

Civil Rights Research

Housing and Educational Opportunity:

Characteristics of Local Schools Near Families with Federal Housing Assistance



Ingrid Gould Ellen, NYU Furman Center Keren Horn, UMass Boston



Photo credit: Susannah Pazdan

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Introduction

The Housing Act of 1949 espoused the goal of "a decent home and a suitable living environment" for all Americans. Nearly 70 years later, we have made significant strides in improving the quality of American homes, but there continue to be large disparities across income and race, especially with respect to neighborhood environments. These disparities matter: growing research shows that neighborhoods shape children's long-run life chances. This report focuses on neighborhood schools, highlighting disparities between families living in subsidized housing and those who do not. We describe the characteristics of the local public elementary schools to which children living in subsidized housing have access, including their student demographics, teacher characteristics and relative proficiency rates. We include all households with children that receive housing assistance from the Department of Housing and Urban Development (HUD) as well as those living in Low Income Housing Tax Credit (LIHTC) developments, for all 50 states and the 100 largest metropolitan areas, updating an earlier PRRAC report that relied on 2008 data.1

This report compares the profile of the schools accessible to HUD-assisted and LIHTC households in 2016 to the profile of those accessible to other similar households within the same state or metropolitan area. In brief, we find that families receiving all four major types of federal housing assistance lived near lower performing and higher poverty schools than other poor families with children as well as other renters with children. Among assisted families, those living in public housing lived near the most disadvantaged schools while those living in LIHTC developments lived near the least disad-

vantaged. We also find large differences by race within the voucher program, with black and Hispanic voucher holders living near significantly lower performing and higher poverty schools than white voucher holders. Finally, we find large variation across metropolitan areas in outcomes for assisted families. In a small set of metropolitan areas, the median assisted family lived near a school performing at or above the 50th percentile in the metropolitan areas, however, the median assisted family lived near a much lower performing school than other families in their metropolitan area.

Background

The federal government offers four main types of low-income housing subsidies. HUD administers three of them: (1) public housing; (2) Section 8 Project-Based Rental Assistance;² and (3) housing choice vouchers. The fourth federal subsidy, LIHTC, is governed by the Internal Revenue Service, though HUD is now responsible for collecting data on the individuals served in these developments. The tax credit is currently the most important resource for creating affordable housing in the United States and by 2015, had provided financing for over 2.5 million units. Note that there is substantial overlap between the households served through the tax credit developments, the housing voucher program and Project-Based Section 8, as approximately 38 percent of households in tax credit units rely on some form of federal rental assistance.3

Table 1 describes the households served by these four different types of housing assistance. Households in all four programs have low incomes, but there is variation. Close to three quarters of households

¹ Ingrid Gould Ellen and Keren Mertens Horn, *Do Federally Assisted Households Have Access to High Performing Public Schools?* (Poverty Race and Research Action Council, November 2012)

² We refer to this program as Project-Based Section 8 throughout the report. This program consists of privately owned subsidized units.

³ These data are drawn from 2015 HUD report "Understanding Whom the LIHTC Serves." https://www.huduser.gov/portal/publications/LIHTC-TenantReport-2015.html

Table 1 Description of Households with Housing Assistance								
		Voucher Public			Project- Based Section 8		LIHTC	
Mean Income	\$	14,454	\$	14,753	\$	12,505		_
Median Income		_		_		_	\$	17,470
Share Below 30% AMI		73%		71%		75%		45%
Share with individuals <18		44%		38%		28%		29%
Share Black		48%		43%		34%		37%
Share Hispanic		17%		21%		15%		19%
Share White		31%		33%		42%		36%
Share Other		4%		3%		9%		8%
Units with Household Data	2	,264,047		978,666		1,210,032		1,942,323
Total Units	2	,489,182		1,040,888		1,280,446	,	2,581,222

Source: HUD data drawn from 2017 Picture of Subsidized Households dataset https://www.huduser.gov/portal/datasets/assthsg.html. LIHTC data drawn from 2015 HUD report "Understanding Whom the LIHTC Serves." https://www.huduser.gov/portal/publications/LIHTC-TenantReport-2015.html

Notes: Share black, white, and other refers to Non-Hispanic households. For LIHTC developments 58.6 percent of households report race. Shares are calculated for these units.

served by the HUD housing programs have incomes below 30 percent of their area median income (dubbed extremely low income), while less than half of those living in LIHTC developments have incomes this low. There is also variation in the share of households with children across these four types of housing assistance. Fewer than 30 percent of households living in Project-Based Section 8 and tax credit units have children, while 44 percent of housing choice voucher holders include children. As for racial composition, the recipients of the four types of assistance look relatively similar, though a greater share of voucher holders are black (48 percent) and a greater share of residents of Project-Based Section 8 units are white (42 percent).⁴

DATA AND METRICS

Data

This analysis includes households receiving all four of the major types of federal housing assistance. For households receiving assistance from HUD, we rely on data from the 2016 national file of subsidized housing tenants provided to us by HUD, which includes household characteristics, program type, as well as residential addresses. For LIHTC developments, we use the Low Income Housing Tax Credit dataset, again provided by HUD, which includes the address of every LIHTC development placed in service by 2015.

⁴ It is important to highlight that these data do not describe the full set of households receiving assistance, with the lowest coverage for the tax credit program.

To understand how these assisted households are faring relative to other Americans in similar circumstances, we use census tract level data based on the 5-year American Community Survey estimates for the years 2012-2016, which rely on 2010 census tract boundaries. We conduct both a national analysis⁵, as well as separate analyses for each of the 100 largest metropolitan areas, using core based statistical areas (CBSAs), as defined by the Office of Management and Budget in 2013.

