

A Study of High School Attendance Areas, Diversity, and Capacity in Johnston County, NC

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Introduction

Despite the gains made in interracial contact between African American and white students from 1954 to the late 1980s, since the early 1990s, a distinct resegregative trend has led to public schools being more segregated now than they were in the 1970s. According to the University of California's Civil Rights Project, 35.8% of black students and 41.8% of Latino students in the South¹ attend "intensely segregated" (90-100% non-white) schools. Predominantly non-white schools in North Carolina and across the South are also overwhelmingly high poverty schools.² As the resegregative trend spurred on by the demand for "choice," charter and "neighborhood" schools continues, we see that race and class remain determinative factors in the quality of educational resources available in public schools.

As discussed further below, over the last two decades, education and social science researchers have explored this trend's effect on overall school quality and student outcomes, and affirmed what James Coleman established more than 60 years ago: racially isolating students has wide-ranging adverse effects. In short, students in high poverty schools suffer significant deprivation of key educational resources, including experienced, certified teachers, quality facilities and curricula. Meanwhile, no matter what their individual socioeconomic status, students in predominantly middle class schools achieve at higher levels. Educational scholar and law professor Derek Black summarizes the research results this way:

Schools enjoy any number of important resources that they do not and cannot buy, such as the communities, public services, partnerships, and private industries surrounding them that support the educational environment. The more important and direct non-economic resource, however, is a school district's middle income students. Common sense and social science indicate that students learn not only from their teachers, but also from their peers. Middle-income peers (and their parents), in particular, bring a host of experiences, outside learning, and high expectations to schools that positively impact other students in their schools.³

Although poverty's critical role in determining school achievement has long been established, and although the location of school facilities and student assignment is within a school board's control, socioeconomic segregation within and across school districts is still widely viewed as an intractable inevitability. However, that view is inconsistent with reality. While school boards cannot control where students live, or

¹ Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia

² Schools where over 60% of the students are eligible for the federal Free or Reduced Lunch program (FRL) are considered high poverty schools.

³ See Derek W. Black, *Middle Income Peers as Educational Resources and the Constitutional Right to Equal Access*, 53 Boston College Law Rev. 373 (2012). Available at: <https://ssrn.com/abstract=2008731>.

whether their parents went to college, they can control who attends school with those students and the resources that will be available to them. And those are critical elements that chart a school's success.

This reality was recognized by the United States Supreme Court in its 2007 decision in *Parents Involved in Community Schools v. Seattle School District No. 1*. Regarding a school board's permissible consideration of race, Justice Kennedy wrote in his concurrence:

School boards may pursue the goal of bringing together students of diverse backgrounds and races through other means, including strategic site selection of new schools; drawing attendance zones with general recognition of the demographics of neighborhoods; allocating resources for special programs; recruiting students and faculty in a targeted fashion; and tracking enrollments, performance, and other statistics by race. These mechanisms are race conscious but do not lead to different treatment based on a classification that tells each student he or she is to be defined by race, so it is unlikely any of them would demand strict scrutiny to be found permissible. Executive and legislative branches, which for generations now have considered these types of policies and procedures, should be permitted to employ them with candor and with confidence that a constitutional violation does not occur whenever a decision maker considers the impact a given approach might have on students of different races.

Recognizing the need for clarity regarding what steps a school board can take in light of increasing school segregation's negative social and economic effects and unconstitutional deprivation of educational equity, in 2012 the United States Department of Education and the United States Department of Justice issued a *Guidance on the Voluntary Use of Race to Achieve Diversity and Avoid Racial Isolation in Primary and Secondary Schools*.⁴ The Guidance references the aforementioned research, stating that:

Racially diverse schools provide incalculable educational and civic benefits by promoting cross-racial understanding, breaking down racial and other stereotypes, and eliminating bias and prejudice. Our “nation's future depends upon leaders trained through wide exposure' to the ideas and mores of students as diverse as this Nation of many peoples.” Conversely, where schools lack a diverse student body or are racially isolated (i.e., are composed overwhelmingly of students of one race), they may fail to provide the full panoply of benefits that K-12 schools can offer.

The Guidance lists considerations and offers approaches for school districts to achieve diversity and avoid racial isolation, including zoning, school and program siting, and

⁴ In July 2018, the U.S. Department of Education rescinded this Guidance, asserting that the Supreme Court decisions upon which they were based provide all necessary information for school districts.
<https://www.edweek.org/ew/articles/2018/07/18/trump-rescinds-obama-era-guidance-on-diversity-at.html>

inter-and intra-district transfers. Before initiating the range of approaches available, school districts should first consider relevant data about the students they are serving, and carefully consider their overall educational goals, including the role that racial and socioeconomic integration plays in achieving those goals.

Study Purpose

The goal of this report is to look at demographic patterns in Johnston County and in the county school district to assess how the Johnston County Board of Education (BOE) could revise school assignment areas to improve school diversity, while also managing growth, school capacity, and facilities use. Using Geographic Information Systems (GIS) data and publicly available education statistics from the U.S. Census and the North Carolina Department of Education, this report analyzes race and other socio-economic metrics in current school assignment areas, as well as looking at an alternative assignment model that shows how such changes can be done effectively. Prioritizing consideration of demographic patterns in the county (past, current and future) as well as current school infrastructure (current school locations and capacities) in the drawing of school attendance areas and the siting decisions for new schools in Johnston County is a measure the BOE can take to enhance individual student and school performance, and increase educational equity across the district.

Sources of Data

Demographic patterns change over time, with migration (e.g. growth from Raleigh-Durham Urban Area employment, immigration policies, etc.), birth patterns (which groups are reproducing at what rates) and movement within counties (e.g., as housing becomes less affordable closer to employment centers). This study looked at patterns for the county's school-age population and school-specific populations. The high school age population is analyzed for those aged 15-19, whereas middle school populations are looked at for two groups: 10-14, as grouped by the census, and 12-to-14-year-olds, with each year's data added cumulatively.

Because we analyzed the distribution of the population and calculated that population over a variety of current school attendance areas to model possible alternative school attendance areas, geographic details took precedence over timeliness of data. Our geographically-based data source options were the Decennial Census and the American Community Survey (ACS). There are trade-offs with both sources. The smallest unit of measurement available is the census block, which represents a neighborhood. Census blocks are the geography used in reapportionment of voting districts because of their local precision. This level of detail is available in the Decennial Census, but not for variables in the ACS. In addition, there is no income data in the Decennial Census.

The next-largest unit of measurement are block groups, combinations of blocks in an area. The census tract (the next size of Census geographies) is inappropriate for assessing

distribution in rural areas such as much of eastern Johnston County, where the relative low population density results in much larger tracts. Therefore, we use block-group level data.

The Census aggregates data over five-year periods to lower the error and produce more reliable estimates. The 2012-2016 five-year estimates (the most current data available) provides the most detailed data on individual characteristics (race, age, etc.) and is used herein for this purpose.

The ACS provides data by age and by race/ethnicity at the block group level, but not age by race (e.g. % black for 10-14-yr-olds). While the ACS is “the premier source for detailed population and housing information about our nation,”⁵ it is based upon a sample of the population. The sampling error rates for its one-year data make it inappropriate for the purpose of this study. Therefore, for much of this analysis, we used the Decennial Census. Data sources are noted in each table and figure.

School attendance area data were obtained from the National Center for Education Statistics (<http://nces.ed.gov/ccd/elsi/>).

Factors Assessed

Racially isolated student bodies correlate with low test scores and other outcome measures, such as graduation rates. Conversely, racially-diverse schools foster positive outcomes.⁶

Racial integration has been shown to have positive economic consequences for students. In *Diversity Challenged* (2001), Janet Schofield lists the many benefits of integrated elementary and secondary schools, including their long-term economic advantages. She cites academic progress of African American and Hispanic students; reduction of the dropout rate (thus eliminating the substantial negative economic consequences of failing to complete high school); and improvement of long-term occupational consequences for African Americans. These consequences include “a) fostering higher occupational aspirations and more consistent career planning linked to these aspirations; b) increasing earnings modestly, and (c) increasing the likelihood that they will work in professions in which Blacks have traditionally been underrepresented.” These facts summarize several decades of research....⁷

⁵ <https://www.census.gov/programs-surveys/acs/> accessed 8/13/2018.

⁶ ACT Research and Policy, “Do race/ethnicity-based student achievement gaps grow over time?” March 2012. <https://forms.act.org/research/policymakers/pdf/RaceEthnicityReport.pdf> accessed 12/16/2017.

⁷ “The Effects of Racially and Economically Isolated Schools on Student Performance, Summary” *Poverty and Race*, PRRAC, September/October 2010. Vol. 19, No. 5, pp. 11-12.

Poverty cannot be separated from racial and ethnic segregation in schools, as attending a predominantly-minority⁸ school usually means attending a high-poverty school. Research shows a correlation of school success with higher incomes and lower performance with poverty. Concentrating students in poverty hurts the entire student body:

... prior research indicates that even after taking into account the effects of poverty on individual students, having a high concentration of low-income students within a school further depresses student learning outcomes in the school.⁹

The connection between poverty and academic results is one of the most enduring relationships in education research.¹⁰ Known as Economic Disadvantage, this is measured by schools using the qualification for Free and Reduced-Price Lunch Program (FRL). This report uses the metrics of race (percent African American) and Economic Disadvantage (through FRL) to assess the county's current and potential school attendance areas.

School infrastructure is another constraining factor. This includes location of current and potential schools and capacity of existing schools.

School attendance areas are – of necessity in a changing environment – in constant flux. These may be driven by growth or shrinkage, by the building or closure of schools, by the addition of magnet, charter or private schools, by political concerns (e.g. organization by parental groups submitting pressure on the school board), or by legal or outside governmental influence. As many of these factors are outside the area of demographic analysis, this study considered only the current public high schools with designated attendance areas.

When actual school attendance (or student count) is compared to school attendance areas, the result is an indication that the attendance area is *over- or under-subscribed*. Oversubscription occurs when the number of residents living in a specific attendance area is greater than the number of students who actually attend the assigned school.

When actual school attendance (or student count) is compared to school infrastructure capacity (classroom space), the result is an indication that the attendance area is *over- or under-capacity*. Overcapacity occurs when the number of students attending a school outnumbers the classroom space available in that school.

⁸ This report uses the term “minority” to refer to people of color (non-white), which is a term often used by demographers; we recognize however that the value of this term is subject to the changing racial and ethnic profile; and also that for many, the term is considered a mischaracterization of the role and contributions of people of color in our communities.

⁹ Gary T. Henry, Charles L. Thompson, Kathleen Brown, Elizabeth Cunningham, Kirsten Kainz, Bianca Montrosse, Adrienne Sgammato, and Yi Pan, “The High School Resource Allocation Study,” Carolina Institute for Public Policy, University of North Carolina at Chapel Hill, February (2008).

¹⁰ Ansell, Susan, “Achievement Gap,” Education Week, July 7, 2011.

<https://www.edweek.org/ew/issues/achievement-gap/index.html> accessed 12/16/2017.

Johnston County Schools

With approximately 36,000 students, Johnston County Schools (JCS) is the 9th largest district in the state. Growth in JCS has been rapid. The district grew by almost 20,000 students from 1994-2014, and 13 new schools were constructed during that period. The district has 46 schools: 23 elementary, 13 middle, and 10 high schools. Johnston County Schools is governed by a seven member board who are all elected at-large. The Board currently includes four white men, two white women, and one African American woman. There are no board members residing in the Smithfield/Selma area of the county.

With a few exceptions, student assignment in Johnston County is based on geographic attendance areas and feeder patterns (elementary-middle-high) determined by the BOE, based on criteria that it unilaterally establishes. These typically include proximity, capacity, and established neighborhood, political, or other geographic boundaries. The BOE can revise these boundaries at any time to meet its policy goals and priorities for enrollment, but attendance areas must always be revisited when a new school is added. Given the rapid student growth in Johnston, the Board has had to adjust attendance area boundaries numerous times over the past decade to accommodate new school construction.

In addition to attendance area changes, decisions on where to construct new schools also plays a critical role in the likely demographic makeup of the students that attend those schools. Often, school siting decisions merely follow development patterns. This has been the model in JCS, as nearly all of the new schools constructed over the last 15 years have been in the northern and western portion of the county. While “following the development” may help reduce transportation costs and time, such an approach can further entrench segregative housing patterns and fails to recognize that school siting decisions can both help drive economic development in communities and enhance opportunities for attracting a diverse student body.

1. Student and District Information

A strong correlation exists between racial and socio-economic segregation in schools and student achievement. As a result, students in more segregated schools are at greater risk of not receiving a “sound basic education” as required by the North Carolina Constitution. In order to evaluate whether students are getting a sound basic education, the N.C. Supreme Court’s *Leandro* opinions¹¹ instruct us to assess educational “outputs,” such as test scores and graduation rates, and “inputs,” such as experienced teachers and adequate facilities. While every student in North Carolina has the right to a sound basic education, the *Leandro* cases note that the State has been particularly deficient in protecting this right for “at-risk” students, which were defined as students for whom demographic

¹¹ *Leandro v. State*, 346 N.C. 336, 488 S.E.2d 249 (1997); *Hoke County v. State*, 358 N.C. 605, 599 S.E.2d 365 (2004)

factors—including poverty, limited English proficiency, racial/ethnic minority status, or parental education—may adversely impact access to equal educational opportunities.

a. **2018 Demographics**

The most recent census data shows that the population of Johnston County is 67.9% white, 16.5% black or African American, and 13.7% Hispanic or Latino.¹² The population of school-age students does not quite align with the county population on the whole, with 56.8% of enrolled students identified as white, 15.9% black or African American, and 22.8% Hispanic – 11% fewer white students than the county overall, and 9% more Hispanic students.¹³

As shown in Tables 1 and 2 below, the demographics of the schools themselves largely mirror those of the district and the county, with the exception of Smithfield-Selma High School (and its feeder schools, Smithfield and Selma Middle Schools); and Corinth Holders High and Princeton High. Typically in school desegregation legal analyses, if a school deviates from the district average by 15%, the court will consider the school racially isolated. The schools in the Smithfield-Selma area all exceed that metric, with Selma Middle by far the most segregated, deviating 45 points imbalanced white, 31 points Hispanic. White students in Selma Middle make up only 12% of the school population (compared to 57% of the district), and Hispanic students are at 54% (compared to 23% of the district). In contrast, the populations of Corinth Holders and Princeton High Schools are over 70% white students, putting them near or above 15% from the district average.

