

# EXPLORING THE SPATIAL & DEMOGRAPHIC DISTRIBUTION OF THE STUDENT HOMELESSNESS CRISIS IN THE BRONX & SCHOOL DISTRICT 9

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According to a recent article published by the *New York Times*, which cites data gathered by legal non-profit Advocates for Children of New York (AFC), there were 119,320 New York City students who experienced some form of homelessness during the 2022-2023 school year. This number represents approximately one in nine children enrolled in public schools, and marks the eighth consecutive year in which the homeless student population in New York City exceeded 100,000. The AFC report defines homelessness in this context according to the federal McKinney-Vento Act from 1987, which characterizes students experiencing homelessness “as those who lack a nighttime residence that is fixed, adequate, and regular...” This encompasses not only students living in shelters (managed by the New York City Department of Homeless Services or other agencies), but also those “doubled up” with other families in units intended for fewer residents.

As the New York City School system grapples with a narrow, inflexible budget and an overall shrinking enrollment, it has—and will continue to—struggle to meet the needs of unhoused students, which are typically greater than those with secure, stable housing. According to a press release published by the AFC, students living in shelters are three times more likely to drop out of high school, and a mere 22 percent of homeless elementary and middle schoolers reached proficiency on English Language Arts state exams during the 2021-2022 school year. Furthermore, homeless students are more likely to be English language learners, which is unfortunately yet another obstacle to academic achievement in many of the city’s public schools, which generally lack sufficient multilingual teaching staff.

Evidently, New York City’s worsening student homelessness crisis has and will continue to have far-reaching implications for the city’s public school system and homeless population more broadly. The city’s public school system is the country’s largest by far, and according to an economist from Princeton University, “In aggregate, these homeless students, by themselves, rank among the top 25 largest school districts nationwide.” AFC’s data shows that the most dramatic increases in student homelessness have occurred in the Bronx, where roughly one in six public school students was homeless during this past academic year.

Given the pressing, unresolved nature of student homelessness in New York City—and the Department of Education’s (DOE) narrow capacity to address the issue—there is opportunity to employ spatial analysis to identify schools and school districts within the Bronx (already confirmed as the borough with the fastest growing homeless student population) bearing the greatest burden of this crisis. The broad goal of this study is to identify these affected school districts and schools, and to look at the socioeconomic characteristics of the Census tracts they encompass. Furthermore, in light of the AFC’s findings regarding the academic barriers that unhoused students face, this study maps the relationship between students with learning disabilities and students who are English language learners with rates of student homelessness. Finally, a map showing accessibility of NYC City Agency service centers—which include food stamps assistance centers, Child Protective Services, employment resources, Medicaid resources, information for low-income tenants, and more—throughout the Bronx and its school district with highest concentration of unhoused students (District 9). Listed on the following page are the research questions that served as the guiding framework for this study.



Mount Eden, the Bronx (located in DOE School District 9), [cityneighborhoods.nyc](https://cityneighborhoods.nyc.gov/)

- 1.0** *What was the spatial distribution of students in temporary housing across Census tracts in the Bronx during the 2019-2020 school year?*
  - 1.1** *Which Bronx School District had the greatest concentration of K-12 public school students in temporary housing during the 2019-2020 school year?*
  - 1.2** *Which District 9 schools enrolled the most students in temporary housing during the 2019-2020 school year?*
- 2.0** *What demographic factors are associated with higher rates of student homelessness across Census tracts in School District 9?*
  - 2.1** *Was there a correlation between percentages of students in temporary housing across District 9 Census tracts and numbers of English language learning students or students with learning disabilities in the district's schools during the 2019-2020 school year?*
- 3.0** *How does the 2019-2020 spatial distribution of homeless students correlate with pedestrian accessibility to NYC agency social service centers (e.g., food stamps assistance centers, Child Protective Services, employment resources, Medicaid resources, information for low-income tenants, etc.) in School District 9?*

The study aggregates myriad non-spatial data from NYC DOE pertaining to students in temporary housing, school demographics, and school locations (all table joined in ArcGIS Pro, as outlined in the methodology section of this report). American Community Survey (ACS) 5-Year Estimates data are also pulled to provide a more full picture of the demographic characteristics of the Bronx. Despite the fact that the AFC has already released its findings from the 2022-2023 school year in the form of an official report, the DOE has not yet published the full dataset. Thus, this study uses data pertaining to NYC students in temporary housing from the 2019-2020 school year, during which roughly 111,000 students experienced some form of homelessness. In order to maintain temporal consistency, all spatial datasets are from 2019. Furthermore, it should be clarified that NYC school district boundaries (from 2019) are overlaid on each map in an attempt to indicate the distribution of unsheltered students across districts.

## Non-Spatial

### American Community Survey 5-Year Estimates (2019)

Race  
Hispanic or Latino Origin  
School Enrollment (K-12)  
Demographic and Housing Estimates  
Educational Attainment

U.S. Census Bureau

### School Locations (2019-2020)

New York City Department of Education (DOE)

### Students in Temporary Housing (2019-2020)

New York City Department of Education (DOE)

### Demographic Snapshot - School (2019-2020)

New York City Department of Education (DOE)

## Spatial

### Borough Boundaries (Clipped to Shoreline) (2019)

New York City Department of City Planning (DCP)