To describe the schools that these households are most likely to attend we collect data from four different sources. Data on the location of each public school in the United States are drawn from the 2014-2015 Common Core of Data, collected by the US Department of Education's (DOE) National Center for Education Statistics. These data also include information on the share of students receiving free and reduced price lunch as well as the demographic composition of students in each school. We supplement these data with information collected by Great Schools on the share of students in each school performing at or above the state defined proficiency rate in fourth grade in 2014-2015.6 We also include information from the DOE's Civil Rights Data Collection on teacher quality, the share of teachers in a school meeting all state certification requirements and the share in their first or second year of teaching for the 2013-2014 school year. Finally, we use the US Census Bureau TIGER/line Shapefiles to capture school district boundaries.7

Sample Construction

Our core sample includes the near universe of housing units occupied by federally subsidized households with children, whom we describe as assisted families. Specifically, we include housing units occupied by families with children⁸ receiving housing choice vouchers as well as all housing units occupied by families with children in three types of federally subsidized housing developments: Public housing, HUD Project-Based Section 8, and LIHTC developments. Unfortunately, the LIHTC dataset does not currently provide information on the characteristics of tenants, but we restrict our analysis to LIHTC units with at least two bedrooms as they are far more likely to be occupied by households with children.

We also aim to compare quality of schools available to households receiving federal rental assistance to the quality of the schools accessible to other households within the same state or metropolitan area. Specifically, we use census tract data from the American Community Survey to identify three broad comparison groups: households with children, renter households with children, and poor families with children.

Mapping Households to Schools

To describe the schools accessible to each of these sets of households, we focus on elementary schools, as children typically attend their zoned elementary school, but often have more choices for middle and high schools, particularly in urban school districts. Unfortunately, there is no publicly available national dataset on individual school zones (though school district boundaries are available). Instead, we create a proxy measure, identifying the nearest school to each housing unit within their district, using Euclidian distance. We rely on the full set of public elementary schools, which we define as schools with students in fourth grade.

⁵ The national analysis includes non-metropolitan households as well as metropolitan households.

⁶ Five states did not have 2014-2015 proficiency data. For Connecticut, Montana and West Virginia we used 2015-2016 data. For North Dakota and Nevada we relied on 2013-2014 data, as neither 2014-2015 nor 2015-2016 data were available.

⁷ https://www.census.gov/geo/maps-data/data/tiger-line.html

⁸ We define households with children as those with an individual member under the age of 18.

The nearest school will not always be the zoned school, but research shows it provides a very good approximation. Ellen, Horn and Schwartz (2016), for example, examine 13 metropolitan areas where school attendance zone information was available and report that in 64 percent of the cases, the school nearest to voucher households is also the zoned elementary school. Moreover, for the 36 percent of cases where the school nearest to voucher households is not the zoned school, the differences in school characteristics are substantively unimportant. 10

For our broader comparison groups of families with children, the census data only identify the census tract where each family lives, rather than the precise address. Thus, to describe the schools accessible to these families, we identify the school nearest to the centroid of the census tract where they reside. We then calculate a weighted average to estimate the average characteristics of the schools accessible to each group of households (all households with children, renter households with children, and poor families with children) within a state or metropolitan area.¹¹

Metrics of Educational Opportunity and School Demographics

To describe the characteristics of the schools accessible to assisted households we rely on a set of indicators that are nationally available for all public schools. We use the percentage of students in a school that score at proficient levels on math and English Language Arts standardized tests, calculated as an average of these two proficiency rates, ¹² as well as the demographic composition of students in a school (the share of students eligible for free and reduced price lunch and their racial and ethnic mix), available through the 2014-2015 Common Core of Data (using the NCES school ID). In addition, we rely on indicators of teacher quality, specifically the share of teachers in a school meeting all state certification requirements and the share in their first or second year of teaching.

As each state uses a different exam to evaluate student performance, we cannot easily compare proficiency rates across states. To overcome this challenge, we create a measure of school performance using the percentile rank for each school within every state based on student proficiency rates in math and English language arts. For the metropolitan area analyses in this report we rank schools within their respective metropolitan area.¹³

RESULTS

National Analysis

Figure 1 shows the median characteristics of schools nearest to assisted families in 2016. Figure 1A shows that across the board, recipients of all four major types of federal housing assistance lived near an elementary school that is ranked low within their state. The median state test score ranking for elementary schools nearest to voucher households

⁹ Ellen, Ingrid Gould, Keren Mertens Horn, and Amy Ellen Schwartz. 2016. "Why Don't Housing Choice Voucher Recipients Live Near Better Schools? Insights From Big Data," *Journal of Policy Analysis and Management* 35 (4): 884–905.

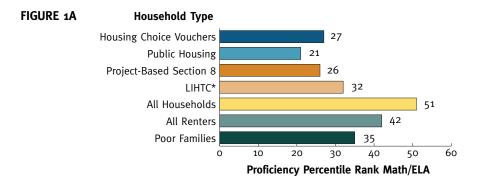
¹⁰ Specifically, they found that the nearest schools had slightly lower proficiency rates (approximately 1 to 2 percentage points lower) and slightly higher poor and minority shares (1 percent more black students, 2 percent more Hispanic students and 3 percent more students eligible for free and reduced-price lunch).