Table 1						
2016-2017 District-Wide Racial Demographics						
MIDDLE SCHOOLS	% WHITE	% BLACK	% HISPANIC	% TWO OR MORE	% INDIAN	% FRL
Benson Middle	48.67	14.99	32.03	3.49	3.49	65.62
Cleveland Middle	68.48	13.76	11.47	3.82	3.82	27.43
Four Oaks Middle	58.32	10.90	27.34	3.06	3.06	59.69
North Johnston Middle	54.62	11.94	29.46	3.18	3.18	64.72
McGee's Crossroads	65.93	10.66	18.62	3.86	3.86	64.72
Archer Lodge Middle	66.82	12.48	17.49	2.17	2.17	39.37
Riverwood Middle	65.02	17.70	10.95	4.36	4.36	26.58
Selma Middle School	12.16	31.76	54.26	1.27	1.27	87.52
Smithfield Middle	21.49	28.20	44.97	4.12	4.12	83.11
Clayton Middle	53.49	20.03	20.70	4.17	4.17	40.98

¹² U.S. Census, 2010 Census.

¹³ NC DPI, 2016-2017 Statistical Profile Online, Table 10.1 Pupils in Membership by Race and Sex
<http://apps.schools.nc.gov/statisticalprofile>

Table 2						
2016-2017 District-Wide Racial Demographics						
HIGH SCHOOLS	% WHITE	% BLACK	% HISPANIC	% TWO OR MORE	% INDIAN	% FRL
Clayton High	54.28	25.93	14.57	3.89	3.89	32.06
Cleveland High	63.91	17.26	12.31	4.83	4.83	25.93
Corinth Holders High	70.73	10.68	14.25	3.01	3.01	23.85
North Johnston High	60.68	14.16	22.47	1.83	1.83	49.57
Princeton High	71.99	10.06	14.52	3.01	3.01	53.08
Smithfield-Selma	29.09	27.91	39.09	2.74	2.74	72.69
South Johnston High	61.58	11.78	23.31	2.44	2.44	49.59
West Johnston High	67.57	10.98	17.61	3.06	3.06	30.74
District Totals	56.79	15.94	22.88	3.27	3.27	47.67

In addition to being racially isolated, the predominantly nonwhite Smithfield-Selma area schools and the predominantly white schools like Corinth Holders and Cleveland High are also segregated socioeconomically.¹⁴ 47.6% of all students in Johnston County are FRL eligible. At Smithfield and Selma Middle Schools, over 80% of the students qualify for FRL. Selma Middle has the highest FRL percentage of all middle or high schools in the district, at 87%. Meanwhile, the FRL populations are all below 30% at Cleveland Middle, Cleveland High, Riverwood Middle and Corinth Holders High. This uneven distribution reflects a pattern of concentrated high poverty, racially isolated schools in the Smithfield-Selma area.

b. Student Performance¹⁵

As shown in the tables below, Smithfield-Selma area schools have among the lowest overall grade level proficiency among students, and also show significant racial achievement gaps. At Smithfield-Selma, 72.6% of white students are grade level proficient – on par with the higher performing schools in the district and higher than the district average of 64%. However, only 28% of black students are grade level proficient, which is substantially lower than the district average of 40%.¹⁶

¹⁴NC DPI, 2016-2017 FRL Application Data. <http://www.dpi.state.nc.us/fbs/resources/data/>

¹⁵ Student performance is measured by End of Grade tests for Elementary and Middle School students, and End of Class tests for High School students. In order to be considered “Grade Level Proficient”, a student must score at Level 3 or higher (or Level 4 or higher for College and Career Ready).

¹⁶ North Johnston Middle and South Johnston High also show serious performance deficiencies among black students.

Table 3. Overall EOG Scores, Grade 8¹⁷						
Percentage of Grade Level Proficient Students (Level 3 and above)						
School Name	Total	White	Black	Hispanic	EDS	LEP
Benson Middle	45.4	54.8	34.3	33.9	37.0	<5
Cleveland Middle	71.5	77.8	47.4	62.7	54.2	13.0
Four Oaks Middle	50.9	60.0	31.0	42.7	39.9	12.1
North Johnston Middle	42.9	54.1	17.8	34.9	33.7	7.9
McGee's Crossroads Middle	54.0	60.9	40.6	39.7	38.3	6.8
Archer Lodge Middle	57.0	64.8	39.1	40.0	41.4	11.2
Riverwood Middle	67.1	75.3	45.7	56.2	46.4	9.5
Selma Middle School	34.3	51.0	27.2	35.6	32.8	7.0
Smithfield Middle	46.3	53.4	36.7	48.1	43.4	20.4
Clayton Middle	53.5	63.6	36.2	45.6	37.7	15.9
District Totals	58	68.4	39.1	45.8	43.5	20.8

Table 4. Overall EOC Scores¹⁸						
Percentage of Grade Level Proficient Students (Level 3 and above)						
School Name	Total	White	Black	Hispanic	EDS	LEP
Clayton High	67.4	76.8	48.4	51.7	44.5	5.3
Cleveland High	72.1	79.8	50.3	58.3	50.0	14.8
Corinth Holders High	67.8	75.0	41.4	52.3	48.9	12.8
Princeton High	68.8	71.2	52.2	69.8	61.6	*
Smithfield-Selma High	45.6	72.6	28.1	40.1	38.7	5.7
South Johnston High	42.0	53.4	13.7	30.7	30.5	9.8
North Johnston High	49.1	58.3	26.5	40.8	35.6	17.4
West Johnston High	66.1	72.7	53.9	48.6	51.2	<5
District Totals	64.0	74.2	40.9	49.1	46.0	9.4

¹⁷ NC DPI, 2016-2017 Drilldown Performance Data, Overall EOC scores for High Schools, with percentages of students at Grade Level Proficiency, <http://www.ncpublicschools.org/accountability/reporting/> “EDS” means “economically disadvantaged” and “LEP” means “Limited English Proficiency.”

¹⁸ NC DPI, 2016-2017 Drilldown Performance Data, Overall EOC scores for High Schools, with percentages of students at Grade Level Proficiency, <http://www.ncpublicschools.org/accountability/reporting/>. An * indicates a school does not have tested grades/sufficient data for reporting

Table 5. School Performance Grade & EVAAS Growth ¹⁹				
School Name	Title I School	School Performance Grade (SPG)	SPG Score	EVAAS Growth Status
Benson Middle	Y	D	50	NotMet
Cleveland Middle		B	74	Met
Four Oaks Middle	Y	C	57	Met
North Johnston Middle	Y	D	50	Met
McGee's Crossroads		C	56	NotMet
Archer Lodge Middle		C	58	NotMet
Riverwood Middle		B	73	Exceeded
Selma Middle School	Y	D	40	NotMet
Smithfield Middle	Y	C	56	Exceeded
Clayton Middle		C	59	Met
Clayton High		B	75	NotMet
Cleveland High		B	76	NotMet
Corinth Holders High		B	77	Met
North Johnston High		C	64	NotMet
Princeton High		B	73	Exceeded
Smithfield-Selma High	Y	C	59	NotMet
South Johnston High		C	60	NotMet
West Johnston High		B	72	NotMet

North Carolina has established a School Performance Grade system that measures both student test outcomes and academic growth over the year according to the SAS Education Value-Added Assessment System (EVAAS). Smithfield Selma High has the lowest SPG score of any High School in the district, and Selma Middle of any Middle School. NC DPI expressly recognized the direct correlation between performance and concentrated school poverty, noting that 69% of schools that got a C, 92% that got a D, and 98% that got an F had over 50% FRL eligible students. All of the Smithfield Selma area schools are Title I schools, a federal designation that identifies high poverty schools and provides them with additional resources to address student outcomes.²⁰

Lower percentages of grade level proficient students do not necessarily translate to lower student graduation rates. While the district graduation average is 92% of the cohort that entered school in 2013-2014 graduating in 4 years, Smithfield-Selma had one of the lowest

¹⁹ "Performance and Growth of North Carolina Public Schools" www.ncpublicschools.org/docs/accountability/reporting/2017/documentation/exsumm17.pdf

²⁰ <https://www2.ed.gov/programs/titleiparta/index.html?exp=o>

graduation rates in the district, with 87.9%.²¹ In 2016-17, Smithfield-Selma had 44 students drop out before graduation, twice the number of the next highest school.²²

Table 6. Cohort Graduation Rate							
School Name	Total	White	Black	Hispanic	2 or More	EDV	LEP
Clayton High	>95	>95	>95	92%	92%	91.9	*
Cleveland High	>95	>95	>95	84.8	93.8	93	60
Corinth Holders High	93.7	>95	90.7	87.5	88.9	89.7	66.7
North Johnston High	90.5	91.4	86.2	89.7	*	91.6	77.8
Princeton High	88.9	89.2	85.7	87.5	*	83.3	*
Smithfield-Selma High	87.9	92.3	88.2	81.8	>95	85.3	66.7
South Johnston High	94.3	>95	92.5	90.4	*	92.5	80
West Johnston High	87.9	92.7	73.3	83	70	81.3	83.3
Johnston County Schools	92	94.7	89.1	86.9	88.6	88.2	73.8

c. Teachers

One “input” that the district maintains control over is student access to fully licensed, experienced teachers. Retaining those teachers equitably across the district should be the BOE’s goal. The district average for teachers with advanced degrees is 21% for middle schools and 27% for high schools, but the actual distribution of these teachers is varied. Smithfield Middle and Smithfield Selma High have fairly high rates of licensed teachers, and teachers with advanced degrees, although Selma Middle is below district averages. All of the teachers at Princeton High are fully licensed, with 35% of them also board certified, putting the school high above the district average. Clayton Middle has the lowest percentage of fully licensed teachers in the district, with only 83% of teachers being fully licensed, the lowest of any middle or high school in the district.

²¹ NC DPI, 4-Year Cohort Graduation Rate report, with percentage of students graduating in 2016-2017 or earlier. <http://www.ncpublicschools.org/accountability/reporting/cohortgradrate>.

²² NC DPI, 2016-2017 Annual Dropout Reports by School, Sex, and Race, <http://www.dpi.state.nc.us/research/dropout/reports/>

Table 7. MIDDLE SCHOOL TEACHER STATISTICS, 2016-2017²³								
SCHOOL NAME	Classroom teachers	% Fully-licensed	% w/ Advanced Degree	Nat'l Board Certified	Exp: 0-3 yrs.	Exp: 4-10 yrs.	Exp: 10+ yrs.	Turn-over rate
Archer Lodge	59	88%	31%	4	17%	42%	41%	17%
Benson	32	94%	13%	1	28%	38%	34%	18%
Clayton	52	83%	15%	6	27%	35%	39%	10%
Cleveland	66	97%	26%	3	12%	33%	55%	3%
Four Oaks	33	94%	12%	2	36%	24%	39%	6%
McGees Crossroads	50	94%	22%	0	22%	34%	44%	13%
North Johnston	37	97%	19%	6	14%	32%	54%	7%
Riverwood	70	91%	24%	6	27%	41%	31%	15%
Selma	46	88%	17%	4	30%	33%	37%	16%
Smithfield	54	94%	22%	2	19%	30%	52%	19%
Districtwide	46	92%	21%	3	22%	35%	43%	12%
Statewide averages	41	92%	28%	5	23%	26%	51%	15%

Teacher turnover is another indicator of the District's willingness to commit to maintaining a quality learning environment and retain quality teachers. All the schools in the Smithfield-Selma area have a teacher turnover rate higher than the district average of 12%, with Smithfield Middle losing 19% of their teachers in 2017.

One factor that contributes to teacher turnover and retention is satisfaction with working conditions. In schools with a higher percentage of white students and fewer FRL students, like Corinth Holders (which has one of the lowest turnover rates in the district), the teachers expressed dissatisfaction with class sizes and facilities.²⁴ This likely reflects the continued overcrowding in this school (an additional factor, like diversity, that could be addressed by revising attendance area boundaries). In contrast, teachers in segregated schools have low satisfaction rates in areas relating to student discipline and professional development opportunities for teachers. Notably, the racially segregated schools in the Smithfield Selma area all have high rates of discipline, with over 20 suspensions per 100 students.²⁵

²³ NC DPI, 2016-2017 Report Cards, as compiled by <https://ncreportcards.ondemand.sas.com/landing.html>

²⁴ NC Teacher Working Conditions Survey 2018, <https://ncteachingconditions.org/results>

²⁵ NC DPI, 2016-2017 Short Term Suspensions by School, <http://www.ncpublicschools.org/research/discipline/reports/>

Table 8.
HIGH SCHOOL TEACHER STATISTICS, 2016-2017

SCHOOL NAME	Classroom Teachers	% Fully-Licensed	% w/ Advanced Degree	Nat'l Board Certified	Exp: 0-3 yrs.	Exp: 4-10 yrs.	Exp: 10+ yrs.	Turn-over rate
Clayton	94	94%	22%	8	18%	30%	52%	14%
Cleveland	86	97%	24%	8	16%	35%	49%	16%
Corinth Holders	105	87%	24%	11	22%	30%	49%	9%
North Johnston	56	96%	36%	7	11%	16%	73%	9%
Princeton	68	100%	35%	14	6%	18%	77%	8%
Smithfield Selma	90	92%	30%	9	18%	23%	59%	14%
South Johnston	79	92%	23%	9	22%	28%	51%	11%
West Johnston	83	94%	28%	8	19%	18%	63%	8%
District-wide	57	93%	27%	6	18%	27%	55%	12%
Statewide	53	90%	26%	7	21%	24%	55%	15%

e. Capacity and Enrollment

Responses in the Teacher Working Condition Surveys frequently cite concerns about both the capacity and the quality of facilities. In an overcrowded school or one with outdated resources, students and teachers both struggle to work productively. The newest schools in the district are Swift Creek Middle, which was opened in 2017, and Corinth Holders and Cleveland High Schools, which were both opened in 2010. All are in the western portion of the county. While high school capacity is discussed more fully later in this report, with regard to middle schools, Cleveland, Archer Lodge, and Riverwood are over capacity, while five middle schools are under 80% of capacity.²⁶ Moving students to under-enrolled schools could be a way to address efficient facilities use, racial and socioeconomic segregation, and bring additional resources to lower performing schools.