### New York Census Tracts (2019)

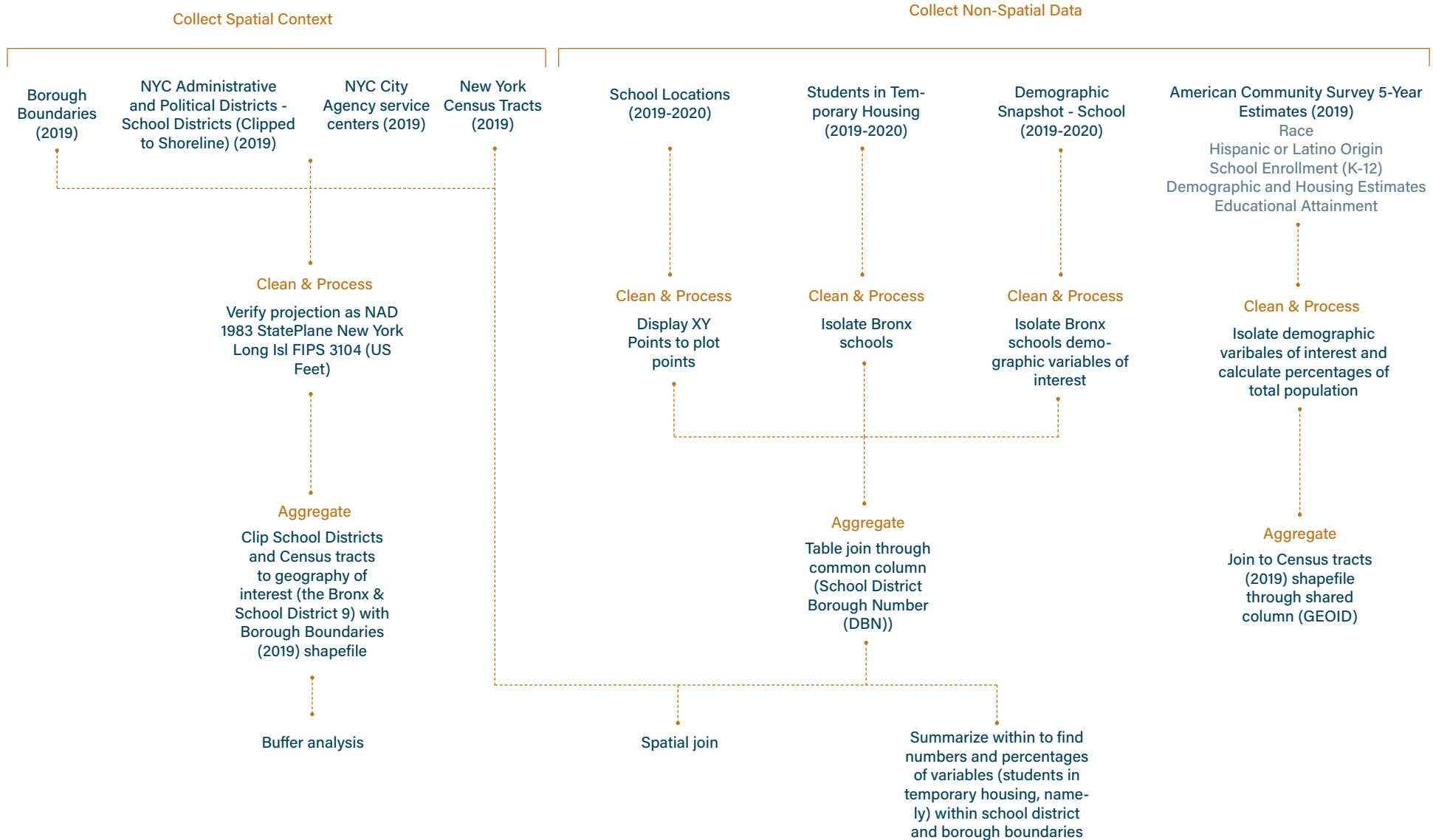
U.S. Census Bureau Tiger/LINE Shapefile

### School Districts (Clipped to Shoreline) (2019)

New York City Department of City Planning (DCP)

### City Agency Service Centers (2019)

New York City Office of Technology and Innovation (DOITT)



Prior to conducting analysis in response to the aforementioned research questions, I was interested in testing the foundational assumption of the study—that the Bronx has a greater concentration of unhoused students than the other four NYC boroughs. In order to do so, I created two thematic maps of all five boroughs: one choropleth map showing percentages of students in temporary housing, and one dot density map showing numbers of unhoused students (both per Census tract). Statistical analysis revealed that roughly 16% of K-12 students in the Bronx resided in temporary housing during the 2019-20 school year, which is the highest percentage among the five boroughs—thus confirming the hypothesis. Additional supplementary findings are stated adjacent to the map (pp. 9).

In order to establish a basic understanding of the demographic makeup of the Bronx, I pulled various ACS datasets to visualize key demographic characteristics per Census tract in the form of choropleth maps (pp. 10). These characteristics include percent population Hispanic or Latino, Black, white, living below the poverty level, graduated from high school, and foreign born. Showing the distribution of the foreign born population in the Bronx seemed particularly relevant to this study, considering the intersection between the student homelessness and migrant crises. Additionally, I created a thematic map depicting school enrollment in the Bronx per Census tract; this is a dot density map due to the fact that it uses raw counts rather than percentages. All maps display greater concentrations of vulnerable populations (people of color, people living in poverty, low educational attainment, foreign born) in the south Bronx; this area is also home to larger K-12 student body populations.