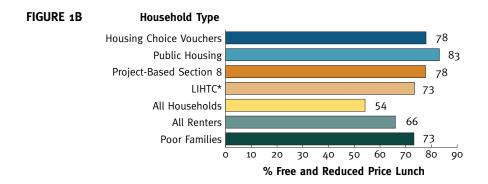
¹¹ The few households that appear to have no elementary school in a district are assigned to the nearest school regardless of district. This applies to 1 percent of all HUD assisted households and 3 percent of all census tracts. In addition, 8.8 percent of schools in the common core of data did not match to a school in the Great Schools dataset. For households matched to schools with no test score data, we conducted another round of matching to link them to the nearest school with test score data. This additional match captures 99 percent of all households in the sample.

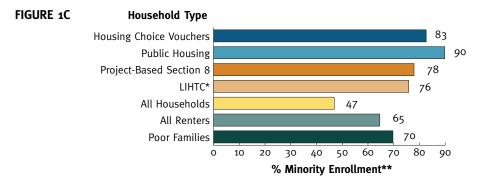
¹² For 21 states where English Language Arts scores were not available, reading scores were used in their place.

¹³ For metropolitan areas that cross state lines, we separately rank schools in the portions of the metropolitan areas that are in different states, and then pool these rankings together for the full metropolitan area.

Figure 1. Median Characteristics of Schools Nearest to Assisted Households and Other Households with Children, 2016







- * To proxy for units with children, all units with fewer than 2 bedrooms were removed.
- ** Minority enrollment refers to all children other than non-Hispanic white students.

is 27. In other words, half of voucher holders in 2016 lived near a school that was ranked in the bottom 27 percent of schools within their state based on school proficiency rates. Project-Based Section 8 tenants lived near very similar schools, with the median ranking of their nearest school falling at the 26th percentile. Children living in public housing had access to even lower performing

schools, with the median ranking of their closest school at the 21st percentile. LIHTC units with two or more bedrooms were located near to somewhat better schools, with the median ranking at the 32nd percentile. Figure 1B shows results for free and reduced price lunch, our proxy measure for poverty, and we see a similar ranking. Among assisted families, those living in public housing lived near to the

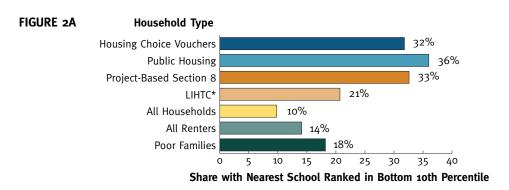
highest poverty schools, while those in LIHTC developments lived near the lowest poverty schools. Figure 1C shows results for the share of students that are minorities, and shows that among assisted families, public housing residents lived near schools with highest minority proportions, while those in LIHTC developments lived in somewhat more racially diverse schools.

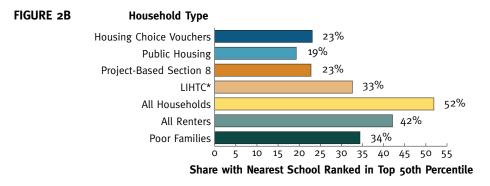
The figure also reveals that households receiving housing assistance in 2016 lived near much lower performing and higher poverty schools than the median household with children in the United States.¹⁴ Even compared to renters and poor families with children, households with housing assistance

still lived near lower-performing schools, though these gaps are much narrower, shrinking by 16 percentile points. That is, the typical household receiving each type of housing assistance in 2016 lived near a lower performing school than the typical renter as well as the typical poor family in the U.S. We see large disparities when looking at school poverty rates and racial composition, though the median poverty rate of the schools nearest to LIHTC families is identical to the median for the schools nearest to poor families with children.

Median outcomes do not tell the full story, as they conceal the distribution of households with children across schools. Figure 2 captures part of this distri-

Figure 2. Distribution of Households with Children Across Schools by School Characteristics, Proficiency Rate 2016





* To proxy for units with children, all units with fewer than 2 bedrooms were removed.

¹⁴ As many high poverty school districts have switched to universal school lunch provision and thus report 100 percent free and reduced price lunch even when poverty rates are lower, we have also run this analysis dropping districts where all elementary schools are reported to have 100 percent free and reduced price lunch. These numbers are only slightly lower (about 0.5 percentage points) than those we report for the full sample of schools and thus we have chosen to report the numbers for the full sample.

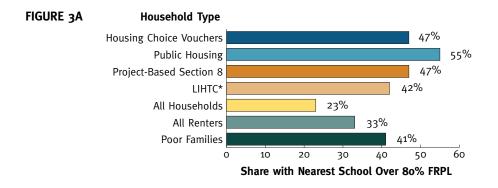
bution by reporting on the share of households with assistance living near schools ranking in the bottom 10th of schools in their state (Figure 2A) and those living near schools ranking in the top half of their state (Figure 2B). The numbers highlight that many assisted families have access to the most disadvantaged schools within their state. In 2016, over a third of public housing residents lived near schools in the bottom 10th of schools within their state, as did close to a third of voucher holders and residents of Project-Based Section 8 units. LIHTC residents were the least likely to live near such low performing schools, with about one in five living near to a school ranking in the bottom tenth within their state.

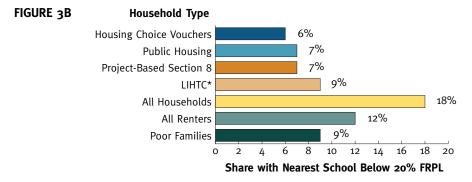
When looking at the other extreme in Figure 2B, we see that few assisted households in 2016 were able to reach schools ranked in the top half of their

state. Public housing residents were the least likely to live near such schools (19 percent). Voucher holders and Project-Based Section 8 tenants were slightly more likely (23 percent) to live near schools ranking in the top half of their state, and tax credit tenants even more likely (33 percent). All four of these groups of assisted households were less likely to live near a school ranked in the top half of their state than either the full set of renters or poor families with children, though for tax credit tenants, the differences with poor families with children were quite small (1 percentage point).