GROWTH AND SCHOOL ATTENDANCE AREAS

School growth and student distribution in Johnston County is driven by population change. According to the News & Observer in April, 2018:

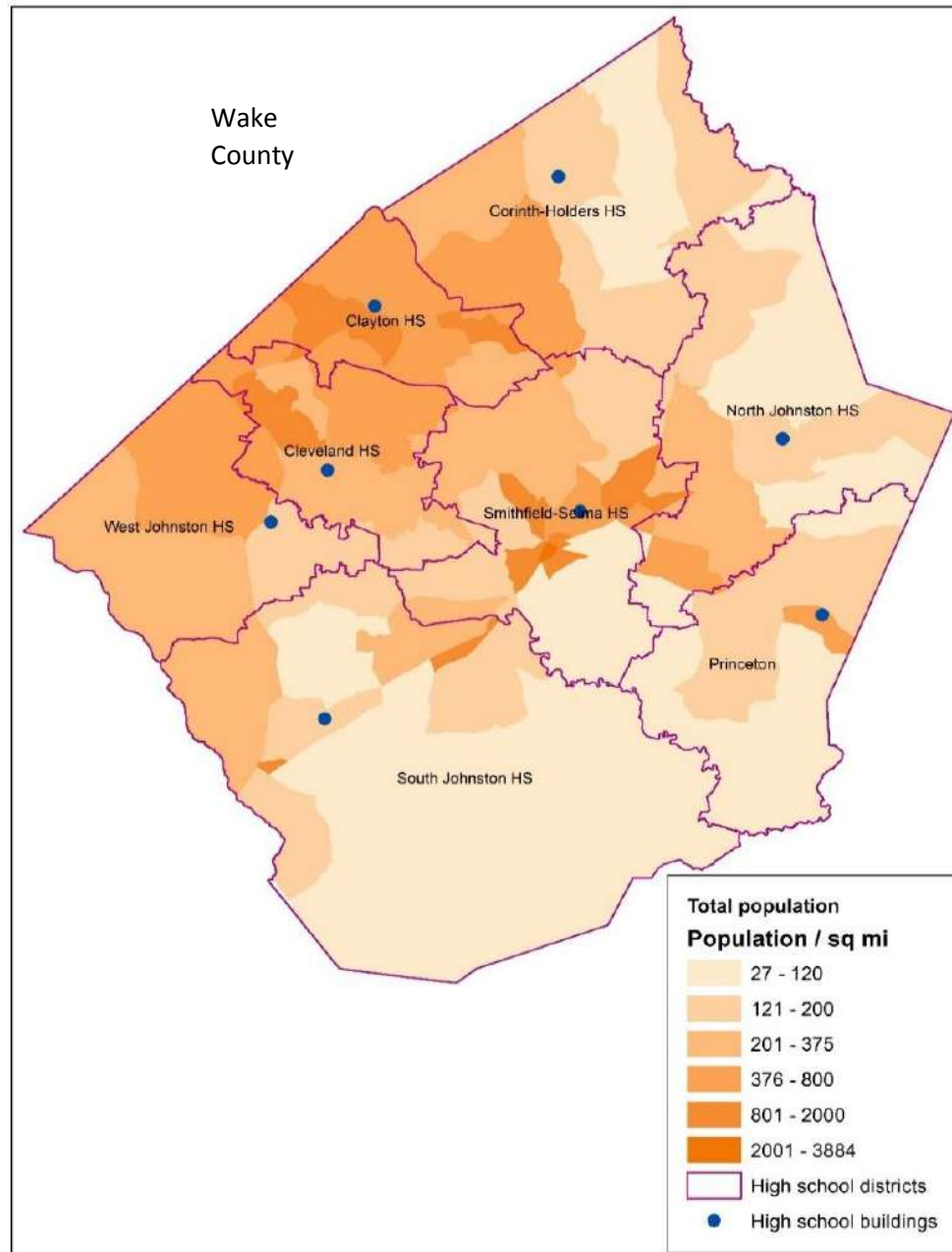
Johnston County was the third fastest-growing county in North Carolina last year, at 2.94 percent. Its growth outpaced that of Wake County, which was ninth at 2.2 percent. Much of the growth is happening in western Johnston, which borders Wake.²⁷

²⁶ JCS Out of Capacity Worksheets 2008 – 2018.

²⁷ Linford, Autumn, "Fast-growing Johnston County wants to build more schools, including a high school," News and Observer, April 23, 2018.

While Wake County and the Research Triangle are the employment driver, residential growth is moving into western Johnston County, as the housing there is much more affordable. The median list price per square foot in Johnston is \$114 vs. \$136 in the Raleigh Metro Area and \$150 in the City of Raleigh.²⁸ The pattern of overall growth in the areas closest to Wake County can be seen in Figure 1 (2012-2016 ACS).

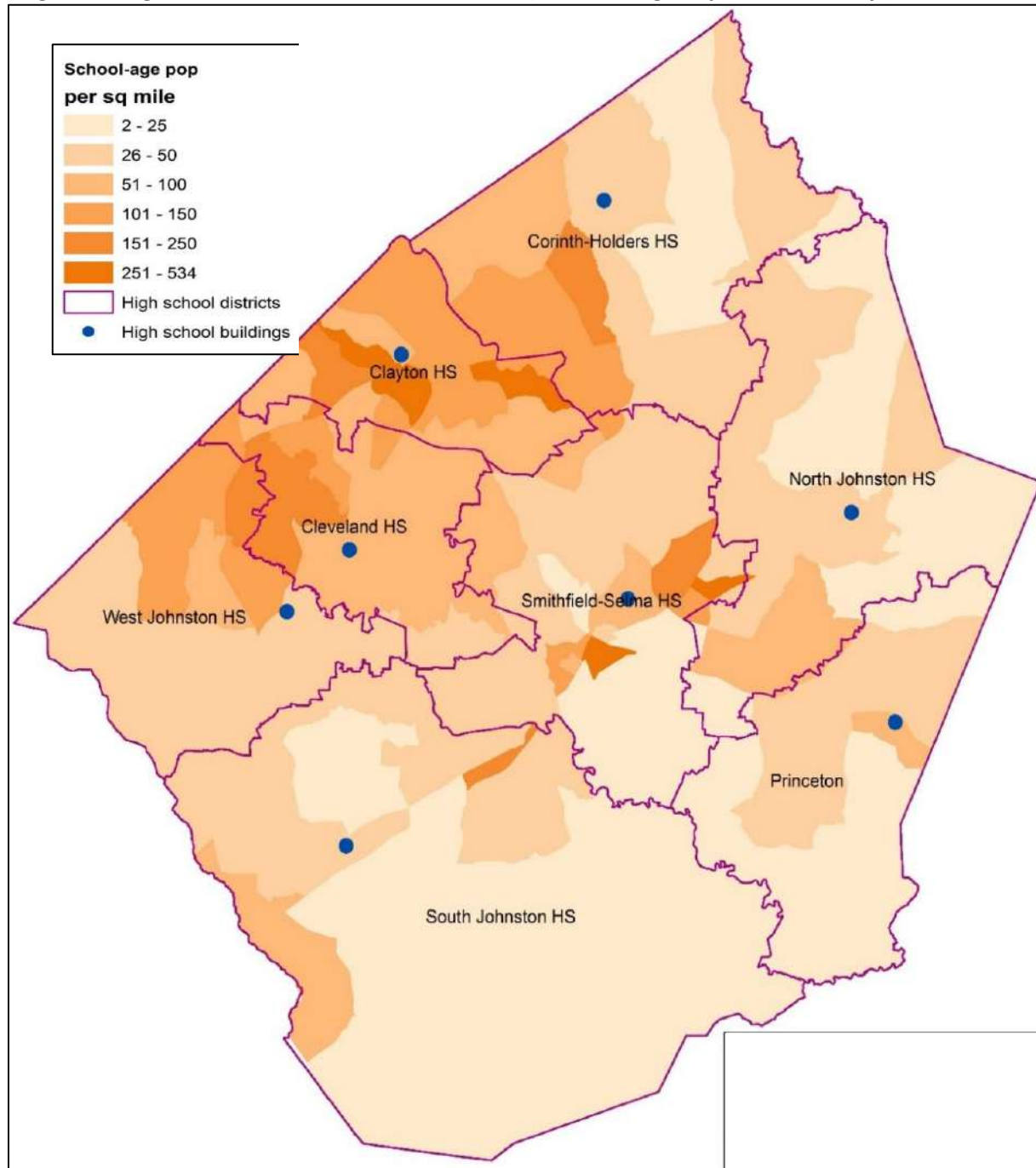
Figure 1. High School Attendance Areas (2016-17) x Total Population Density (2012-2016 ACS)



²⁸ Zillow, <https://www.zillow.com/johnston-county-nc/home-values/> accessed 6/12/2018.

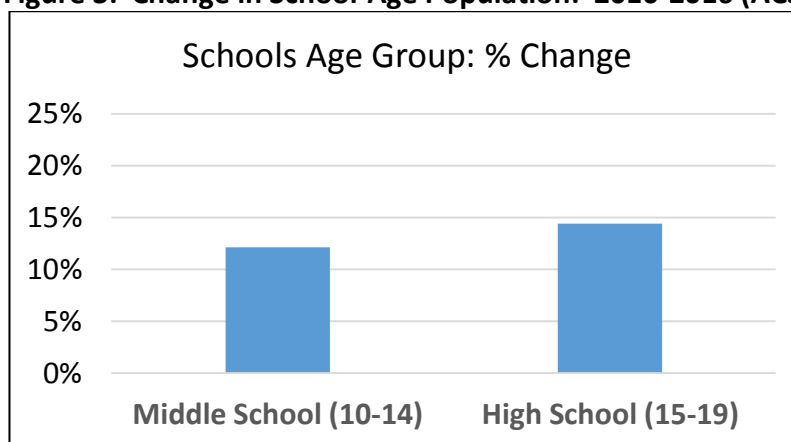
As shown below, the school-age population distribution continues to mirror the distribution of the total population:

Figure 2. High School Attendance Areas (2016-17) x School-Age Population Density (2012-2016 ACS)



While the population 10-to-14 years old is larger than the 15-to-19-year old population, the older group has been growing faster than the younger (averaging 2.0% per year versus 2.3% per year)

Figure 3: Change in School-Age Population: 2010-2016 (ACS)



In a 2015 report, Johnston County Schools Superintendent Ed Croom stated “We are growing about a school a year in this county.”²⁹ At that time, according to the report, 11 of Johnston County Schools’ 22 elementary schools were overcrowded, along with 7 out of 9 middle schools and 2 out of 11 high schools.

SCHOOLS OUT OF BALANCE

As the figures below show, Johnston County’s schools are significantly out-of-balance in relation to racial and socioeconomic demographics, attendance versus capacity, and residential assignment in attendance areas (that is, the number and demographics of students that live in the attendance area, which is a different metric than just looking at the number actually attending a school and the school building’s capacity—i.e., number of seats).

²⁹ WRAL, “Growth brings concern, overcrowding for Johnston County Schools,” Feb. 9, 2015. <https://www.wral.com/growth-brings-concern-overcrowding-for-johnston-county-schools/14436303/> accessed 8/15/2018.

Figure 4. Johnston County High Schools: Attendance Area % Minority (2010)