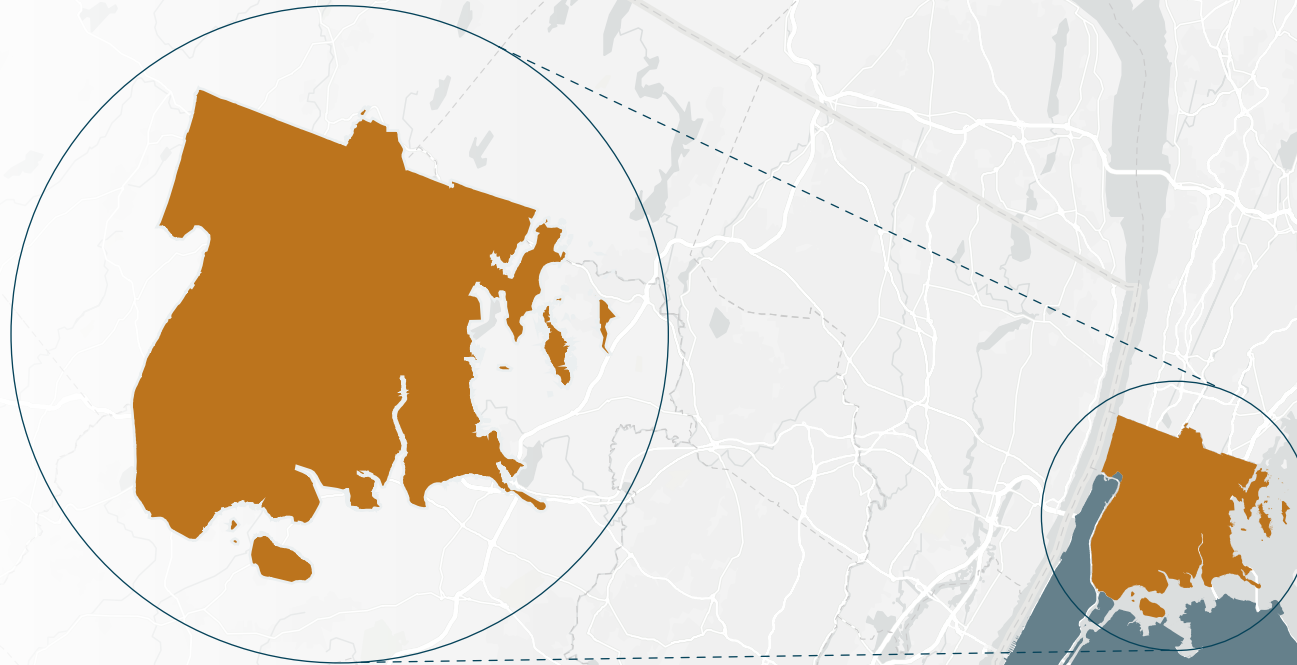
The following choropleth map (pp. 11) visualizes the spatial distribution of percentages of unhoused students across the Bronx, indicating higher concentrations in the south and southwest of the borough. Census tracts with no data (visualized in white) designate tracts within which there are no NYC DOE schools (and thus no data regarding students in temporary housing, which comes from the DOE). Points showing locations of K-12 public schools are overlaid atop the choropleth to add greater specificity to the analysis.

Subsequently, I employed spatial statistical analysis (with the “summarize within” tool) to identify the Bronx school district with the highest concentration of students in temporary housing—School District 9 (pp. 12). On the following page (pp. 13) several choropleth maps visualize the demographic makeup of District 9, pulling the same ACS data as the previously shown demographic maps for the entire borough.

In response to Research Question 2.0, I identified the five schools within District 9 with the largest enrollments (numbers) of unhoused students, indicated as points atop the same choropleth map (pp. 14). The following maps, answering Research Question 2.1, use graduated symbols to depict numbers of students with learning disabilities and English language learning students per Census Tract (pp. 15). All maps (pp. 14-15) include a curious outlier; Bronx Census tract 179.02 (near the center of the district) hosts a high concentration of unhoused students, yet does not contain one of the top five schools, nor does it show high numbers of students with learning disabilities or English language learners. Further inspection leads me to suspect that this is because the only school within Census tract 179.09—P.S. X088 - S. Silverstein Little Sparrow School—has a very small enrollment, with only 96 students in attendance during the 2019-2020 school year; so while percent of these students who are unhoused may be significant, overall numbers are still low compared to other schools in the district. Overall, however, the maps confirm that Census tracts with greater percentages of unhoused students are also home to higher enrollments of students with learning disabilities and students who are English language learners.

The final map included in this report (pp. 16) attempts to visualize the pedestrian accessibility of NYC City Agency service centers within the Bronx and District 9. Somewhat surprisingly, the map shows that most of the south Bronx and almost the entirety of District 9 Census tracts are within walking distance of at least one of these centers.