Figure 3 shows that similar patterns emerge when examining the share of households living near to a high-poverty school (Figure 3A, with over 80 percent of students eligible for free or reduced price lunch) and the share living near to a low-poverty school

Figure 3. Distribution of Households with Children Across Schools by School Characteristics, Free and Reduced Price Lunch 2016





^{*} To proxy for units with children, all units with fewer than 2 bedrooms were removed.

(Figure 3B, with fewer than 20 percent of students eligible for free or reduced price lunch). Among assisted households, public housing families were most likely to live near high-poverty schools, and LIHTC households least likely. But all four groups of assisted households were more likely to live near high-poverty schools than both renters and poor families, though differences are again small between LIHTC residents and poor families. Meanwhile, very few assisted households lived near to a low-poverty school.

To capture additional measures of school quality, we supplement these indicators with information on teacher experience, specifically the share of teachers in their first or second year, and the share of teachers certified (measuring teacher training). These are not perfect measures of teacher quality, but they help to describe the overall qualifications of the teaching staff in a given school. These results are presented in Appendix Table 1 (page 22) and show relatively small differences. We see that the median household with housing assistance in 2016 lived near to a school where approximately 10 percent of teachers are in their first or second year of teaching, which is slightly higher than the share for the full set of households with children in the United States (8 percent), as well as the share for renter households with children and poor households with children (9 percent). Few families live near to schools where over half of teachers are in their first or second year of teaching, but in 2016, households with housing assistance were slightly more likely to live near such schools than other renters and poor families with children. The last two columns examine teacher certification. The median assisted household with children lived near to a school in which 100 percent of teachers are certified, as does the median household with children. When looking at the extremes, however, we see that households with housing assistance were slightly more likely to live near schools in which fewer than 90 percent of teachers are certified. Specifically, between 9 percent and 11 percent of households with housing assistance

lived near these schools, whereas only 6 percent of all households with children and 7 percent of renter households with children and poor families with children lived near these types of schools. These patterns follow those observed when looking at school rankings based on proficiency, though the differences are far smaller.

In sum, households with housing assistance overall lived near far more disadvantaged schools than other poor families with children in 2016. But these average statistics mask large differences across assisted families of different races. Figure 4 considers racial differences within the voucher program. Figure 4A shows that black and Hispanic voucher households lived near significantly lower performing and higher poverty schools than white voucher households. Figure 4B and Figure 4C show analogous results for the share of students receiving free and reduced price lunch as well as the share of students that are minorities. Specifically, we see that the median school nearest to white voucher holders is ranked 17 percentile points higher than that of the median school nearest to black voucher holders and 12 percentile points higher than that of the median school nearest to Hispanic voucher holders. Differences in poverty rates are even larger. The median white voucher holder lived near a school with a poverty rate that is 19 percent lower than the median black or Hispanic voucher holder.

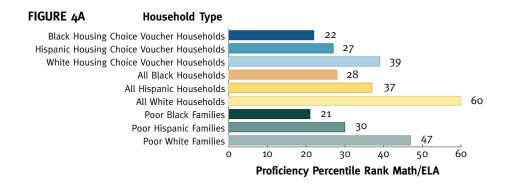
To be clear, racial differences do not exist only for assisted families. Indeed, we see even larger racial differences for the population at large, with white households with children living near schools that are ranked 32 percentile points higher than those near black households and 23 percentile points higher than those near Hispanic households. These racial gaps are narrower for poor families, but still larger than the gaps among voucher households.

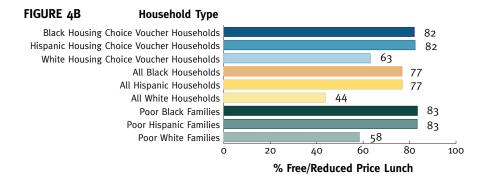
Figure 4 also demonstrates that differences in school access between families with vouchers and other families of the same race are smaller than overall

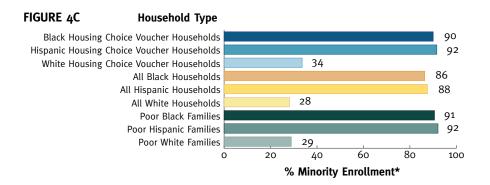
population gaps, at least for black and Hispanic families. Specifically, with respect to the median proficiency ranking of the closest school, we see a gap of 6 percentile points for black households, 10 percentile points for Hispanic households and 21 percentile points for white households. When comparing outcomes for voucher households to those of poor families by race, the gaps are even narrower.

Specifically, for Hispanic households the difference is only 3 percentile points and for white households 8 percentile points. Indeed, the pattern for black households actually reverses, with black voucher households living near slightly higher performing schools than poor black families.

Figure 4. Median Characteristics of Schools Nearest to Housing Choice Voucher Households and Other Households with Children by Race, 2016







^{*} Minority enrollment refers to all children other than non-Hispanic white students.