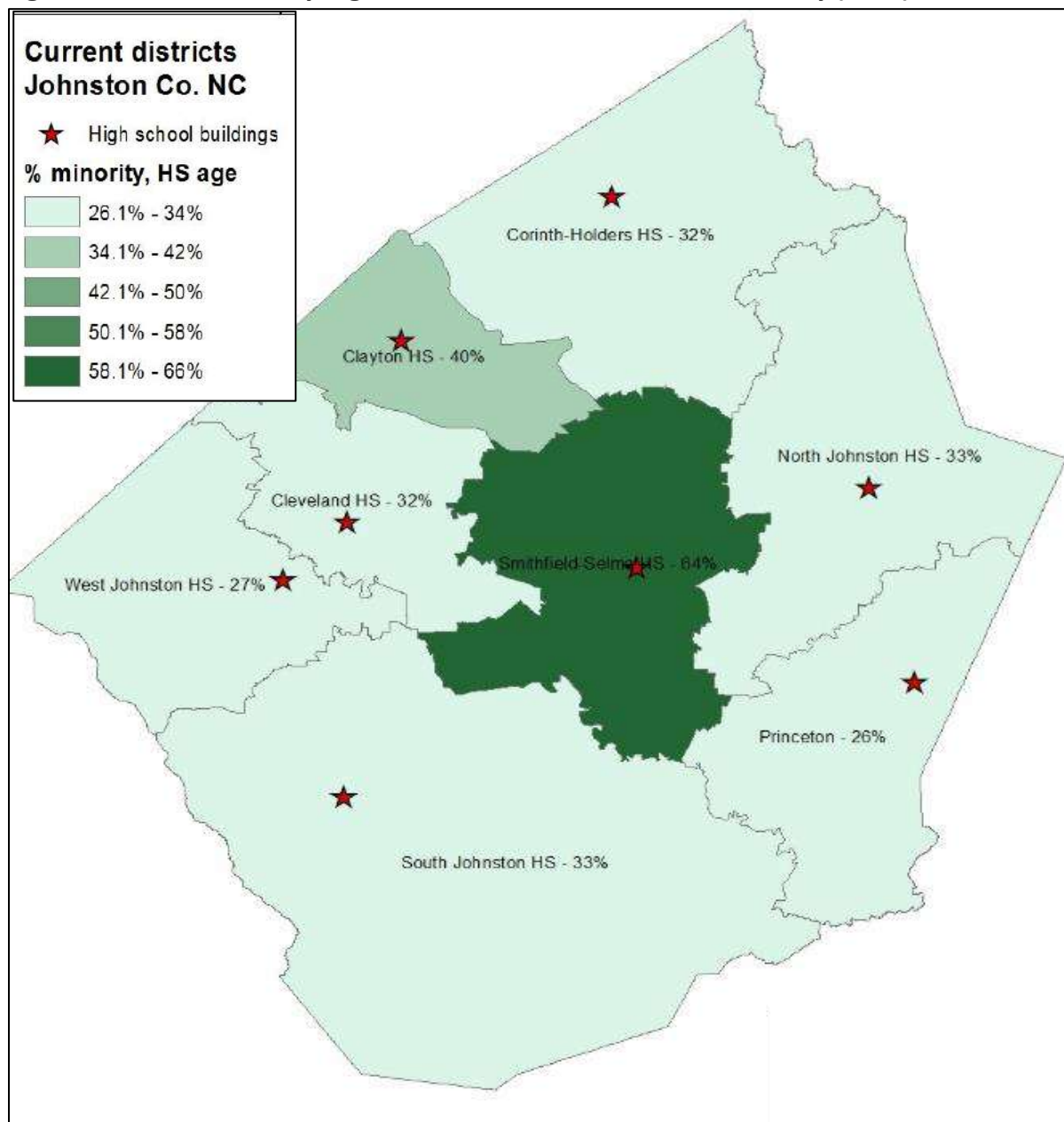
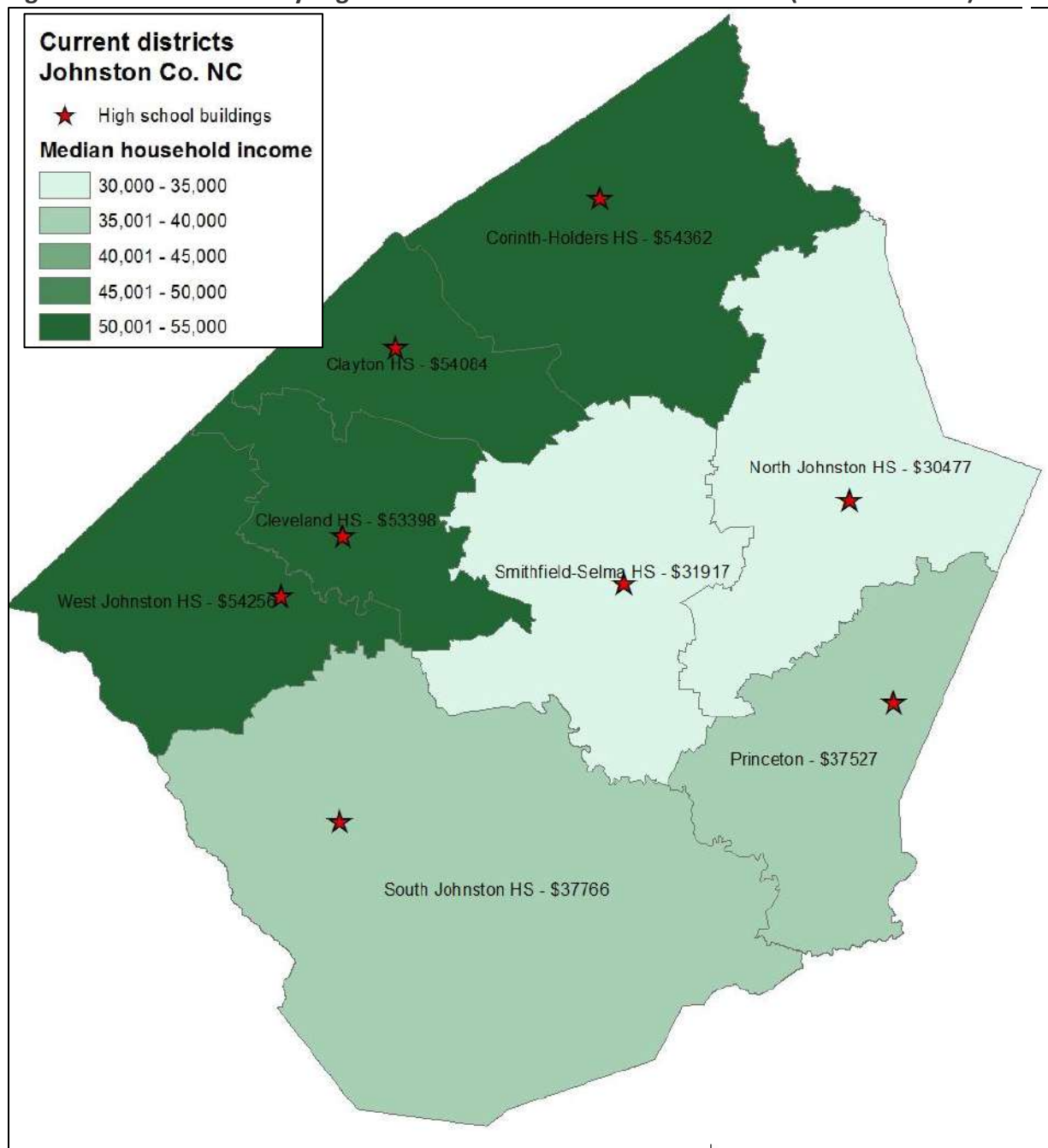


Figure 5. Johnston County High Schools: Median Household Income (2012-2016 ACS)



ATTENDANCE AREA AND SCHOOL CAPACITY

Capacity must be viewed through the lens of the students who live in the assignment area as well as the students who attend the public school located in that assignment area. As shown below, these are not the same thing. In addition to students who attend public magnet and public charter schools (which have no assignment area) and private schools, there is no one-to-one correlation between students living in the assignment area and

those attending the school because JCS historically maintained a modified open transfer policy.³⁰ The ramifications of this policy are analyzed below.

Both Corinth-Holders and Cleveland High Schools were built in 2010 to accommodate the growth in the northwestern section of the County. At that time, school attendance areas were re-drawn to include these new schools. By the most recent school year (2017-2018), both Cleveland and Corinth-Holders were both severely over-capacity (140% and 160%, respectively), while Clayton High (which lies between the new high schools and is closer to Raleigh) was only 88.8% of capacity.

Table 9 below illustrates the relationship between students who attended particular high schools in 2017-2018 and the capacity of those schools.

Table 9. Johnston County High Schools: Attendance and Capacity (2017-2018)³¹

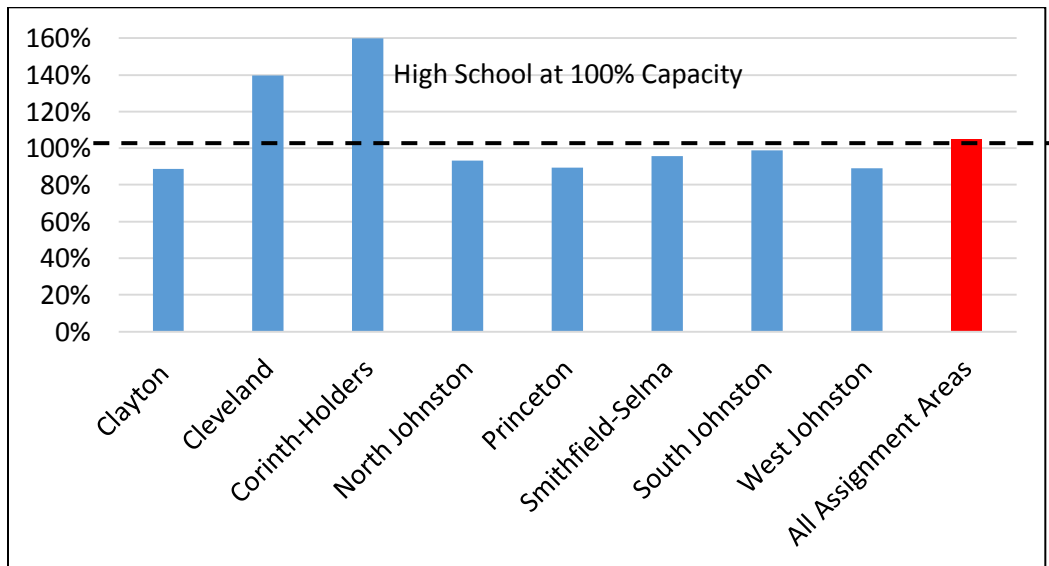
High School Attendance Area	2017-2018 Student Attendance	Current Capacity (2018)	Current Attendance v. School Capacity	Attendance as % of School Capacity (2017-2018)
Clayton	1,776	2,000	224	88.8%
Cleveland	1,678	1,200	-478	139.8%
Corinth-Holders	1,919	1,200	-719	159.9%
North Johnston	794	850	56	93.4%
Princeton	984	1,100	116	89.5%
Smithfield-Selma	1,293	1,350	57	95.8%
South Johnston	1,262	1,275	13	99.0%
West Johnston	1,423	1,600	177	88.9%
All HS Attendance Areas	11,129	10,575	-554	105.2%

While the system is somewhat over-capacity overall (averaging 105.2%), Cleveland and Corinth-Holders High are the most over-capacity. All six of the other high schools are approaching capacity, ranging from 89% to 99%. While there seems to be a clear correlation between school-age population density and proximity to Raleigh's employment drivers and the over-capacity of Cleveland and Corinth-Holders High Schools, these factors do not explain the anomalies of this relationship in Clayton, Princeton and Smithfield-Selma High Schools, which all have unexpected excess capacity (Princeton has six grades as opposed to the other high schools' four grades). A comparison of high-school-age residents living in each assignment area to actual student count is informative.

³⁰ Jackson, Drew, "Johnston alters transfer policy, caps 24 schools for next year," News and Observer, April 3, 2017. <https://www.newsobserver.com/news/local/counties/johnston-county/article142344604.html> accessed 8/15/2018.

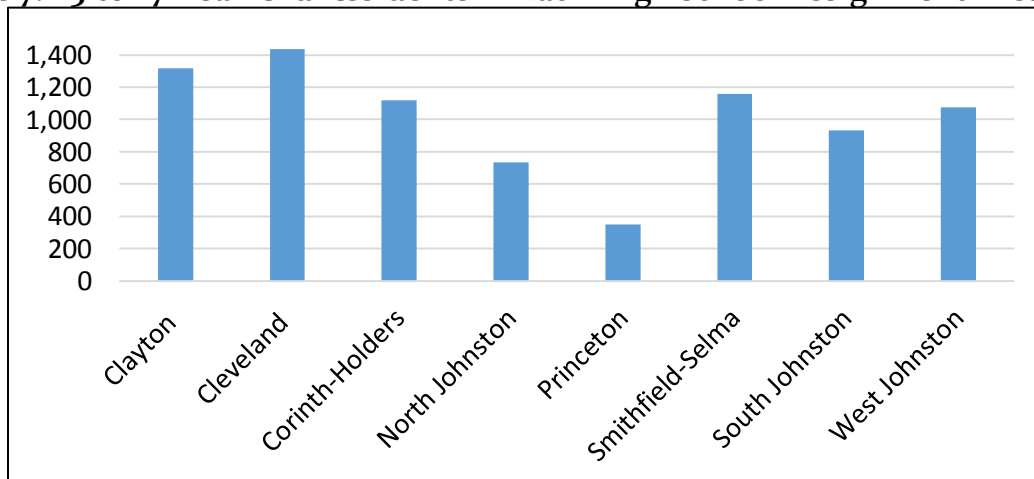
³¹ JCS Out of Capacity Worksheets 2008 – 2018.

Figure 6. Johnston County High Schools: Actual Attendance as a Percent of Capacity (2017-2018)



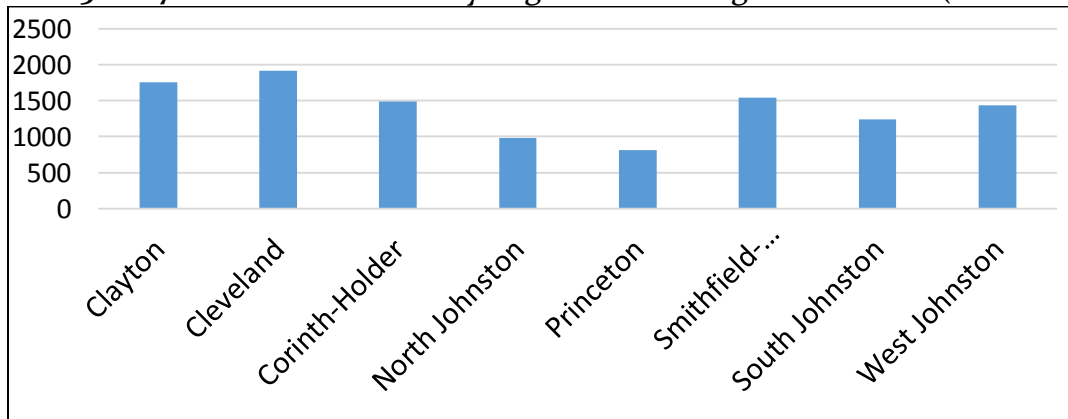
In 2010, the high school age residents living in Clayton High's assignment area were almost equal to Cleveland's and more than in Corinth-Holders.

Figure 7. 15-to-17-Year-Old Residents in Each High School Assignment Area (2010)



This pattern clearly holds when 2012-2016 ACS data is used and the data is scaled to represent four years for most high schools and seven years for Princeton (grades 6-12):

Figure 8. 15-to-17-Yr.-Old Residents by High School Assignment Areas (2012-2016 ACS)



Given the location of Clayton's assignment area, one would expect it to share the over-capacity status experienced by Cleveland. Instead, that student body growth occurred only in Cleveland and Corinth-Holders. Princeton High, on the other hand, has more students than one would expect, given the low number of school age students living in the area in 2010, the density of the assignment area, and the distance from employment centers. This was achieved in part by holding Princeton's assignment area stable but including seven grades (6-12) rather than the four like the other JCS high schools. Both Corinth-Holders and Princeton also both show significant (high white) racial imbalance.

