.798	2	5,264	38.0
Belair-Edison	0.795	11	16,762	65.6

Morrell Park/Violetville	0.795	3	7,661	39.2
Cedonia/Frankfurt	0.790	9	23,187	38.8
Westport/Mount Winans/Lakeland	0.787	2	6,835	29.3
Edmonson Village	0.784	5	8,041	62.2
The Waverlies	0.783	3	7,974	37.6
Orangeville/East Highlandtown	0.781	3	10,192	29.4
Southeastern	0.778	4	5,544	72.2
Penn North/Reservoir Hill	0.777	9	10,227	88.0
Greater Mondawmin	0.769	5	9,515	52.5
Allendale/Irvington/South Hilton	0.767	14	16,505	84.8
Oldtown/Middle East	0.759	12	9,016	133.1
Claremont/Armistead	0.757	0	8,898	0.0
Greater Rosemont	0.756	24	16,622	144.4
Poppleton/Terraces/Hollins Market	0.752	3	5,063	59.3
Cherry Hill	0.751	2	8,082	24.7
Brooklyn/Curtis Bay/Hawkins Point	0.750	12	13,836	86.7
Sandtown-Winchester/Harlem Park	0.746	15	14,862	100.9
Pimlico/Arlington/Hilltop	0.744	18	11,017	163.4
Midway/Coldstream	0.736	13	8,706	149.3
Southwest Baltimore	0.734	26	17,647	147.3
Southern Park Heights	0.732	8	14,070	56.9
Clifton-Berea	0.732	11	8,777	125.3
Madison/East End	0.731	7	6,996	100.1
Greenmount East	0.729	23	7,910	290.8
Upton/Druid Heights	0.725	13	10,252	126.8
Baltimore City	**0.821**	**342**	**621,000**	**55.1**

Source: City of Baltimore, ACS 2012-2016 Estimates, RESI

Figure 15: Percentage of Land Covered by a Food Desert by HDI for All Neighborhoods, 2016

Neighborhood	HDI	% of Land Covered by Food Desert
Greater Roland Park/Poplar Hill	0.979	0.0%
North Baltimore/Guilford/Homeland	0.959	0.4%
Cross-Country/Cheswolde	0.923	0.0%
Mount Washington/Coldspring	0.921	0.1%
Inner Harbor/Federal Hill	0.920	0.0%
Canton	0.907	0.0%
South Baltimore	0.898	37.7%
Fells Point	0.896	0.2%
Midtown	0.891	9.6%
Medfield/Hampden/Woodberry/Remington	0.859	0.1%

Highlandtown	0.853	0.0%
Greater Charles Village	0.845	13.2%
Downtown/Seton Hill	0.842	21.7%
Hamilton	0.839	0.0%
Glen-Fallstaff	0.838	8.4%
Lauraville	0.837	0.1%
Northwood	0.836	0.0%
Chinquapin Park/Belvedere	0.835	0.0%
Harford/Echodale	0.832	0.0%
Loch Raven	0.824	0.0%
Greater Govans	0.817	36.2%
Harbor East/Little Italy	0.817	34.5%
Beechfield/Ten Hills/West Hills	0.816	0.1%
Howard Park/West Arlington	0.814	0.0%
Patterson Park North & East	0.809	2.2%
Forest Park/Wallbrook	0.807	41.9%
Dorchester/Ashburton	0.800	0.1%
Dickeyville/Franklintown	0.800	46.3%
Washington Village/Pigtown	0.798	3.2%
Belair-Edison	0.795	9.2%
Morrell Park/Violetville	0.795	0.0%
Cedonia/Frankfurt	0.790	6.7%
Westport/Mount Winans/Lakeland	0.787	0.0%
Edmonson Village	0.784	17.1%
The Waverlies	0.783	60.6%
Orangeville/East Highlandtown	0.781	3.3%
Southeastern	0.778	3.2%
Penn North/Reservoir Hill	0.777	28.9%
Greater Mondawmin	0.769	13.7%
Allendale/Irvington/South Hilton	0.767	34.9%
Oldtown/Middle East	0.759	56.6%
Claremont/Armistead	0.757	0.8%
Greater Rosemont	0.756	53.8%
Poppleton/Terraces/Hollins Market	0.752	56.5%
Cherry Hill	0.751	44.8%
Brooklyn/Curtis Bay/Hawkins Point	0.750	2.8%
Sandtown-Winchester/Harlem Park	0.746	59.4%
Pimlico/Arlington/Hilltop	0.744	42.6%
Midway/Coldstream	0.736	23.9%
Southwest Baltimore	0.734	37.7%
Southern Park Heights	0.732	70.2%
Clifton-Berea	0.732	47.9%