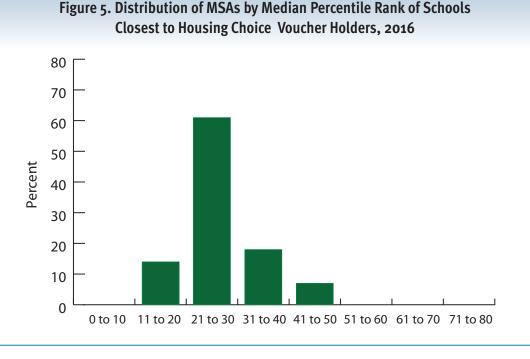
Metropolitan Areas

We conduct a similar analysis at the metropolitan level, and once again find large variation in outcomes across metropolitan areas. To conduct this analysis, we rank schools within each state and metropolitan area, and then attach this ranking to each assisted housing unit.¹⁵ We then summarize the variation across metropolitan areas in Figures 5 through 8, which present histograms of the distribution of the median performance of schools nearest assisted households in each type of program in each metropolitan area.

Starting with Figure 5 we see that the median proficiency rate ranking of schools nearest to voucher households with children ranges between the 12th and the 49th percentile, with the ranking in most metropolitan areas falling between the 21st and 30th percentile. The two metropolitan areas in which voucher holders live near to the highest ranking schools are both in Texas: El Paso and McAllen-Edinburg-Mission. We see an even wider

distribution for the schools near public housing units, with median rankings ranging from the 3rd percentile to the 66th percentile, with a majority of metropolitan areas clustered between the 13th percentile and the 27th percentile. The median school near to Project-Based Section 8 units is similarly ranked within most metropolitan areas, but the overall distribution is wider, with median rankings ranging from the 4th percentile to the 89th percentile (Provo-Orem, UT). Finally, the distribution of the median proficiency ranking of schools nearest to family-sized units in LIHTC developments ranges from the 5th percentile to the 57th, with a majority of metropolitan areas falling between the 26th percentile and the 38th percentile.

All of these data are presented in Tables 2 through 5, showing the full list of the 100 largest metropolitan areas, ranked based on the median performance ranking of schools nearest to each set of assisted households. This list highlights that metropolitan



¹⁵ We include the full set of tables for each state and metropolitan area in an on-line appendix.

Figure 6. Distribution of MSAs by Median Percentile Rank of Schools Closest to Public Housing, 2016

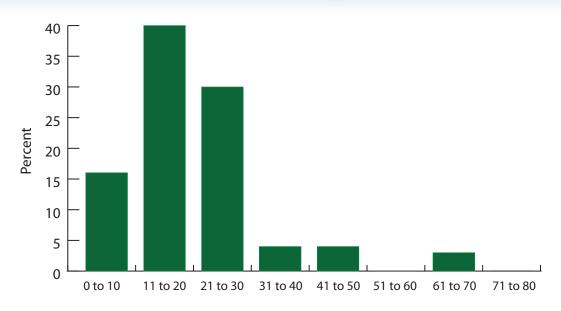


Figure 7. Distribution of MSAs by Median Percentile Rank of Schools Closest to Project-Based Section 8, 2016

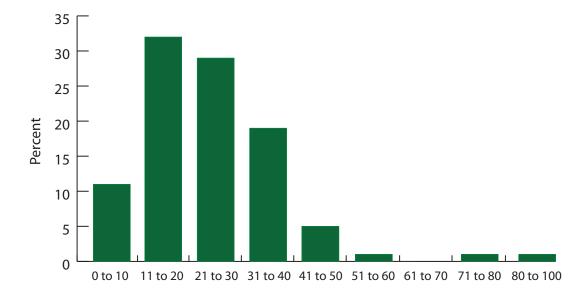
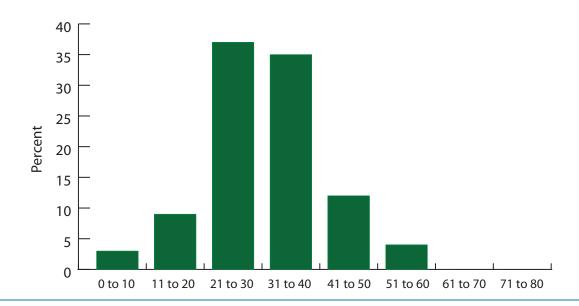


Figure 8. Distribution of MSAs by Median Percentile Rank of Schools Closest to LIHTC, 2016



areas that are smaller or in the South and West provide greater opportunities for assisted households in terms of school quality. More work is necessary to understand what is driving this variation across metropolitan areas.

Comparison to 2008

Overall, results from the 2016 analysis are very similar to those reported in our 2008 analysis, suggesting that school access has remained substantively the same for the median household living in federally subsidized rental housing. Among assisted households, LIHTC residents in both years were able to reach the least disadvantaged schools. Moreover, in both years, families living in all types of assisted housing were more likely to live near the very lowest performing schools in their state than either the full set of renters with children or the full set of poor families with children. Finally, we find similar racial differences for housing choice voucher holders in both years, with the gaps between white and minority voucher holders narrowing slightly.

When looking at outcomes in each of the metropolitan areas in our analysis we find a similar distribution of MSAs in 2016 as we found in 2008. For Housing Choice Voucher Holders, the distribution narrowed slightly, with the distribution of median proficiency rates ranging from 6th to 54th in 2008 versus between 12th and 49th in 2016. For public housing the distribution also narrowed from 2nd to 75th in 2008 to 3rd to 66th in 2016. For tax credit units, the distribution also appears to have narrowed slightly, but for Project Based Section 8 it appears to have widened slightly.