# LOCATION OF STUDY: THE BRONX



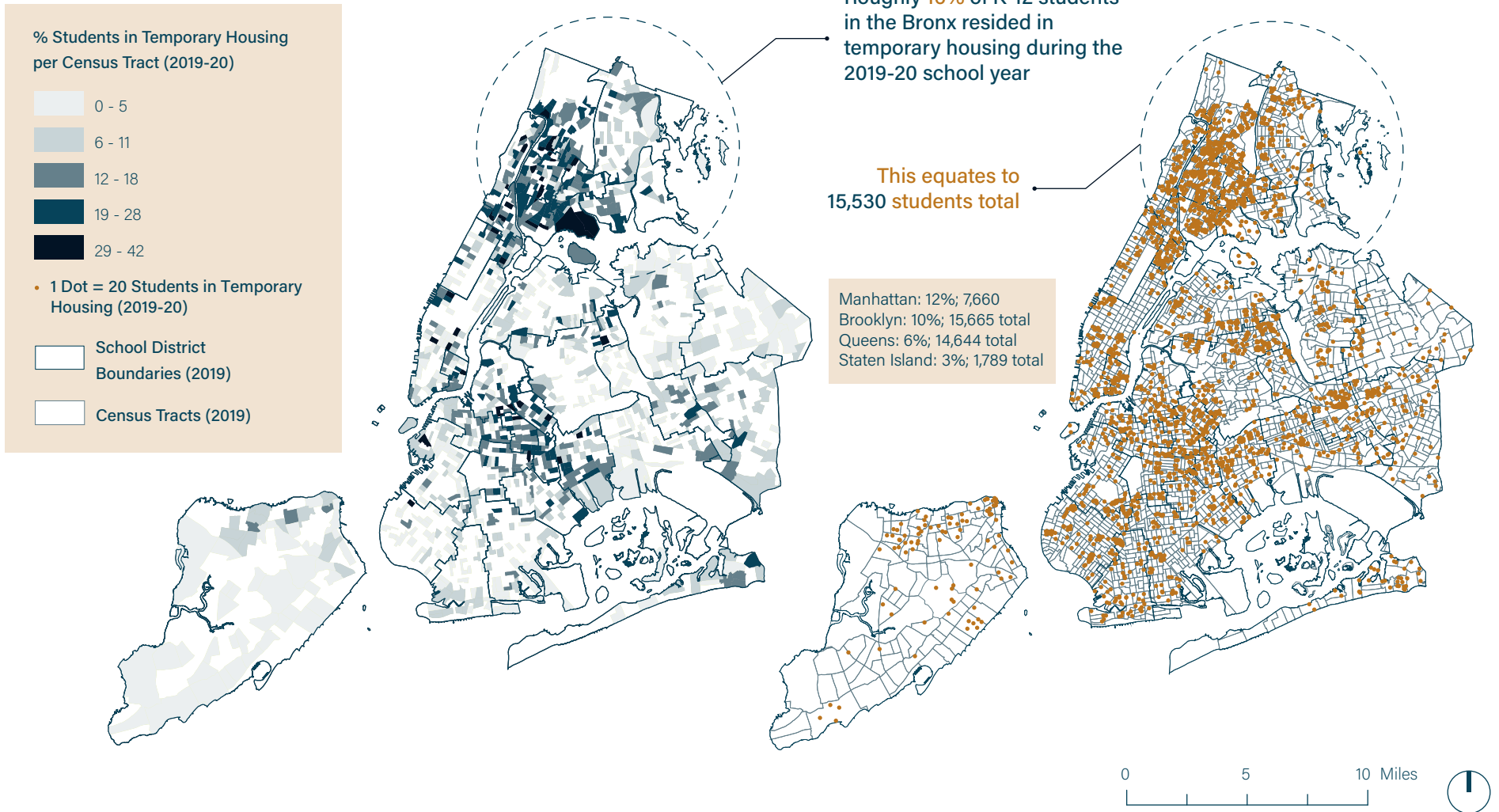
-  The Bronx
-  Other four NYC boroughs



Source: NYC Department of City Planning (DCP) (2023)



*How does the concentration and number of students in temporary housing in the Bronx during the 2019-2020 school year compare to the other four boroughs?*

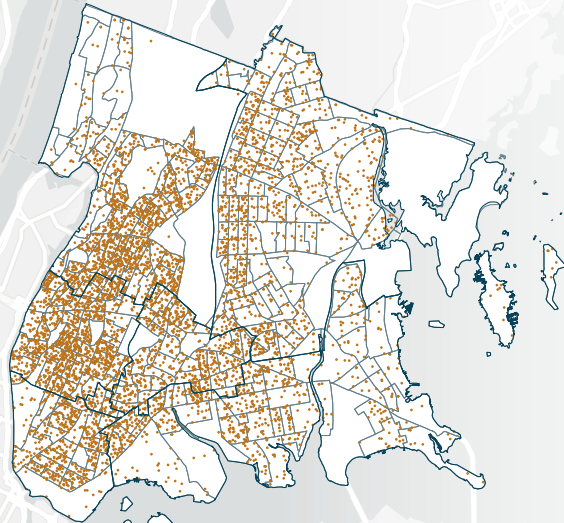


Sources: U.S. Census Bureau (2019), NYC Department of City Planning (2019), NYC Department of Education (2019)

# SOCIOECONOMIC CONTEXT

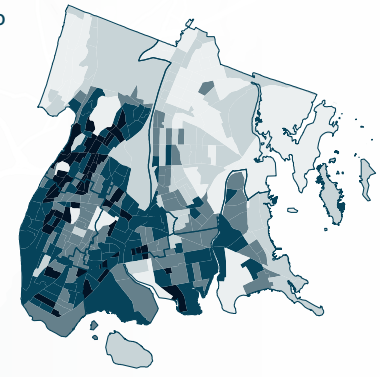
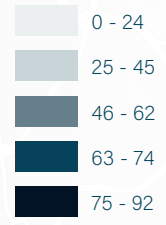
## Pertinent Demographic Characteristics of the Bronx per Census Tract (2019)

Total population: **1.47 million**  
 Total K-12 school enrollment: **32,033**  
 Poverty rate: **26.4%**

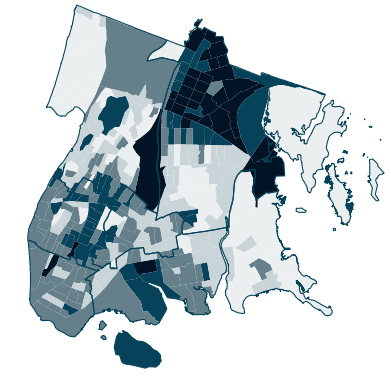
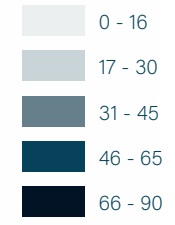


1 Dot = 40 3-18 year olds enrolled in K-12 Public Schools per Census tract (2019-20)  
 School District Boundaries (2019)

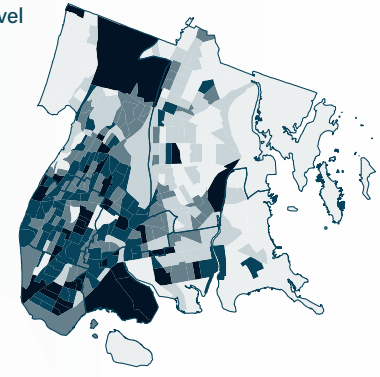
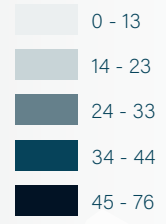
% Hispanic or Latino



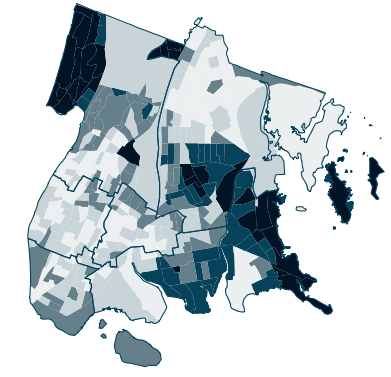
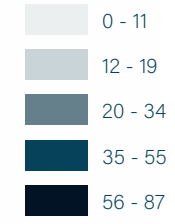
% Black