Madison/East End	0.731	40.0%
Greenmount East	0.729	44.3%
Upton/Druid Heights	0.725	26.3%
Baltimore City	**0.821**	**12.5%**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Figure 16: Health Indicators by HDI for All Neighborhoods, 2016

Neighborhood	HDI	% of Mothers with BMI =>30	Heart Disease Mortality Rate (per 10,000, residents per year)
Greater Roland Park/Poplar Hill	0.979	9.5%	13.6
North Baltimore/Guilford/Homeland	0.959	11.1%	17.5
Cross-Country/Cheswolde	0.923	15.3%	11.5
Mount Washington/Coldspring	0.921	11.8%	24
Inner Harbor/Federal Hill	0.920	10.7%	25.7
Canton	0.907	8.3%	19.9
South Baltimore	0.898	34.5%	27.2
Fells Point	0.896	11.3%	22.5
Midtown	0.891	20.0%	35.8
Medfield/Hampden/Woodberry/Remington	0.859	15.4%	31.5
Highlandtown	0.853	16.4%	39.6
Greater Charles Village	0.845	21.7%	29.6
Downtown/Seton Hill	0.842	18.5%	40.1
Hamilton	0.839	34.2%	33.1
Glen-Fallstaff	0.838	32.5%	19.6
Lauraville	0.837	32.3%	27.2
Northwood	0.836	34.8%	31.6
Chinquapin Park/Belvedere	0.835	34.9%	22.7
Harford/Echodale	0.832	32.5%	33.6
Loch Raven	0.824	34.8%	29.9
Greater Govans	0.817	36.3%	25
Harbor East/Little Italy	0.817	28.6%	28.3
Beechfield/Ten Hills/West Hills	0.816	34.5%	21.6
Howard Park/West Arlington	0.814	33.8%	29
Patterson Park North & East	0.809	27.1%	31.4
Forest Park/Wallbrook	0.807	40.8%	24.2
Dorchester/Ashburton	0.800	36.9%	22.8
Dickeyville/Franklintown	0.800	40.3%	30
Washington Village/Pigtown	0.798	31.3%	34.5
Belair-Edison	0.795	26.7%	26.7
Morrell Park/Violetville	0.795	30.5%	29.7

Cedonia/Frankfurt	0.790	36.5%	27.9
Westport/Mount Winans/Lakeland	0.787	33.0%	28.4
Edmonson Village	0.784	31.3%	25.8
The Waverlies	0.783	30.4%	27
Orangeville/East Highlandtown	0.781	23.7%	30.3
Southeastern	0.778	31.5%	27.3
Penn North/Reservoir Hill	0.777	37.9%	35.1
Greater Mondawmin	0.769	40.0%	34.2
Allendale/Irvington/South Hilton	0.767	38.1%	26.9
Oldtown/Middle East	0.759	41.5%	35.3
Claremont/Armistead	0.757	36.8%	31.4
Greater Rosemont	0.756	35.9%	36.5
Poppleton/Terraces/Hollins Market	0.752	38.6%	36.2
Cherry Hill	0.751	40.1%	29.4
Brooklyn/Curtis Bay/Hawkins Point	0.750	31.5%	36.1
Sandtown-Winchester/Harlem Park	0.746	36.8%	31.2
Pimlico/Arlington/Hilltop	0.744	38.8%	34.4
Midway/Coldstream	0.736	39.2%	32.3
Southwest Baltimore	0.734	34.5%	27.2
Southern Park Heights	0.732	39.8%	29.4
Clifton-Berea	0.732	41.8%	27.7
Madison/East End	0.731	38.2%	41.2
Greenmount East	0.729	39.5%	42.3
Upton/Druid Heights	0.725	38.1%	39.1
Baltimore City	**0.821**	**30.5%**	**24.4**

Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Figure 17: Infant Mortality Rates by HDI for All Neighborhoods, 2016

Neighborhood	HDI	Infant Mortality
Greater Roland Park/Poplar Hill	0.979	3.6
North Baltimore/Guilford/Homeland	0.959	1.5
Cross-Country/Cheswolde	0.923	5.4
Mount Washington/Coldspring	0.921	0
Inner Harbor/Federal Hill	0.920	3.3
Canton	0.907	3.2
South Baltimore	0.898	13.9
Fells Point	0.896	5.7
Midtown	0.891	9.7
Medfield/Hampden/Woodberry/Remington	0.859	6.9
Highlandtown	0.853	10.3
Greater Charles Village	0.845	11.4
Downtown/Seton Hill	0.842	8.4

Hamilton	0.839	13.4
Glen-Fallstaff	0.838	9.7
Lauraville	0.837	4.2
Northwood	0.836	14.1
Chinquapin Park/Belvedere	0.835	9
Harford/Echodale	0.832	2.6
Loch Raven	0.824	14.2
Greater Govans	0.817	5.7
Harbor East/Little Italy	0.817	16.7
Beechfield/Ten Hills/West Hills	0.816	8.4
Howard Park/West Arlington	0.814	5.9
Patterson Park North & East	0.809	10.9
Forest Park/Wallbrook	0.807	10.6
Dorchester/Ashburton	0.800	6.4
Dickeyville/Franklintown	0.800	13.2
Washington Village/Pigtown	0.798	4.6
Belair-Edison	0.795	10.1
Morrell Park/Violetville	0.795	8.2
Cedonia/Frankfurt	0.790	12.2
Westport/Mount Winans/Lakeland	0.787	3.5
Edmonson Village	0.784	9.8
The Waverlies	0.783	12
Orangeville/East Highlandtown	0.781	10.3
Southeastern	0.778	8.9
Penn North/Reservoir Hill	0.777	9.9
Greater Mondawmin	0.769	5.2
Allendale/Irvington/South Hilton	0.767	10.6
Oldtown/Middle East	0.759	12.6
Claremont/Armistead	0.757	8.6
Greater Rosemont	0.756	11.3
Poppleton/Terraces/Hollins Market	0.752	15.4
Cherry Hill	0.751	18.8
Brooklyn/Curtis Bay/Hawkins Point	0.750	9
Sandtown-Winchester/Harlem Park	0.746	10.1
Pimlico/Arlington/Hilltop	0.744	20
Midway/Coldstream	0.736	13
Southwest Baltimore	0.734	13.9
Southern Park Heights	0.732	15.5
Clifton-Berea	0.732	14.8
Madison/East End	0.731	12.1
Greenmount East	0.729	16.2
Upton/Druid Heights	0.725	10