Figure 9. Residential Assignment (2010 and 2012-2016) as a % of School Capacity

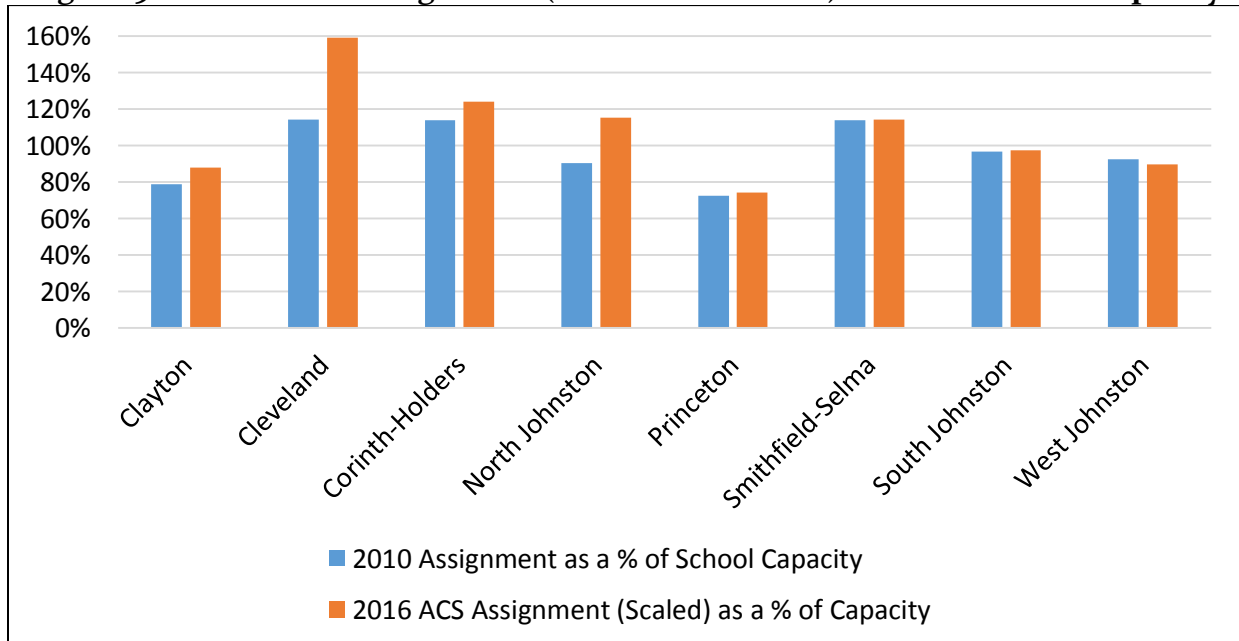


Table 10 and Figure 10 show these relationships for each school. It compares the current assignment area (2012-2016) as a % of capacity, 2017-2018 actual school attendance as a % of capacity, actual attendance (2017-2018) as a percent of assignment area, and provides each assignment area's % minority (2010).

Since the attendance areas have remained static since they were redrawn to accommodate the new high schools in 2010, numerical differences between school assignment area residents and school attendance is a function of growth and/or transfers into a school (students not living in a specific school's assignment area but attending that school, e.g. Corinth-Holders and Princeton) or transfers from a school (e.g. Smithfield Selma and Cleveland). In most schools, the over-capacity (grey line vs. dotted red line) is not due solely to the subscription by school assignment area, but also reflects that those schools do not accommodate all the students living in their assignment area. Oversubscription means there are more students in the attendance area than attend the school (which means those students are going somewhere else); undersubscription means there are fewer students in the attendance area than attend the school (which means students are coming in from outside the area). These descriptions are distinct from the question of the school's capacity, which is based on the number of students in the school and the number of seats available in the building.

Table 10. Current Attendance (2017-2018) in Relation to Residential Assignment (2012-2016) and Current Capacity and % Minority (2010)

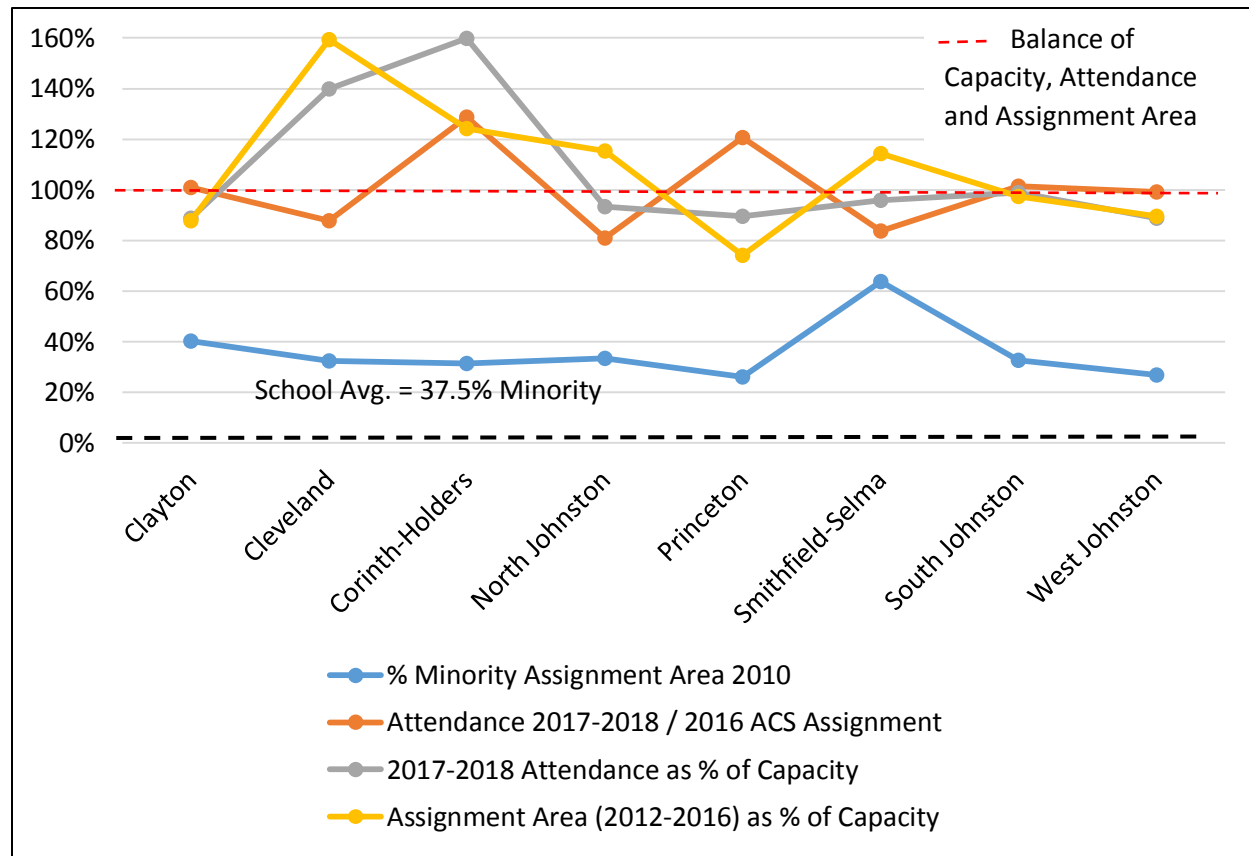
High Schools	% Minority Assignment Area 2010	Attendance 2017-2018 / 2016 ACS Assignment ³²	2017-2018 Attendance as % of Capacity ³³	Assignment Area (2012-2016) as % of Capacity ³⁴
Clayton	40.2%	101.1%	88.8%	87.9%
Cleveland	32.5%	87.8%	139.8%	159.3%
Corinth-Holders	31.4%	128.7%	159.9%	124.3%
North Johnston	33.5%	81.0%	93.4%	115.3%
Princeton	26.2%	120.6%	89.5%	74.2%
Smithfield-Selma	63.8%	83.8%	95.8%	114.3%
South Johnston	32.8%	101.6%	99.0%	97.4%
West Johnston	27.0%	99.2%	88.9%	89.7%

³² Student import/export through transfers, attendance of charter or private schools, or home-schooling.

³³ Over/under capacity given the attendance figures for the 2017-2018 school year.

³⁴ Over/under subscribed, given the residents living in the assignment area as compared to the capacity of the school.

Figure 10. Current Attendance (2017-2018) in Relation to Residential Assignment (2012-2016) and Current Capacity and % Minority (2010)



The stories told by this graph must be interpreted for each school:

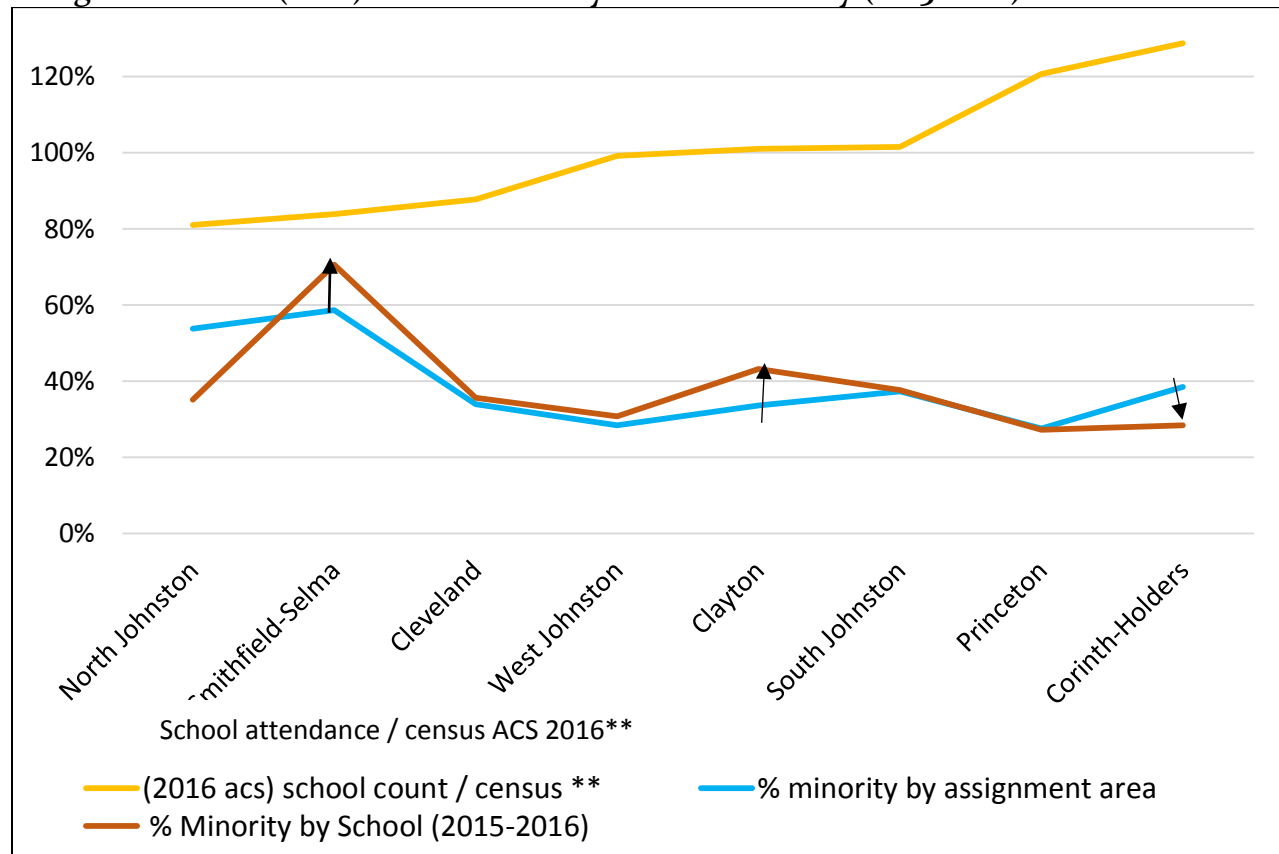
- **Clayton High** shows a similarity between attendance and assignment area, and both are under the high school's capacity. The school has the second-highest percentage of minority students of the County's high schools.
- **Cleveland High** is oversubscribed. Its actual attendance is only 88% of its assignment area numbers. This means that students are transferring out or attending charter or private schools. This may be partially a function of its over-capacity status (140%). The the assignment area was 114.2% of capacity in 2010, when it was built.
- **Corinth-Holders High** was also too small for the population of attendance area when built (113.9%), and this situation has only worsened: it is now at 128.7%. Attendance is even higher: 159.9%. of capacity. This shows a large import of students from other assignment areas.
- **North Johnston High** was near capacity (96.9%) when the two newest high schools were built. Attendance was only 81.0% of assignment area in 2017-2018, however – possibly because this is a low-performing school. While the assignment

area residents are 115.3% of the school's capacity, actual attendance is only 93.4% of capacity (again, because of an export of students).

- If only those residents living in **Princeton High's** assignment area attended the school (for all seven grades served 2012-2016), it would have been at 74.21% of the school's capacity. However, attendance was 120.6% of the assignment area for 2017-2018 (indicating many transfers into the school), but this still only brought the school to only 89.5% of its capacity. Princeton is one of the most out-of-balance schools in the system, and the lowest percent minority (26.2%).
- If all of the high-school-age residents in **Smithfield Selma High** attended the school, the school would be over-capacity (114.3% attendance area vs. school capacity), yet the two newest high schools were placed so that they were unlikely to draw students from this high school (other than transfer students who could provide their own transportation. The school is over-subscribed: attendance is only 83.8% of the attendance area. It is also the school with the highest percent minority assignment area (63.8%) and the highest percent minority student body (71%), showing white flight.
- **South Johnson** and **West Johnson High Schools** have assignment areas that are somewhat whiter than the district (32.8% and 27.0% vs. 37.5% district average for students of color), and the size of their student bodies closely resembles the number of residents in their assignment areas. South Johnston is essentially at full capacity (99.0% 2017-2018) and West Johnston – which lies further from the growth area of the county – is at 88.9%.

We see that Princeton, Corinth-Holders and Smithfield-Selma are the most out-of-balance schools. The comparison of their attendance to their assignment areas shows this is not solely a function of growth. What accounts for the disparities shown above? The District's transfer policy, discussed above, allows some students to choose a school other than their assigned "home" school. This tends to advantage those who have the means to provide their own transportation. This group is more likely to be those who are higher-income and more likely to be white. This is reflected in the racial and ethnic balance and imbalance of the County's schools.

Figure 11. Over-subscription (ACS 2012-2016) by % Minority of Residents in Assignment Area (2010) and % Minority in Student Body (2015-2016)



By drawing assignment areas which are predominantly-white (e.g. Corinth-Holders) and others which are predominantly-non-white (e.g. Smithfield-Selma,) and by its transfer policy, JCS sets up a situation where some schools become even more segregated over time (↕).³⁵ This is illustrated in Figure 11, above.