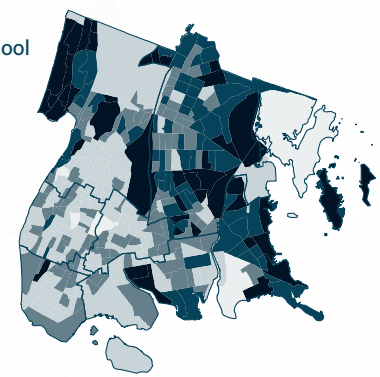
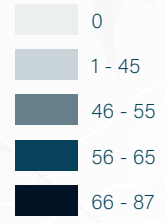
% Below Poverty Level



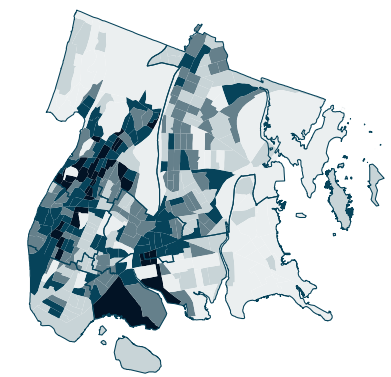
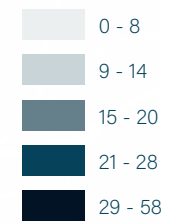
% White



% Adult Population Graduated High School



% Foreign Born



Sources: American Community Survey (ACS) 5-Year Estimates (2019), NYC DCP (2019)

# RESEARCH QUESTION 1.0

*What was the spatial distribution of students in temporary housing across Census tracts in the Bronx during the 2019-2020 school year?*

● K-12 NYC DOE Schools (2019-20)

% Students in Temporary Housing per Census Tract (2019-20)