Baltimore City	**0.821**	**10.4**

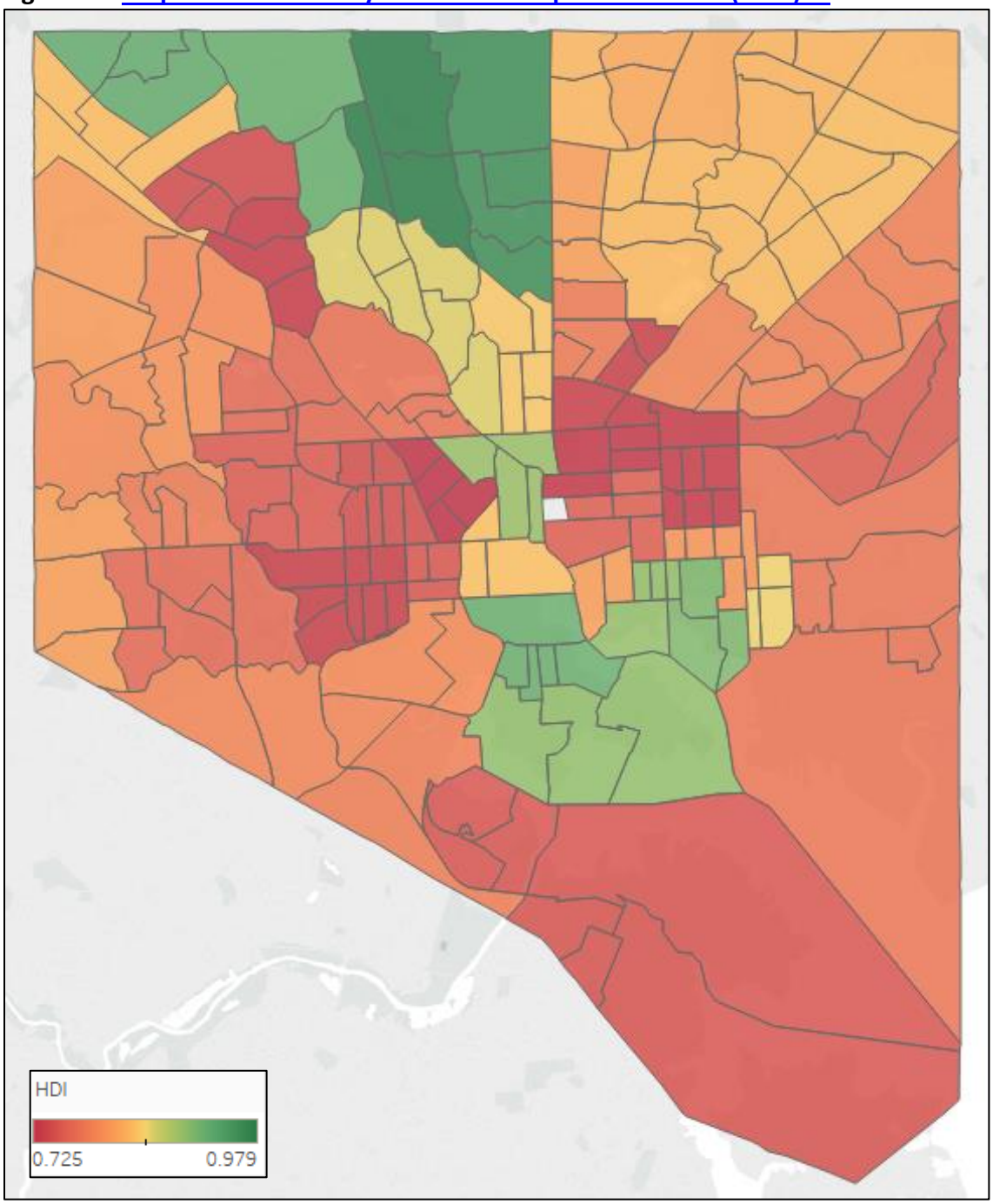
Source: Baltimore City Health Department, RESI, UIS, UNDP, U.S. Census Bureau

Appendix B—Maps of Baltimore City Data

Figure 18: Map of Baltimore City Neighborhoods (Community Statistical Areas, 2017)