Note that due to the long time lag between these analyses we were not able to use the same data and methods in both years, so we do not recommend comparing the numbers in this report with those in the earlier report. One key difference is that the old report relied on the school attendance boundary information system in the states and metropolitan areas where it was available at the time. Unfortunately, these data are no longer publicly available and thus we rely on the nearest school for the full set of



Photo credit: Susannah Pazdan

households included in this report. Another is that in 2008, test score data was provided directly by the US Department of Education. These data are also no longer publicly provided and thus we relied on data assembled by Great Schools for this updated analysis. A third difference is the metropolitan areas

rely on different geographic boundaries in these two reports, thus a metropolitan area with the same name may not represent exactly the same geography. Comparisons between relative differences between groups of households in the two years have more validity.

TABLE 2: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Housing Choice Voucher Holders, 2016

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank	CBSA Name	Proficiency Rank
1	El Paso, TX	49	31	Columbia, SC	29
2	McAllen-Edinburg-Mission, TX	47	32	Knoxville, TN	29
3	Greenville-Anderson-Mauldin, SC	44	33	San Diego-Carlsbad, CA	29
4	Provo-Orem, UT	44	34	Worcester, MA-CT	29
5	Boise City, ID	41	35	Cape Coral-Fort Myers, FL	28
6	Lakeland-Winter Haven, FL	41	36	Columbus, OH	28
7	Las Vegas-Henderson-Paradise, NV	41	37	Phoenix-Mesa-Scottsdale, AZ	28
8	Memphis, TN-MS-AR	40	38	Raleigh, NC	28
9	Stockton-Lodi, CA	39	39	Seattle-Tacoma-Bellevue, WA	28
10	Bakersfield, CA	38	40	Toledo, OH	28
11	Cleveland-Elyria, OH	37	41	Augusta-Richmond County, GA-SC	27
12	Albuquerque, NM	35	42	Charleston-North Charleston, SC	27
13	Bridgeport-Stamford-Norwalk, CT	33	43	Denver-Aurora-Lakewood, CO	27
14	Little Rock-North Little Rock-Conway, AR	33	44	Fresno, CA	27
15	Akron, OH	32	45	New Haven-Milford, CT	27
16	Baltimore-Columbia-Towson, MD	32	46	New Orleans-Metairie, LA	27
17	Dayton, OH	32	47	Oxnard-Thousand Oaks-Ventura, CA	27
18	Durham-Chapel Hill, NC	32	48	Sacramento-Roseville-Arden-Arcade, CA	27
19	Greensboro-High Point, NC	32	49	San Jose-Sunnyvale-Santa Clara, CA	27
20	Jackson, MS	32	50	Virginia Beach-Norfolk-Newport News, VA-N	IC 27
21	Riverside-San Bernardino-Ontario, CA	32	51	Kansas City, MO-KS	26
22	San Antonio-New Braunfels, TX	32	52	Orlando-Kissimmee-Sanford, FL	26
23	Spokane-Spokane Valley, WA	32	53	Salt Lake City, UT	26
24	Scranton-Wilkes-Barre-Hazleton, PA	31	54	San Francisco-Oakland-Hayward, CA	26
25	Washington-Arlington-Alexandria, DC-VA-MI	D-WV 31	55	Springfield, MA	26
26	Portland-Vancouver-Hillsboro, OR-WA	30	56	Charlotte-Concord-Gastonia, NC-SC	25
27	Providence–Warwick, RI–MA	30	57	Houston-The Woodlands-Sugar Land, TX	25
28	Austin-Round Rock, TX	29	58	Jacksonville, FL	25
29	Baton Rouge, LA	29	59	Los Angeles-Long Beach-Anaheim, CA	25
30	Colorado Springs, CO	29	60	Louisville/Jefferson County, KY-IN	25

TABLE 2: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Housing Choice Voucher Holders, 2016

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank	CBSA Name	Proficiency Rank
61	Palm Bay-Melbourne-Titusville, FL	25	81	Buffalo-Cheektowaga-Niagara Falls, NY	21
62	Richmond, VA	25	82	Indianapolis-Carmel-Anderson, IN	21
63	Rochester, NY	25	83	Madison, WI	21
64	Tampa-St. Petersburg-Clearwater, FL	25	84	New York-Newark-Jersey City, NY-NJ-PA	21
65	Urban Honolulu, HI	25	85	North Port-Sarasota-Bradenton, FL	21
66	Chattanooga, TN-GA	24	86	Omaha-Council Bluffs, NE-IA	21
67	Cincinnati, OH-KY-IN	24	87	Allentown-Bethlehem-Easton, PA-NJ	20
68	Dallas-Fort Worth-Arlington, TX	24	88	Milwaukee-Waukesha-West Allis, WI	20
69	Des Moines-West Des Moines, IA	24	89	Nashville-Davidson-Murfreesboro-Franklin,	TN 20
70	Miami-Fort Lauderdale-West Palm Beach, FL	24	90	Detroit-Warren-Dearborn, MI	18
71	Tucson, AZ	24	91	Birmingham-Hoover, AL	17
72	Chicago-Naperville-Elgin, IL-IN-WI	23	92	Harrisburg-Carlisle, PA	17
73	Minneapolis-St. Paul-Bloomington, MN-WI	23	93	Hartford-West Hartford-East Hartford, CT	17
74	Oklahoma City, OK	23	94	Wichita, KS	17
75	Philadelphia-Camden-Wilmington, PA-NJ-DE-	-MD 23	95	Albany-Schenectady-Troy, NY	16
76	Boston-Cambridge-Newton, MA-NH	22	96	Pittsburgh, PA	15
77	Deltona-Daytona Beach-Ormond Beach, FL	22	97	Syracuse, NY	15
78	Ogden-Clearfield, UT	22	98	Winston-Salem, NC	15
79	St. Louis, MO-IL	22	99	Grand Rapids-Wyoming, MI	14
80	Atlanta-Sandy Springs-Roswell, GA	21	100	Tulsa, OK	12