3 - 10

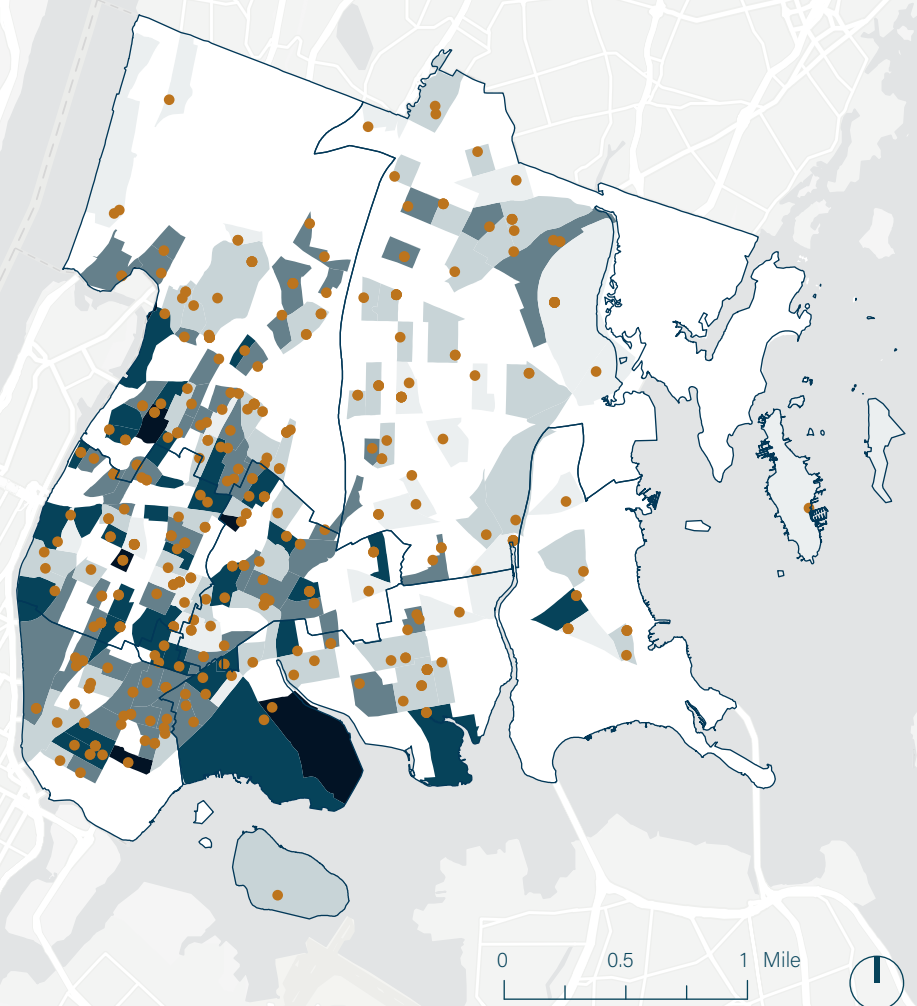
11 - 16

17 - 23

24 - 32

33 - 42

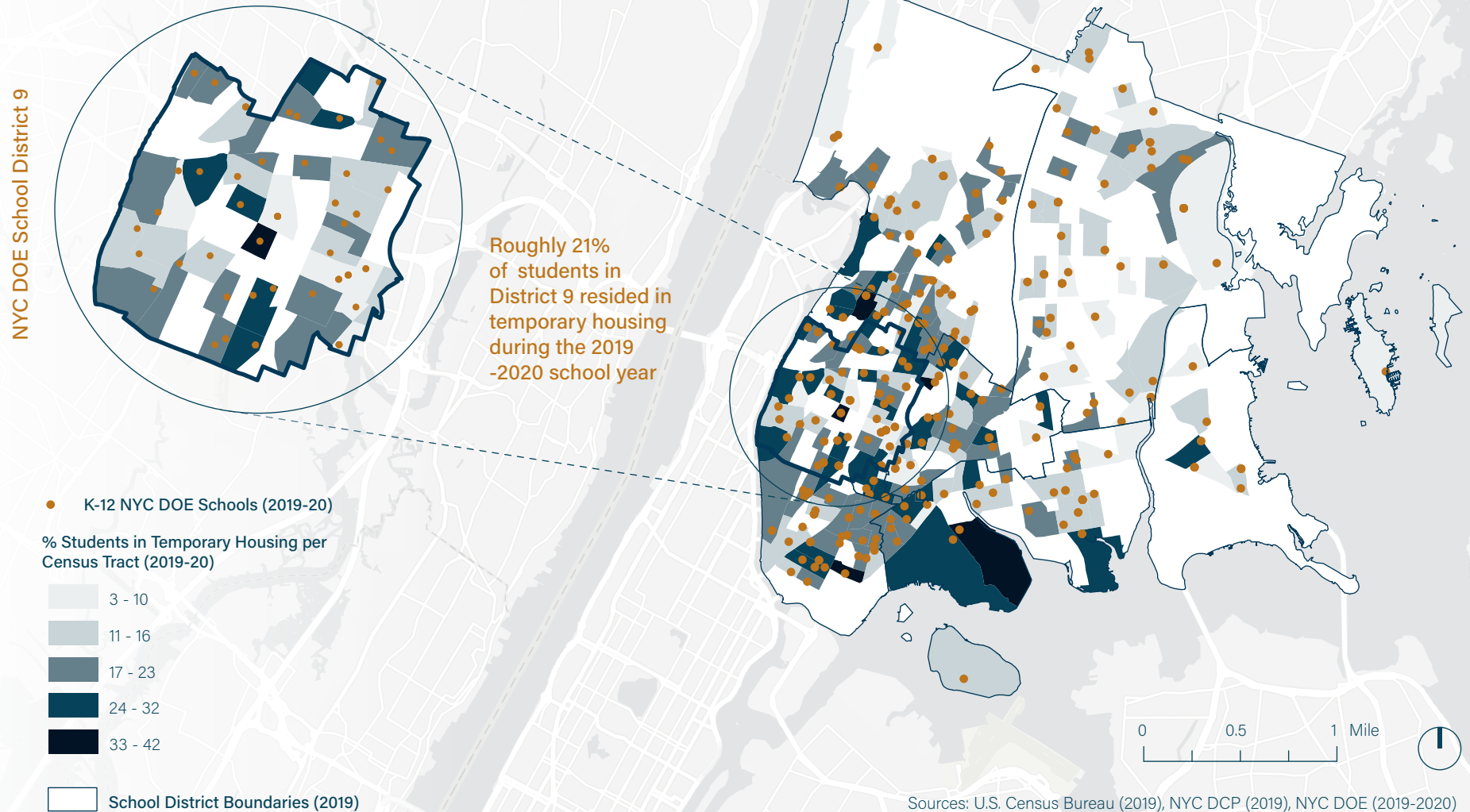
□ School District Boundaries (2019)



Sources: U.S. Census Bureau (2019), NYC DCP (2019), NYC DOE (2019-2020)

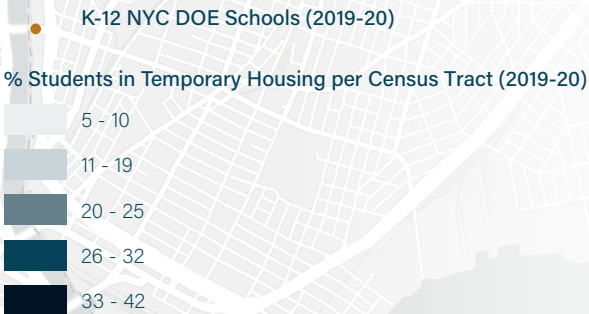
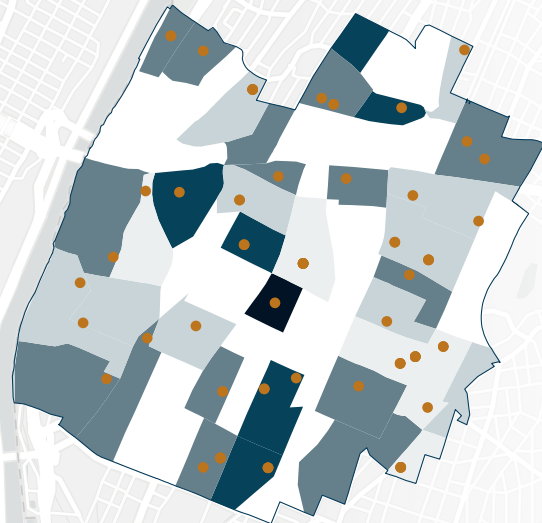
# RESEARCH QUESTION 1.1

Which Bronx School District had the greatest concentration of K-12 public school students in temporary housing during the 2019-2020 school year?

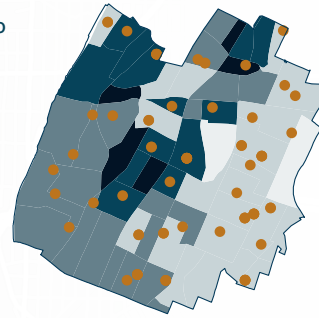
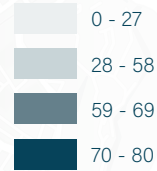


# RESEARCH QUESTION 1.2

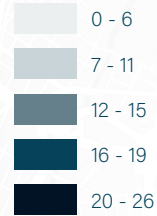
*What demographic factors are associated with higher rates of student homelessness across Census tracts in School District 9?*



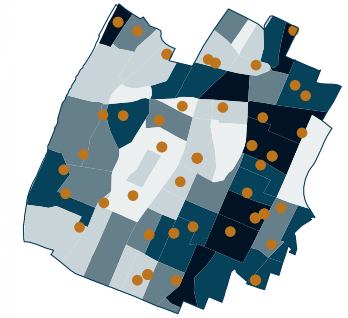
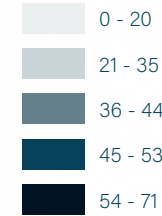
% Hispanic or Latino



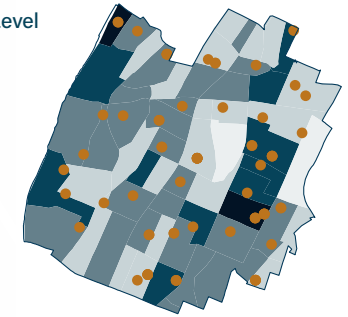
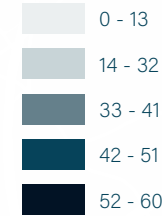
% White



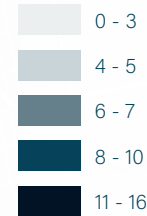
% Black



% Below Poverty Level



% Foreign Born



0 1 2 Miles



Sources: U.S. Census Bureau (2019), NYC DCP (2019), NYC DOE (2019-2020)

Which District 9 Schools enrolled the most students in temporary housing during the 2019-2020 school year?