Source: Baltimore City Health Department

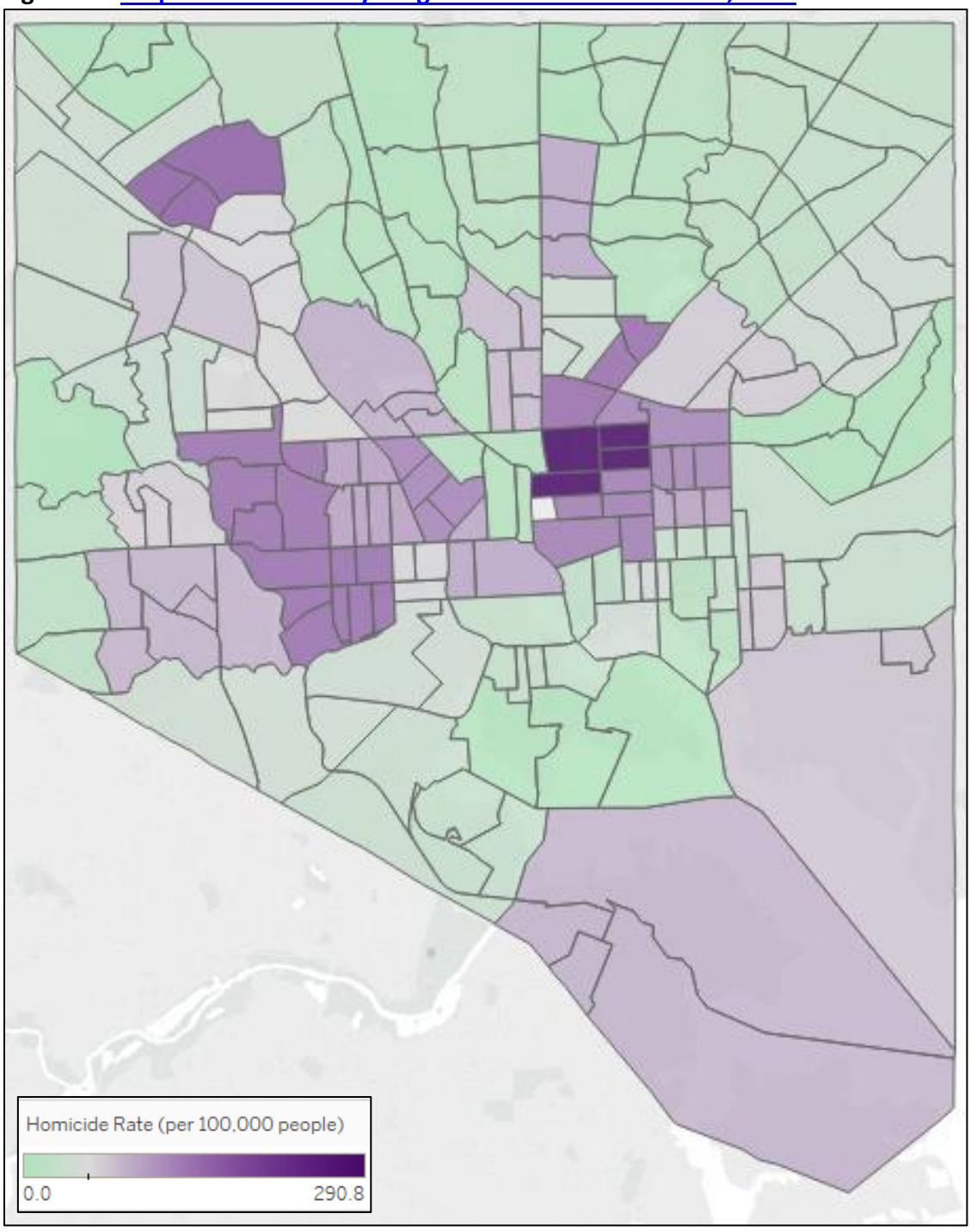
Figure 19: Map of Baltimore City Human Development Indexes (HDIs)[226]



Source: Baltimore City Health Department, RESI, Tableau Public, UIS, UNDP, U.S. Census Bureau

[226] A live version of this map can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.