Table 3: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Public Housing Tenants, 2016*

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank	CBSA Name	Proficiency Rank
1	Tampa-St. Petersburg-Clearwater, FL	66	31	Raleigh, NC	25
2	Worcester, MA-CT	66	32	Austin-Round Rock, TX	24
3	Memphis, TN-MS-AR	64	33	Hartford-West Hartford-East Hartford, CT	24
4	McAllen-Edinburg-Mission, TX	49	34	Indianapolis-Carmel-Anderson, IN	24
5	Greenville-Anderson-Mauldin, SC	47	35	Knoxville, TN	23
6	Scranton-Wilkes-Barre-Hazleton, PA	45	36	Washington-Arlington-Alexandria, DC-VA-MI	D-WV 23
7	Provo-Orem, UT	44	37	Bakersfield, CA	22
8	Albuquerque, NM	39	38	Colorado Springs, CO	22
9	Atlanta-Sandy Springs-Roswell, GA	34	39	Jacksonville, FL	22
10	Louisville/Jefferson County, KY-IN	34	40	Chattanooga, TN-GA	21
11	Augusta-Richmond County, GA-SC	32	41	Salt Lake City, UT	21
12	Columbus, OH	30	42	Bridgeport-Stamford-Norwalk, CT	20
13	New Orleans-Metairie, LA	30	43	Milwaukee–Waukesha–West Allis, WI	20
14	Orlando-Kissimmee-Sanford, FL	30	44	New York-Newark-Jersey City, NY-NJ-PA	20
15	San Francisco-Oakland-Hayward, CA	30	45	Springfield, MA	20
16	Seattle-Tacoma-Bellevue, WA	30	46	Toledo, OH	20
17	Akron, OH	29	47	Allentown-Bethlehem-Easton, PA-NJ	19
18	Cleveland-Elyria, OH	29	48	Baton Rouge, LA	19
19	Las Vegas-Henderson-Paradise, NV	29	49	Columbia, SC	19
20	Tucson, AZ	29	50	Stockton-Lodi, CA	19
21	Lakeland–Winter Haven, FL	28	51	Charlotte-Concord-Gastonia, NC-SC	18
22	San Diego-Carlsbad, CA	28	52	Miami-Fort Lauderdale-West Palm Beach, FL	18
23	Cincinnati, OH-KY-IN	27	53	Sacramento-Roseville-Arden-Arcade, CA	18
24	Dayton, OH	27	54	Boston-Cambridge-Newton, MA-NH	17
25	Durham-Chapel Hill, NC	27	55	Chicago-Naperville-Elgin, IL-IN-WI	17
26	El Paso, TX	27	56	Pittsburgh, PA	17
27	Fresno, CA	27	57	Portland-Vancouver-Hillsboro, OR-WA	17
28	Ogden–Clearfield, UT	26	58	Boise City, ID	16
29	Denver-Aurora-Lakewood, CO	25	59	Grand Rapids-Wyoming, MI	16
30	Palm Bay-Melbourne-Titusville, FL	25	60	Phoenix-Mesa-Scottsdale, AZ	16

Table 3: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Public Housing Tenants, 2016*

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank		ficiency Rank
61	Riverside-San Bernardino-Ontario, CA	16	80	Philadelphia-Camden-Wilmington, PA-NJ-DE-	MD 12
62	Buffalo-Cheektowaga-Niagara Falls, NY	15	81	Oxnard-Thousand Oaks-Ventura, CA	11
63	San Antonio-New Braunfels, TX	15	82	Charleston-North Charleston, SC	10
64	Birmingham-Hoover, AL	14	83	Nashville-Davidson-Murfreesboro-Franklin, TN	10
65	Deltona-Daytona Beach-Ormond Beach, FL	14	84	Omaha-Council Bluffs, NE-IA	10
66	Detroit-Warren-Dearborn, MI	14	85	Kansas City, MO-KS	9
67	New Haven-Milford, CT	14	86	Madison, WI	9
68	Rochester, NY	14	87	Minneapolis-St. Paul-Bloomington, MN-WI	9
69	Virginia Beach-Norfolk-Newport News, VA-No	14	88	Richmond, VA	8
70	Cape Coral-Fort Myers, FL	13	89	St. Louis, MO-IL	7
71	Greensboro-High Point, NC	13	90	Jackson, MS	7
72	Little Rock-North Little Rock-Conway, AR	13	91	Houston-The Woodlands-Sugar Land, TX	5
73	North Port-Sarasota-Bradenton, FL	13	92	Baltimore-Columbia-Towson, MD	4
74	Providence–Warwick, RI–MA	13	93	Harrisburg-Carlisle, PA	4
75	Tulsa, OK	13	94	Winston-Salem, NC	4
76	Urban Honolulu, HI	13	95	Dallas-Fort Worth-Arlington, TX	3
77	Wichita, KS	13	96	Oklahoma City, OK	3
78	Albany-Schenectady-Troy, NY	12	97	Syracuse, NY	3
79	Los Angeles-Long Beach-Anaheim, CA	12			

^{*} Only 97 CBSAs ranked as three of the largest CBSAs had no public housing units.