### 1. P.S. 53 BASHEER QUISIM

281 Students in Temporary Housing



### 2. P.S. X114 LUIS LLORENS TORRES

252 Students in Temporary Housing



### 3. P.S. 70 MAX SCHOENFELD

249 Students in Temporary Housing



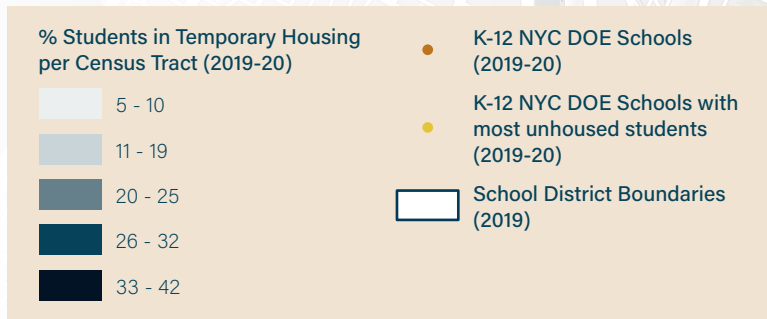
### 4. P.S. 28 MOUNT HOPE

226 Students in Temporary Housing



### 5. P.S. 199X THE SHAKESPEAR SCHOOL

222 Students in Temporary Housing



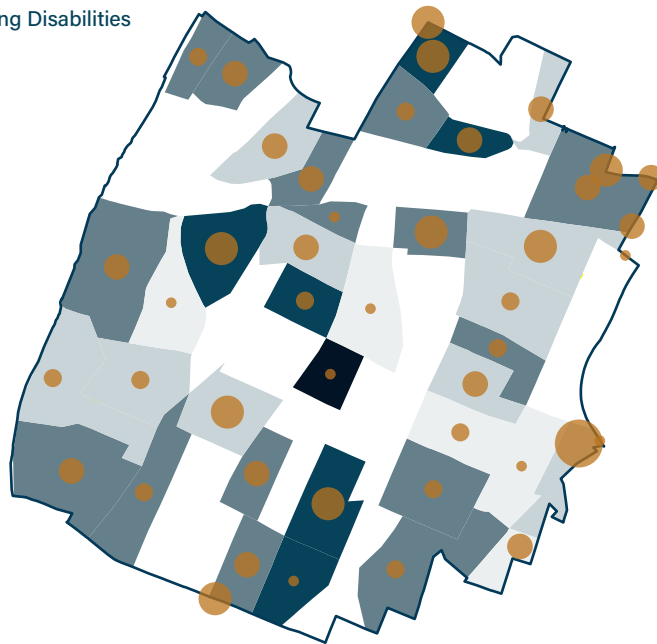
Sources: U.S. Census Bureau (2019), NYC DCP (2019), NYC DOE (2019-2020)

# RESEARCH QUESTION 2.1

*Is there a correlation between percentages of students in temporary housing across District 9 Census tracts and numbers of English language learning students or students with learning disabilities in District 9 schools during the 2019-2020 school year?*

# Students with Learning Disabilities

- 5 - 59
- 60 - 115
- 116 - 172
- 173 - 246
- 247 - 629



# English Language Learners

- 0 - 37
- 38 - 71
- 72 - 119
- 120 - 191
- 192 - 334



% Students in Temporary Housing per Census Tract (2019-2020)