What is not considered in the graph above is residential choice (families which chose their home's location based upon school assignment area). Studies have shown that predominantly white schools are perceived as better-performing (and often are, due to factors such as education of parents, language spoken in the home, higher family incomes, etc.).³⁶ Those who can afford it choose to live near those predominantly white

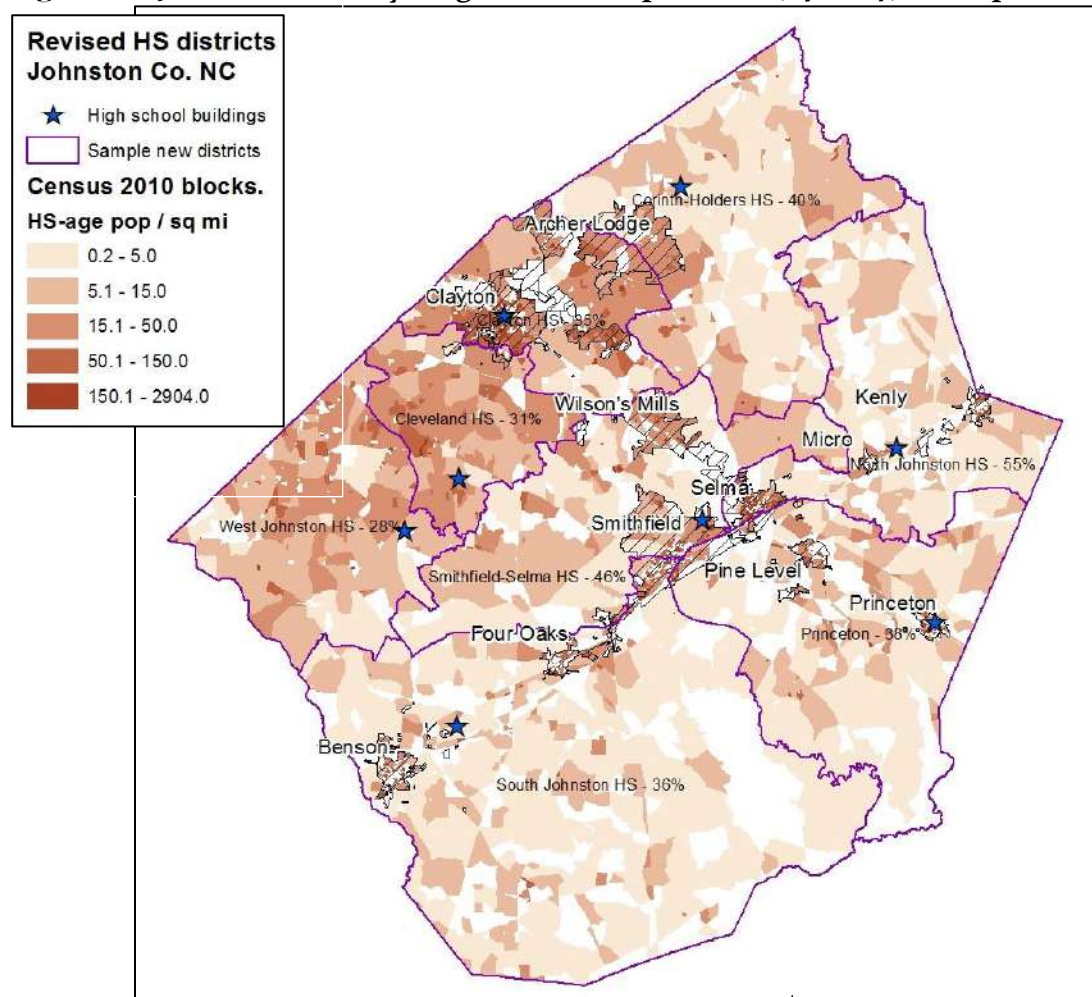
³⁵ Data provided by the school district shows that this policy impacted facility use, student demographics, and racial segregation in the Smithfield-Selma area schools. Student transfer data provided show significant numbers of students transferring out of the Smithfield-Selma attendance area each year from 2004-05 through 2014-15, which accounted for approximately 20% of all transfers across the district. During the period when the district also monitored the race of transfer students, the data show that white students accounted for the vast majority-- over 75% each year-- of transfers out of the Smithfield-Selma area.

³⁶ Barton, P., and Coley, R. (2009). Parsing the Achievement Gap II. Princeton, NJ: Educational Testing Service.

schools, further segregating the District. This is why the Board must take positive steps to draw attendance areas and site schools to prioritize demographic diversity, as well as limit intra-district transfers. Such measures give the Board a higher degree of control over school segregation, facilities use, and related educational outcomes.

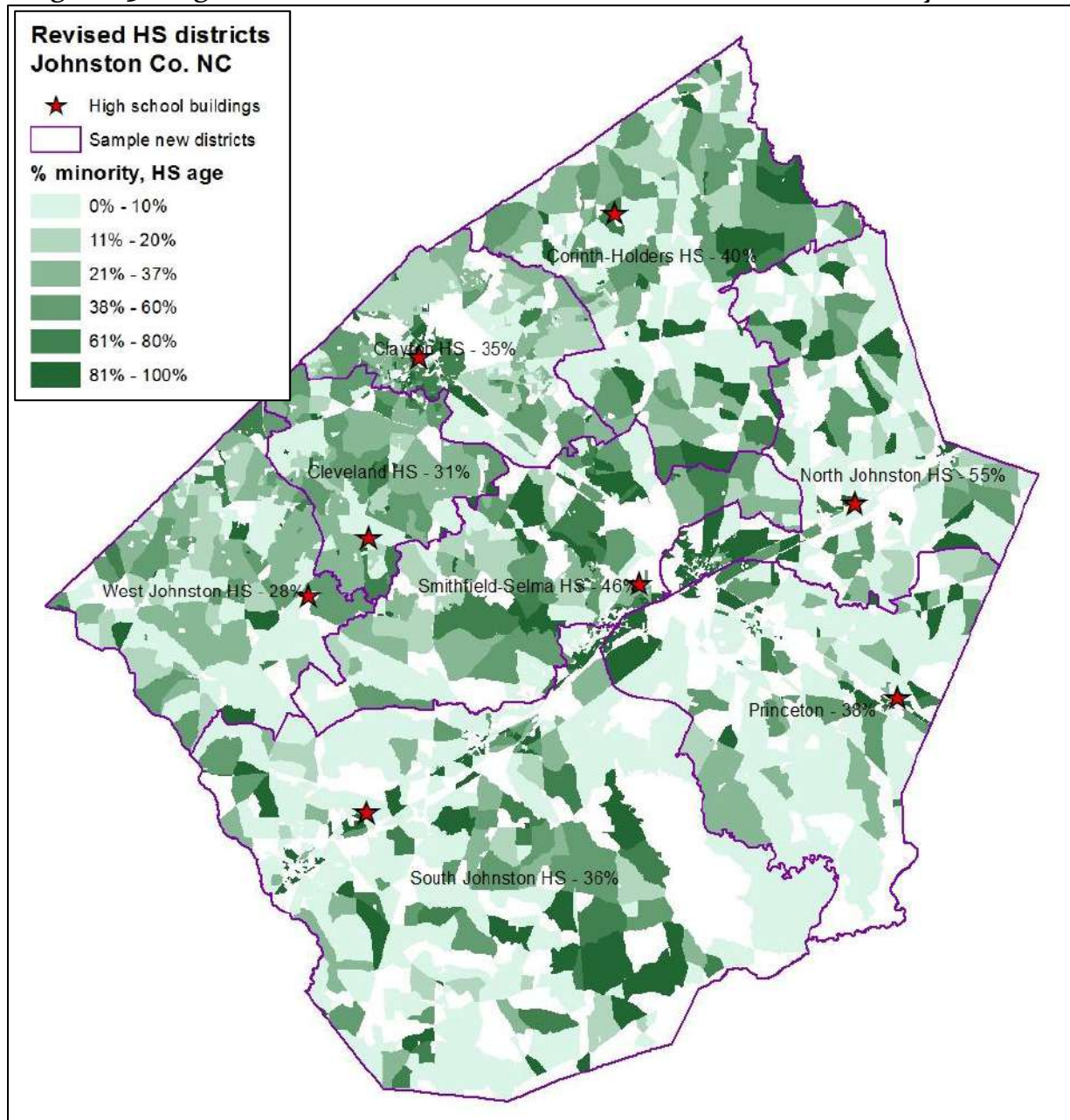
Because the growth of the county is spread across its northwestern section and the original urban population resides in the center of the county, it is not hard to re-balance the school assignment areas, as illustrated in this sample revision.

Figure 12. Johnston County: High School Population (14-to-17) Per Square Mile (2010)



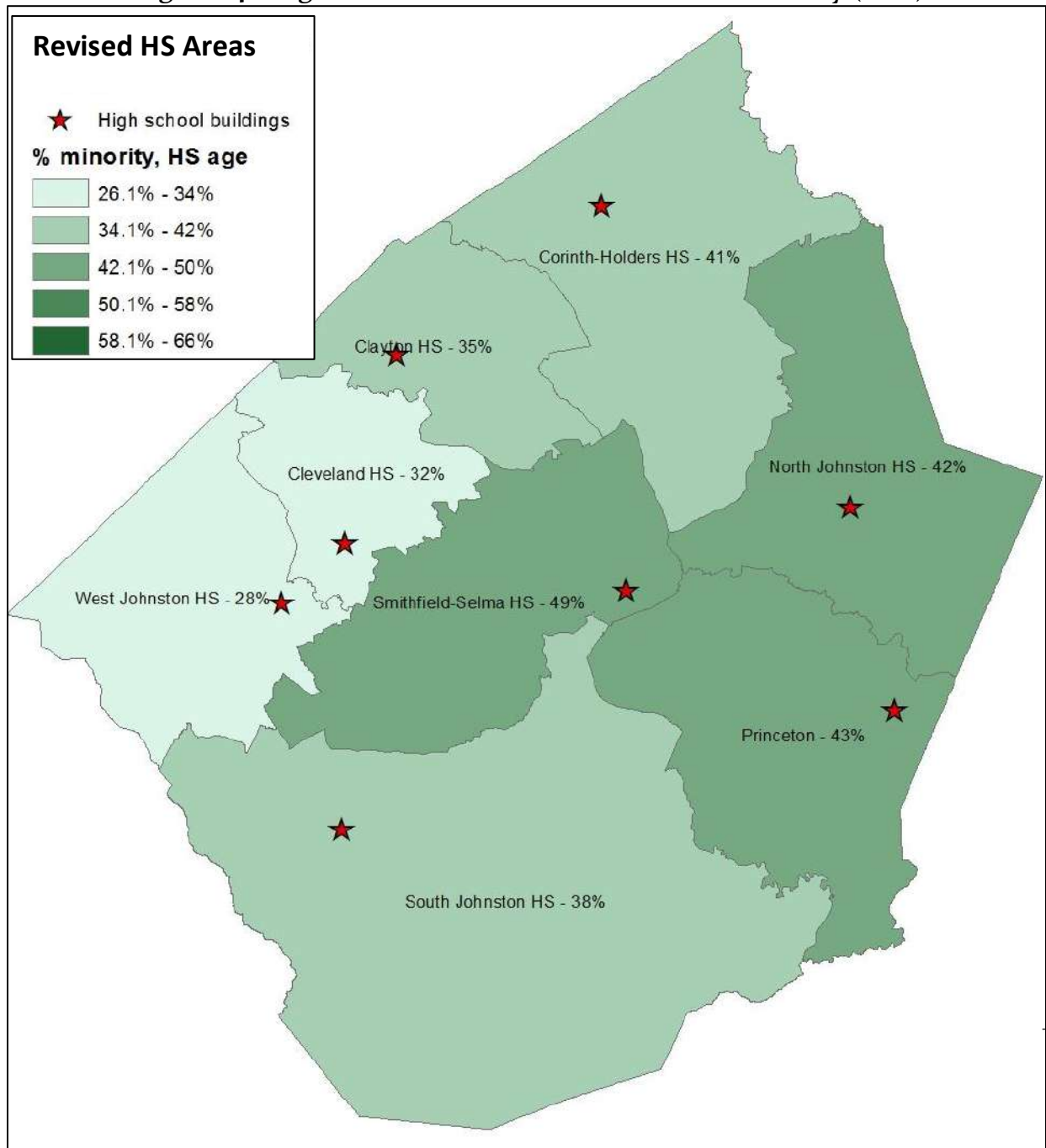
Similarly, the distribution of non-white residents facilitates balancing the schools. Current technology (Geographic Information Systems or GIS) allows the creation of scenarios which consider population by age, race and income (or any other factor of interest measured at the block group level). Figure 13 below illustrates one such scenario for Johnston County:

Figure 13. High School District Revision and Distribution of Minority Residents



This scenario shows the ease with which one can change the balance of the County's schools.

Figure 14. High School District Revision and % Minority (2010)

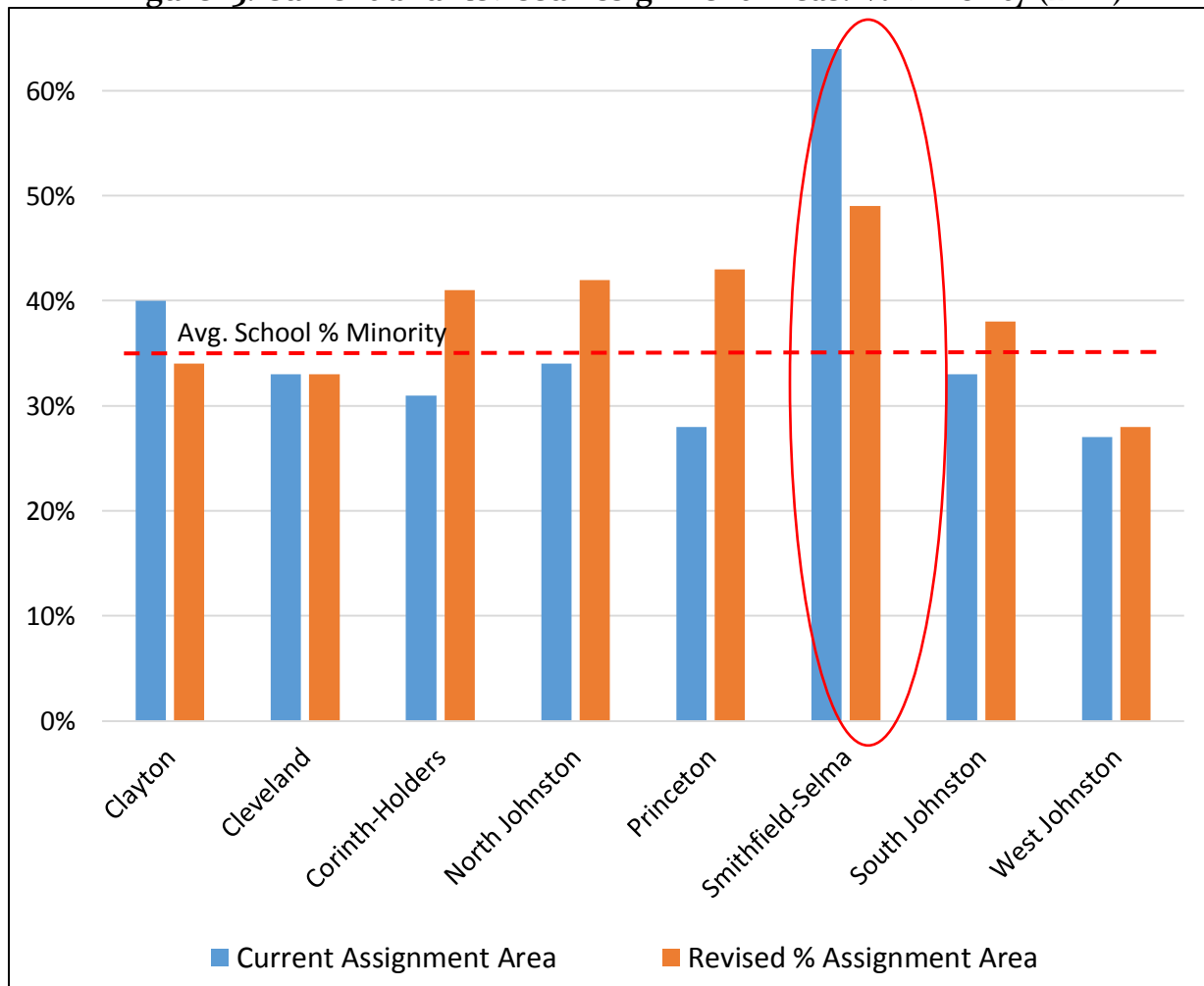


The scenario above prioritized reducing the minority percentage assigned to Smithfield-Selma High School, which at 64% minority in the assignment area apparently exceeds a “tipping point” at which white flight occurs (while the assignment area was 64% minority, school attendance was 71% minority in 2015-2016).