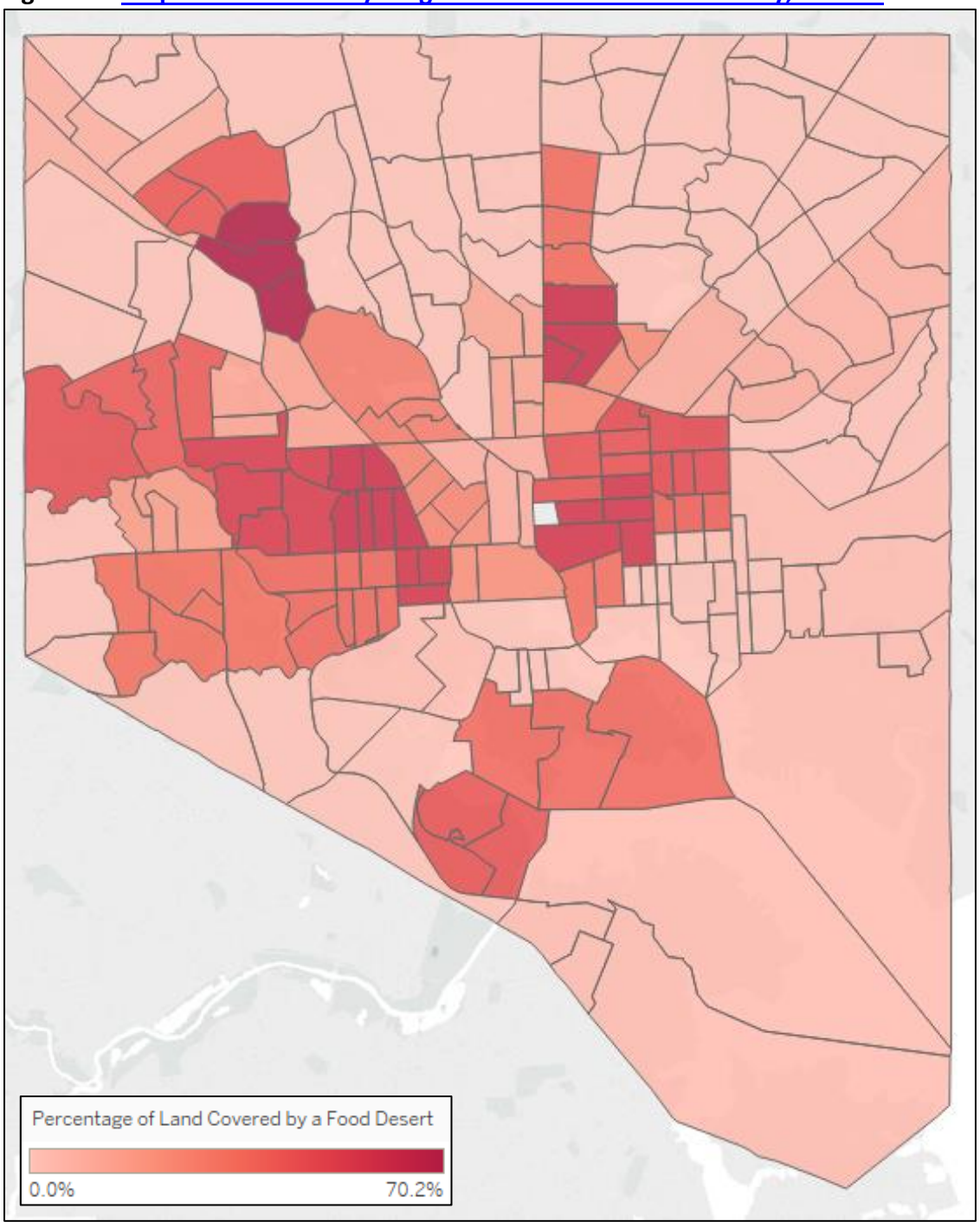
Figure 20: Map of Baltimore City Neighborhood Homicide Rates, 2017[227]



Source: City of Baltimore, ACS 2012-2016 Estimates, RESI, Tableau Public

[227] A live version of this map can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.

Figure 21: Map of Baltimore City Neighborhood Food Desert Density, 2017[228]



Source: Baltimore City Health Department, RESI, Tableau Public

[228] A live version of this map can be found at the following link address: https://public.tableau.com/profile/regional.economic.studies.institute.of.towson.university#!/vizhome/BaltimoreCityHumanDevelopmentIndexDashboard_0/HumanDevelopmentIndex.