- 5 - 10
- 11 - 19
- 20 - 25
- 26 - 32
- 33 - 42

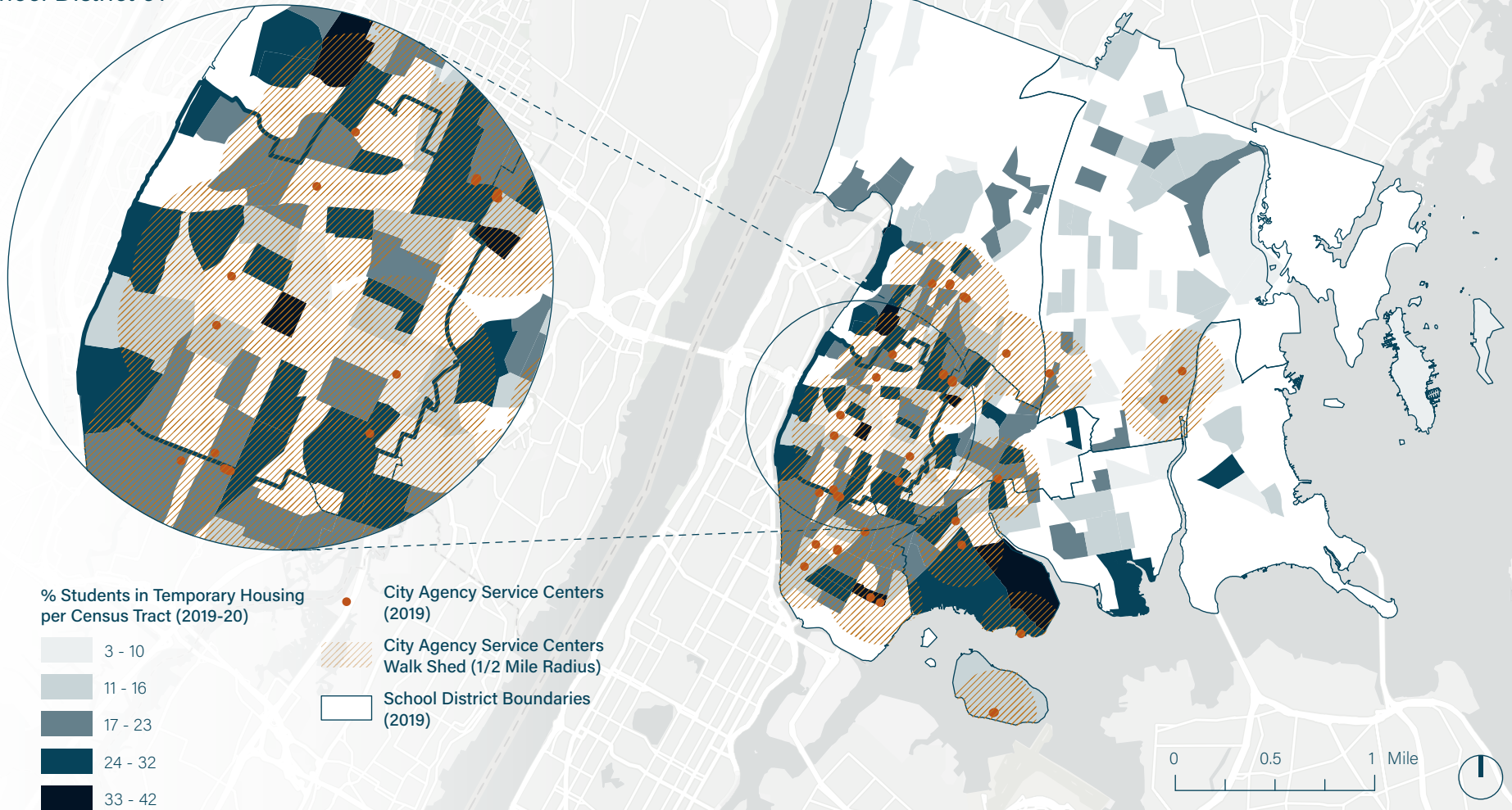


Sources: U.S. Census Bureau (2019), NYC DCP (2019), NYC DOE (2019-2020)

# RESEARCH QUESTION 3.0

*How does the 2019-2020 spatial distribution of homeless students correlate with pedestrian accessibility to NYC agency social service centers (e.g., food stamps assistance centers, Child Protective Services, employment resources, Medicaid resources, information for low-income tenants, etc.) in School District 9?*

NYC DOE School District 9



Sources: U.S. Census Bureau (2019), NYC DCP (2019), NYC DOE (2019-2020), NYC DOITT (2019)



There are inevitably a handful of limitations inherent to this study that are worth noting. As mentioned previously, all data are from either the 2019-2020 school year, or the 2019 calendar year. This not only means that the data are slightly outdated, but that they may have been skewed by the COVID-19 pandemic. Data from the pandemic tend to be incomplete and inconsistent with other typical years due to abnormal social and economic conditions. Schools and students were uniquely impacted by the pandemic due to school closures, meaning DOE data in particular from the 2019-2020 school year is not representative of a typical school year. Rates of homelessness, too, rose during the pandemic, a reality likely reflected in the data.

Limitations of the study also involve the unique circumstances of unhoused students not accounted for in the data. For example, mid-year school transfers are common among K-12 students in temporary housing. The DOE states that when collecting data about student homelessness and school demographics, students who have been enrolled in multiple schools throughout the same academic year are only counted for the first school attended, suggesting that some data may be missing. Furthermore, because NYC Department of Homeless Services (DHS) does not take into account school attendance when placing families in DHS shelters, many unhoused students live far from the school districts in which they are enrolled. Thus, ACS data I used—and corresponding sociodemographic choropleth maps of the Bronx and District 9—may not fully reflect the demographic makeup of unhoused students within the borough and district.

Despite these limitations, the study sheds light on the spatial distribution of the student homelessness crisis in the Bronx, the borough with the highest concentration of unhoused K-12 students. The maps visually convey the unsurprising reality that areas with high concentrations of Hispanic or Latino, Black, poor, non-high school or college educated, and foreign born residents are also those with higher rates of student homelessness (primarily in the south and southwest Bronx). By identifying the school district with the largest percentage of unhoused students (District 9), the study suggests that this district bears the greatest burden of crisis (at least during the 2019-2020 school year), and that perhaps funding and resources (if available) should be directed there. Moreover, the five schools within this district with the highest enrollments of unhoused students are likely in need of additional social work staff as well as multilingual and special education teachers (considering the relationship between homelessness learning disabilities/English language learners). Ultimately, it should be acknowledged that there are many dimensions of the New York City student homelessness crisis that fall outside the scope of this rudimentary study, however it nonetheless serves as a compelling reminder of the inequitable distribution of the issue across the five boroughs and among Bronx schools and school districts.

Advocates for Children of New York. “New Data Show 1 in 9 New York City Students Experienced Homelessness Last Year.” News Release, November 1, 2023. [https://www.advocatesforchildren.org/sites/default/files/on\\_page/NP\\_press\\_release\\_student\\_homelessness\\_22-23.pdf?pt=1](https://www.advocatesforchildren.org/sites/default/files/on_page/NP_press_release_student_homelessness_22-23.pdf?pt=1).

Cassidy, Mike. “School Proximity, Attendance, Stability, and Achievement among Homeless Students.” Princeton University School of Public and International Affairs, Center for Health and Wellbeing. October 30, 2023. [https://miketcassidy.com/files/dhsdoepaper15\\_8\\_10main2.pdf](https://miketcassidy.com/files/dhsdoepaper15_8_10main2.pdf).

Closson, Troy. “A Record 119,300 New York City Students Were Homeless Last Year.” *New York Times*, November 1, 2023. <https://www.nytimes.com/2023/11/01/nyregion/homeless-students-nyc.html>.

Closson, Troy. “New York Schools Came Back From the Brink. Now a New Crisis Looms.” *New York Times*, October 2, 2023. <https://www.nytimes.com/2023/10/02/nyregion/nyc-schools-financial-crisis.html>.

Meko, Hurubie. “What to Know About the Migrant Crisis in New York City.” *New York Times*, October 19, 2023. <https://www.nytimes.com/article/nyc-migrant-crisis-explained.html>.