Table 11. Current and Revised Assignment Areas: % Minority (2010)

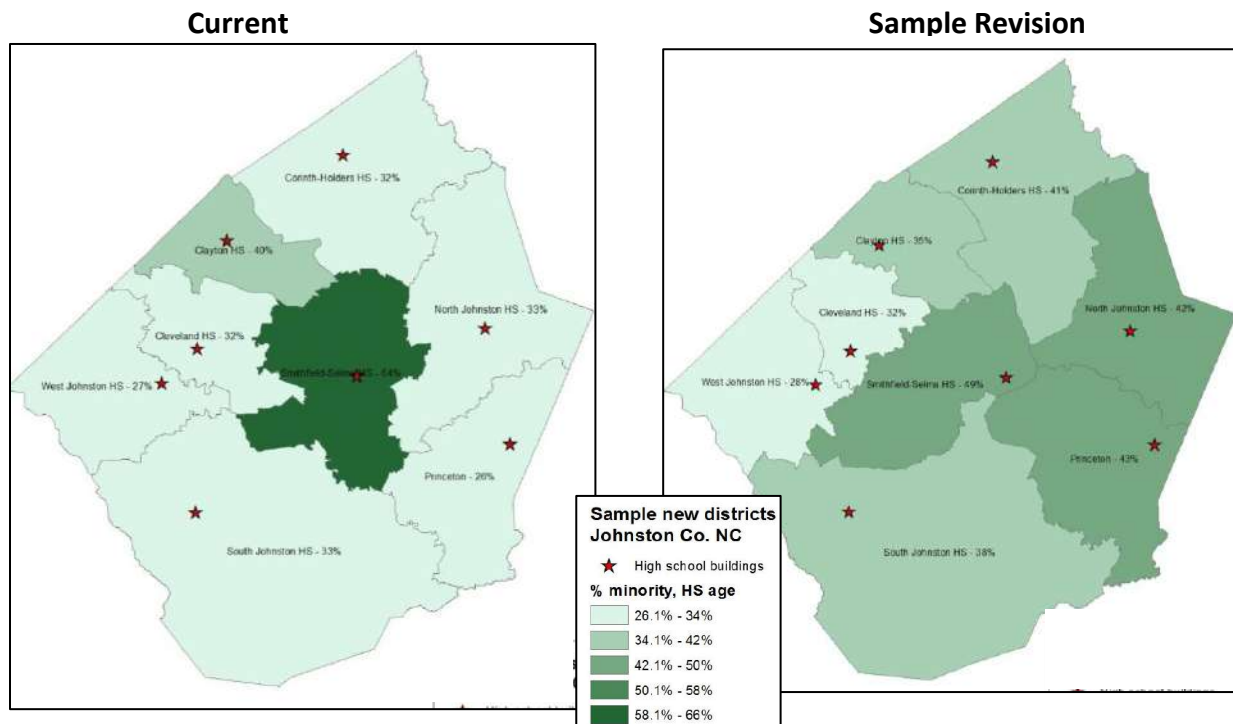
	% Minority	
High School	Current Assignment Area	Revised Assignment Area
Clayton	40%	34%
Cleveland	33%	33%
Corinth-Holders	31%	41%
North Johnston	34%	42%
Princeton	28%	43%
Smithfield-Selma	64%	49%
South Johnston	33%	38%
West Johnston	27%	28%

Figure 15. Current and Revised Assignment Areas: % Minority (2010)



Figures 16, 17, and 18 illustrate these changes in assignment areas.

Figure 16. Current and Revised Assignment Areas: % Minority (2010)



Such revisions must consider other factors which affect performance, such as income and school capacity. The figures below illustrate the effect this sample revision would have on median household income for each assignment area.

Figure 17. Current Assignment Areas: Median Household Income (2012-2016)

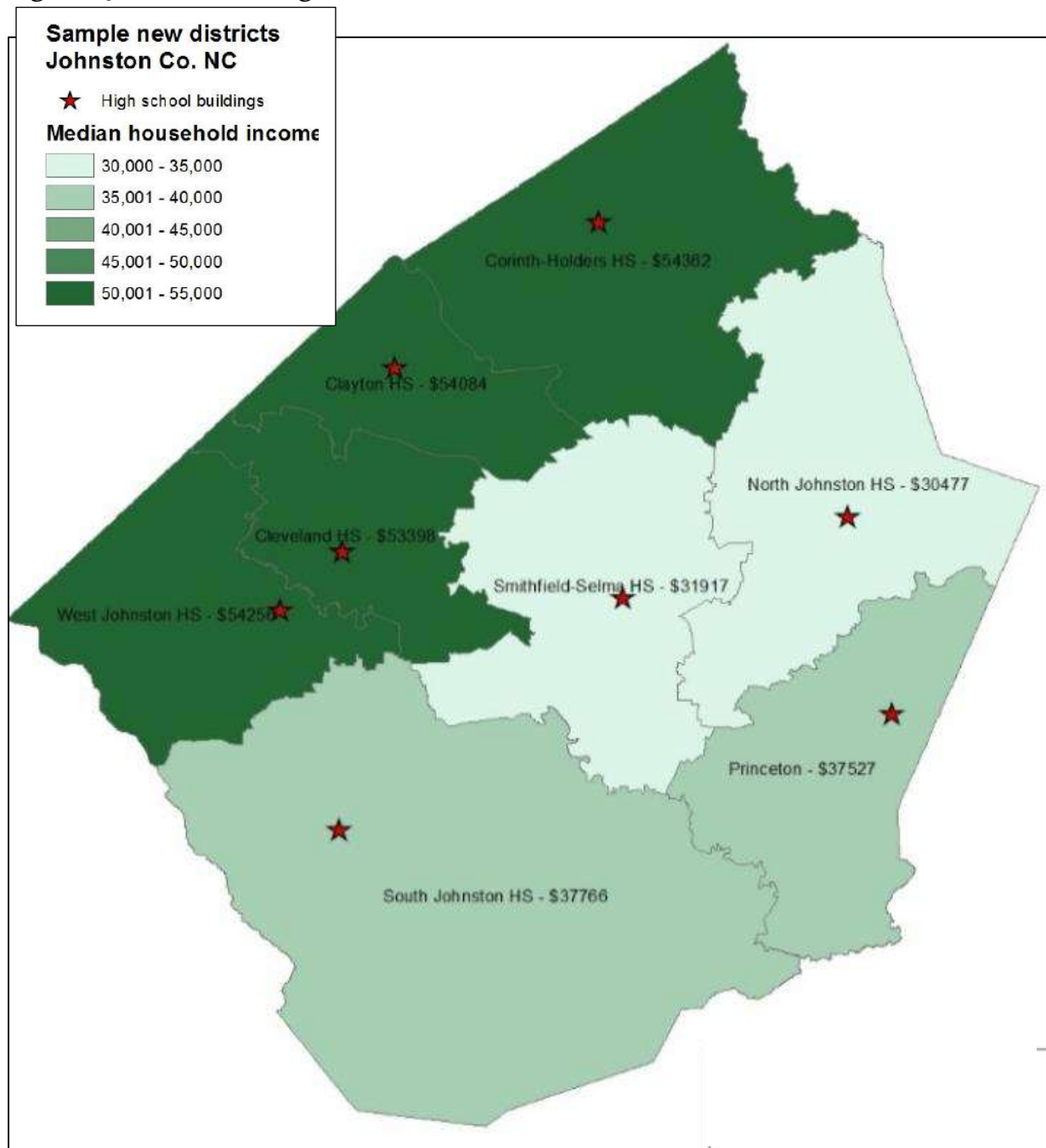
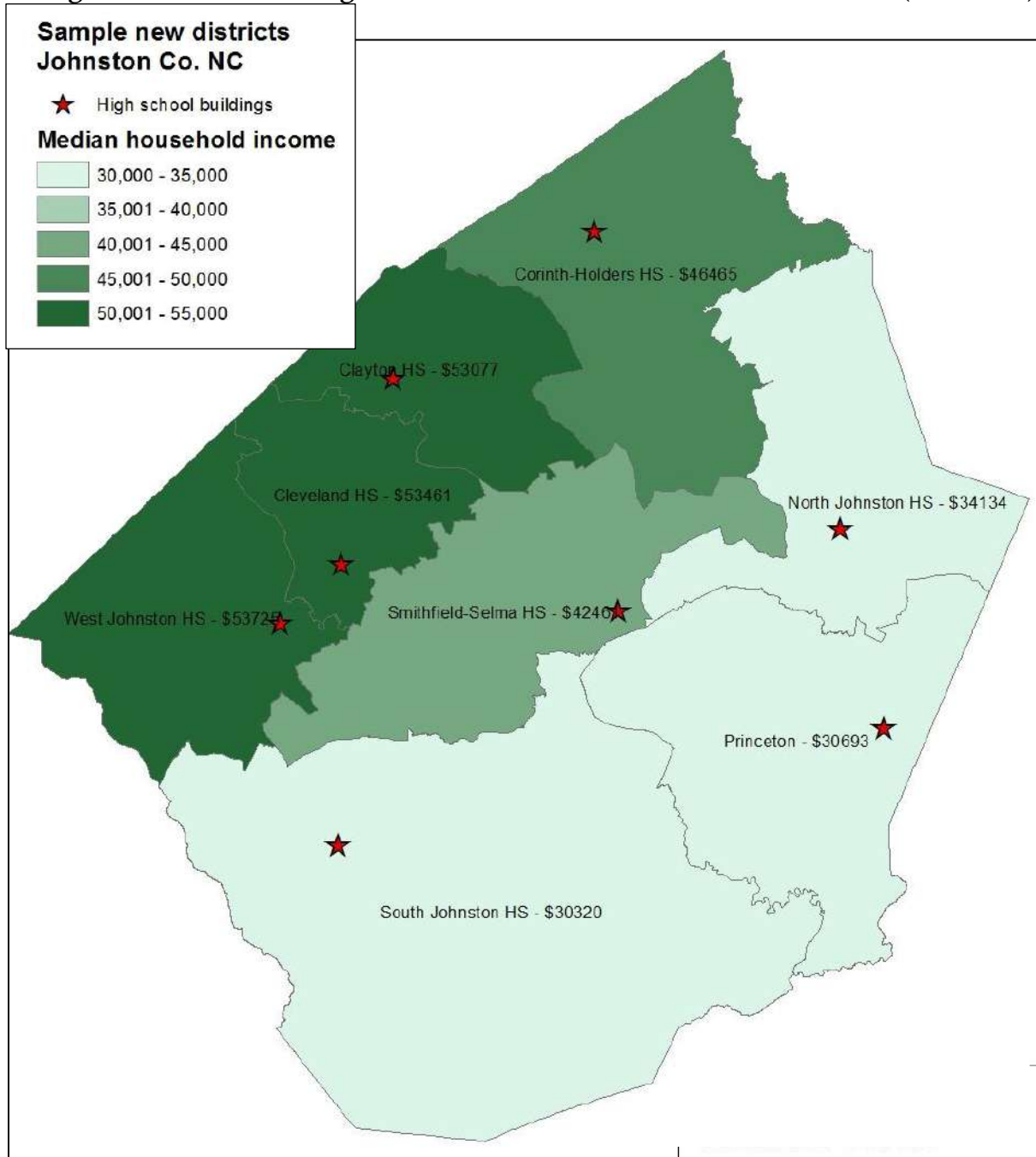


Figure 18. Revised Assignment Areas: Median Household Income (2012-2016)



Changes in assignment area effect capacity levels in each school. The sample revision shown here also has the benefit of more evenly balancing the over-capacity of the County's high schools (to the extent that these are a function of assignment area) by spreading out the significant over-capacity at Cleveland and Corinth-Holders:

Table 12. County High Schools % Capacity: Capacity (2017-2018), Assignment Area as % of Capacity (2012-2016) and Revised

High School	2017-2018 Attendance as % of Capacity	Current Assignment Area (2012-2016)	Revised Assignment Area
Clayton	89%	88%	88%
Cleveland	140%	159%	121%
Corinth-Holders	160%	124%	89%
North Johnston	93%	115%	82%
Princeton	90%	74%	113%
Smithfield-Selma	96%	114%	103%
South Johnston	99%	97%	102%
West Johnston	89%	90%	96%

JCS must soon add another high school. Tables 13 and 14, and Figures 19 and 20 illustrates what this might look like when prioritizing balanced attendance areas by demographics and capacity and socio-economic issues:

Table 13. Nine High School Attendance Areas: % Capacity

High School	2017-2018 Attendance as % of Capacity	Current Assignment Area (2012-2016)	Revised 8-HS Assignment Area	Revised 9-HS Assignment Area
Clayton	89%	88%	88%	69%
Cleveland	140%	159%	121%	89%
Corinth-Holders	160%	124%	89%	79%
North Johnston	93%	115%	82%	78%
Princeton	90%	74%	113%	96%
Smithfield-Selma	95.8%	114%	103%	94%
South Johnston	99%	97%	102%	96%
West Johnston	89%	90%	96%	101%
New School				93%*

Figure 19. Nine High School Attendance Areas: % Minority (2010)

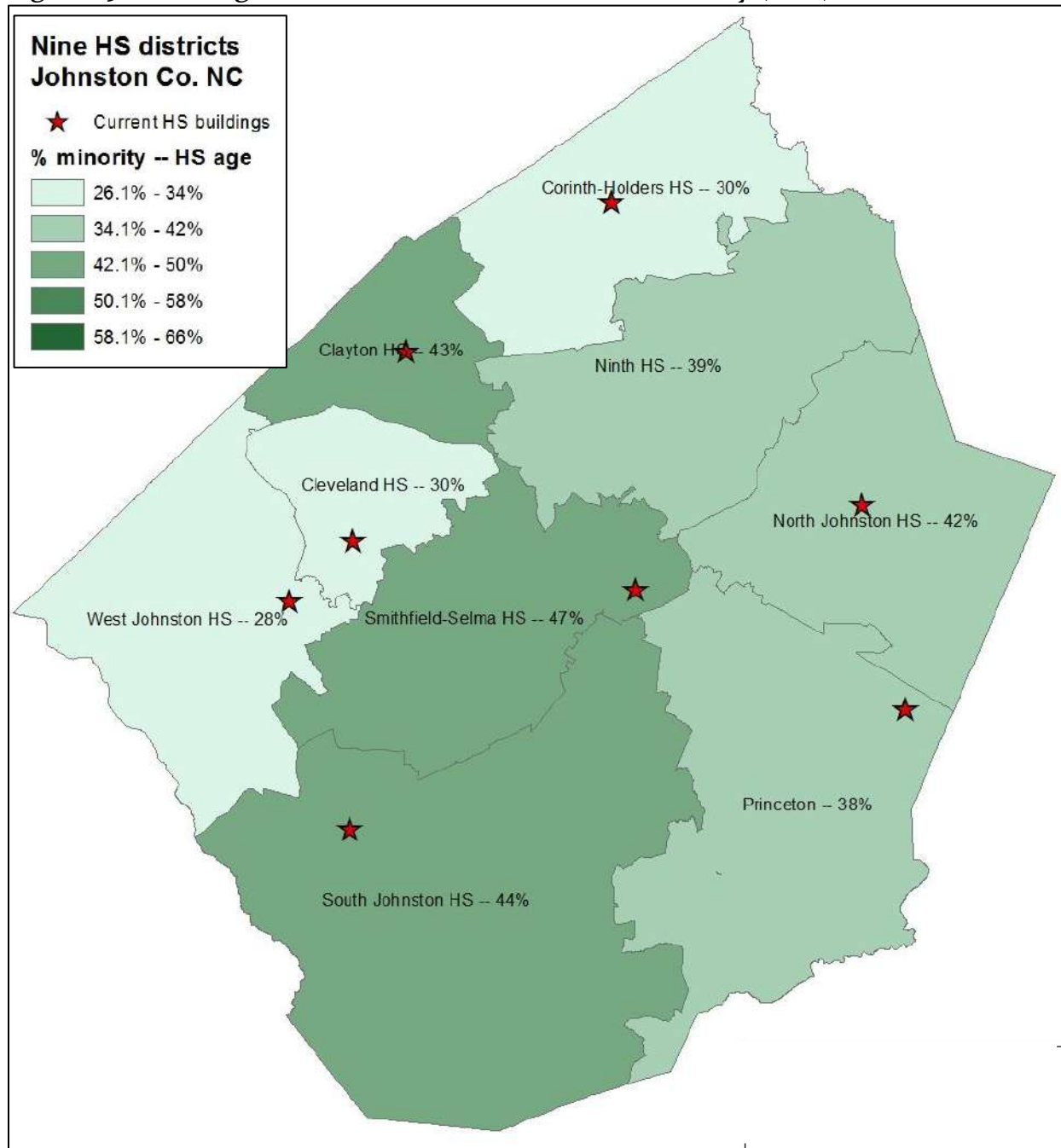
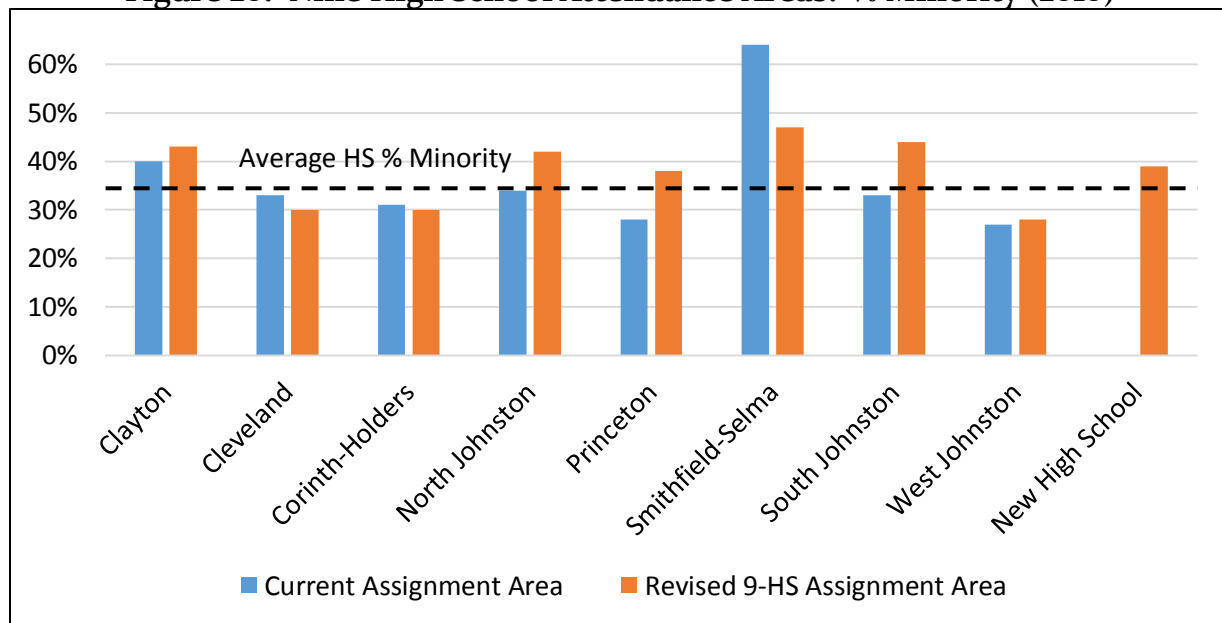


Table 14. Nine High School Attendance Areas: % Minority (2010)

High School	% Minority		
	Current Assignment Area	Revised 8-HS Assignment Area	Revised 9-HS Assignment Area
Clayton	40%	34%	43%
Cleveland	33%	33%	30%
Corinth-Holders	31%	41%	30%
North Johnston	34%	42%	42%
Princeton	28%	43%	38%
Smithfield-Selma	64%	49%	47%
South Johnston	33%	38%	44%
West Johnston	27%	28%	28%
New High School			39%

Figure 20. Nine High School Attendance Areas: % Minority (2010)

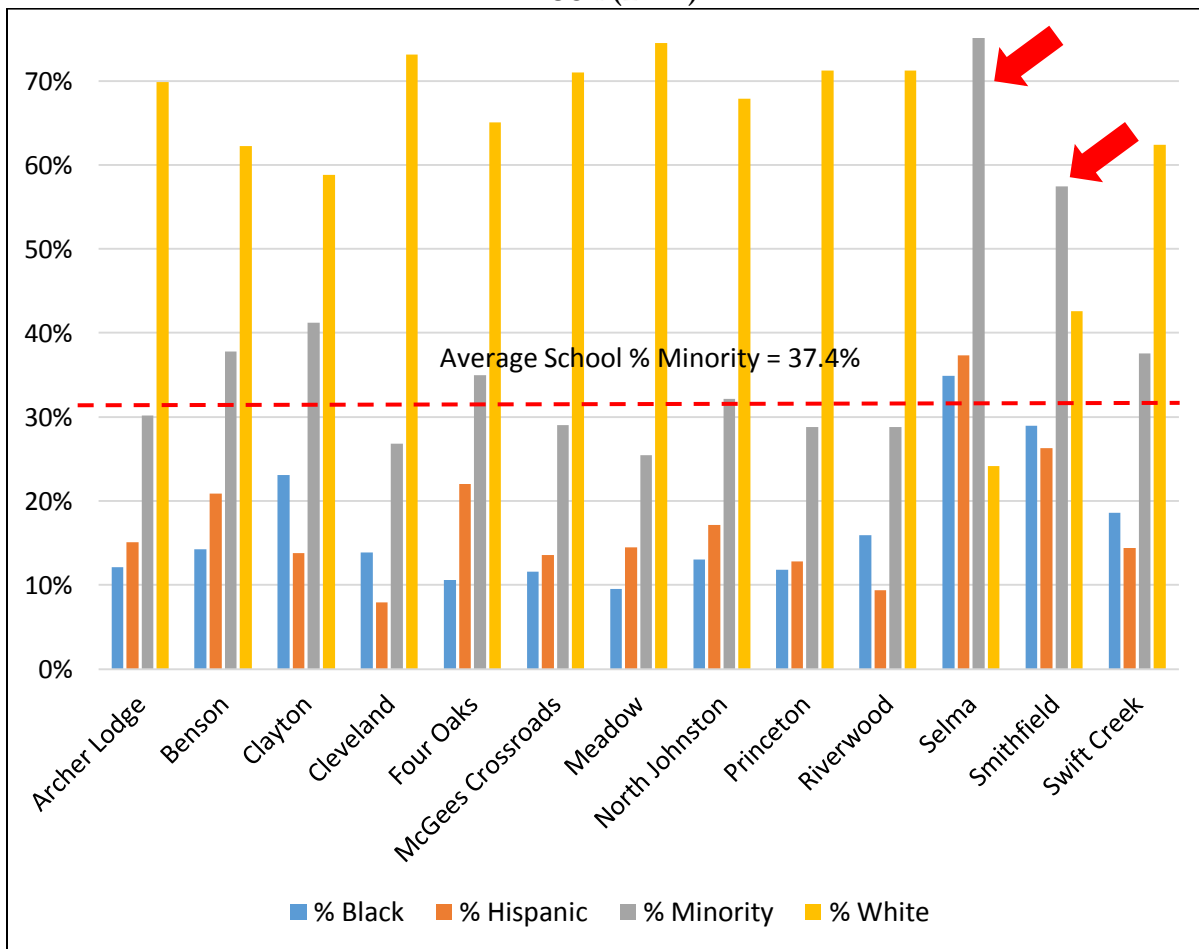


These issues also exist in JCS's Middle Schools, as shown in Table 15 and Figure 21. While the middle schools which feed the high schools are not an exact match in all cases, it is clear that the two schools (Smithfield and Selma) which feed the most segregated high school (Smithfield-Selma) are also the most segregated middle schools.

Table 15. Johnston County Middle Schools: Assignment Area Demographics by Block (2010)

Middle School	% Black	% Hispanic	% Minority	% White
Archer Lodge	12.1%	15.1%	30.2%	69.8%
Benson	14.3%	20.9%	37.8%	62.2%
Clayton MS	23.1%	13.8%	41.2%	58.8%
Cleveland	13.9%	7.9%	26.8%	73.2%
Four Oaks	10.6%	22.0%	34.9%	65.1%
McGees Crossroads	11.6%	13.6%	29.0%	71.0%
Meadow	9.5%	14.5%	25.5%	74.5%
North Johnston	13.0%	17.1%	32.1%	67.9%
Princeton	11.8%	12.8%	28.8%	71.2%
Riverwood	16.0%	9.4%	28.8%	71.2%
Selma	34.9%	37.3%	75.9%	24.1%
Smithfield	28.9%	26.3%	57.4%	42.6%
Swift Creek	18.6%	14.4%	37.6%	62.4%

Figure 21. Johnston County Middle Schools: Assignment Area Demographics by Block (2010)



Conclusion

School siting decisions and the drawing of attendance areas can either support and encourage diversity or reflect and reinforce segregative housing patterns. In Johnston County, the available data shows that school board decisions about siting and assignment areas have had a critical impact. Newer schools in the western part of the county became an additional lure for parents with the means to take advantage of the open transfer policy, leaving behind schools with higher percentages of nonwhite and low wealth students. As the pattern repeats, resegregation – and the adverse educational impacts that follow—worsens. Also, as those high poverty schools lose students, they become under-enrolled, creating additional challenges to providing adequate resources and opportunities.

None of this “just happens.” It is the foreseeable and anticipated result of decisions made by elected officials who fail to prioritize the educational and community benefits of inclusion and diversity in schools—benefits that the U.S. Supreme Court has recognized school boards have the authority to pursue. The alternative assignment scenario presented here is an example of how the school board could improve diversity, inclusion, and facilities use by adjusting attendance area boundaries.

This is a general scenario based on publicly available census data, an imprecise but nonetheless instructive tool for identifying such possibilities. Much more precise alternative boundaries could be produced by the Operations Research/Education Laboratory (OR/Ed) at NC State, using the comprehensive and detailed JCS student node data, which includes a wide range of demographics factors as well as student performance metrics. While districts often direct OR/Ed to look only at capacity and proximity, OR/Ed’s own promotion materials specifically note it can create attendance areas (or identify new school locations) to meet “school board policies pertaining to such matters as school capacity, socio-economic balance, demographic balance, and grade structure.”

This call to action is for the board to adopt policies and goals that recognize the value of racial and socioeconomic diversity as vital elements to ensure that every student in JCS receives the sound basic education that our constitution requires. As the district anticipates building new schools in the near future, and as our school-age population demographics continue to become more diverse, this is an opportune time to engage the community in a transparent and public process to establish those goals. Now is the time to develop a strategy to engage the whole community in embracing and implementing diversity goals in time for the next round of school openings and the related reassignment of students.