Table 4: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Project-Based Section 8 Tenants, 2016*

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank	CBSA Name	roficiency Rank
1	Provo-Orem, UT	89	31	Wichita, KS	29
2	Albuquerque, NM	51	32	Augusta-Richmond County, GA-SC	27
3	Akron, OH	50	33	Bakersfield, CA	27
4	Knoxville, TN	47	34	Madison, WI	27
5	Bridgeport-Stamford-Norwalk, CT	43	35	Milwaukee-Waukesha-West Allis, WI	27
6	McAllen-Edinburg-Mission, TX	43	36	Rochester, NY	27
7	Oklahoma City, OK	43	37	San Diego-Carlsbad, CA	27
8	Louisville/Jefferson County, KY-IN	40	38	Chattanooga, TN-GA	26
9	Seattle-Tacoma-Bellevue, WA	40	39	Denver-Aurora-Lakewood, CO	25
10	Salt Lake City, UT	39	40	Phoenix-Mesa-Scottsdale, AZ	25
11	Buffalo-Cheektowaga-Niagara Falls, NY	38	41	Virginia Beach-Norfolk-Newport News, VA-NC	25
12	Urban Honolulu, HI	37	42	Baltimore-Columbia-Towson, MD	24
13	Grand Rapids-Wyoming, MI	36	43	Orlando-Kissimmee-Sanford, FL	24
14	Las Vegas-Henderson-Paradise, NV	35	44	San Antonio-New Braunfels, TX	24
15	New Orleans-Metairie, LA	35	45	Cincinnati, OH-KY-IN	23
16	Greenville-Anderson-Mauldin, SC	34	46	Memphis, TN-MS-AR	23
17	Washington-Arlington-Alexandria, DC-VA-MD-	·WV 34	47	Portland-Vancouver-Hillsboro, OR-WA	23
18	Dayton, OH	33	48	Austin-Round Rock, TX	22
19	Ogden-Clearfield, UT	33	49	Chicago-Naperville-Elgin, IL-IN-WI	22
20	Charleston-North Charleston, SC	32	50	Columbia, SC	22
21	Minneapolis-St. Paul-Bloomington, MN-WI	32	51	Fresno, CA	22
22	Omaha-Council Bluffs, NE-IA	32	52	Jackson, MS	22
23	Sacramento-Roseville-Arden-Arcade, CA	32	53	Philadelphia-Camden-Wilmington, PA-NJ-DE	-MD 22
24	Winston-Salem, NC	32	54	Riverside-San Bernardino-Ontario, CA	21
25	Toledo, OH	31	55	Springfield, MA	21
26	Worcester, MA-CT	31	56	Columbus, OH	20
27	El Paso, TX	30	57	New York-Newark-Jersey City, NY-NJ-PA	20
28	Lakeland–Winter Haven, FL	29	58	St. Louis, MO-IL	20
29	Los Angeles-Long Beach-Anaheim, CA	29	59	Pittsburgh, PA	19
30	Providence–Warwick, RI–MA	29	60	Scranton-Wilkes-Barre-Hazleton, PA	19

Table 4: 100 Largest MSAs – Median Proficiency Percentile Rank of Schools Closest to Project-Based Section 8 Tenants, 2016*

MSA Rank	CBSA Name	Proficiency Rank	MSA Rank	CBSA Name	roficiency Rank
61	Baton Rouge, LA	18	80	Nashville-Davidson-Murfreesboro-Franklin, 7	ΓN 14
62	Dallas-Fort Worth-Arlington, TX	18	81	San Francisco-Oakland-Hayward, CA	14
63	Kansas City, MO-KS	18	82	Spokane-Spokane Valley, WA	14
64	Allentown-Bethlehem-Easton, PA-NJ	17	83	Boise City, ID	13
65	Charlotte-Concord-Gastonia, NC-SC	17	84	Cape Coral-Fort Myers, FL	13
66	Greensboro–High Point, NC	17	85	Houston-The Woodlands-Sugar Land, TX	13
67	Harrisburg-Carlisle, PA	17	86	Atlanta-Sandy Springs-Roswell, GA	12
68	Little Rock-North Little Rock-Conway, AR	17	87	Jacksonville, FL	11
69	New Haven-Milford, CT	17	88	Syracuse, NY	10
70	Raleigh, NC	17	89	Tulsa, OK	10
71	Richmond, VA	17	90	Miami-Fort Lauderdale-West Palm Beach, FL	8
72	San Jose-Sunnyvale-Santa Clara, CA	17	91	Palm Bay-Melbourne-Titusville, FL	8
73	Boston-Cambridge-Newton, MA-NH	16	92	Tampa-St. Petersburg-Clearwater, FL	8
74	Cleveland-Elyria, OH	16	93	Deltona-Daytona Beach-Ormond Beach, FL	7
75	Indianapolis-Carmel-Anderson, IN	16	94	Hartford-West Hartford-East Hartford, CT	7
76	Tucson, AZ	16	95	Stockton-Lodi, CA	6
77	Detroit-Warren-Dearborn, MI	15	96	Albany-Schenectady-Troy, NY	5
78	Birmingham-Hoover, AL	14	97	Des Moines-West Des Moines, IA	5
79	Colorado Springs, CO	14	98	Durham-Chapel Hill, NC	4

^{*} Only 98 CBSAs ranked as two of the largest CBSAs had no Project-Based Section 8.

Table 5: 100 Largest MSAs — Median Proficiency Percentile Rank of Schools Closest to Low Income Housing Tax Credit Tenants, 2016

MSA Rank	CBSA Name	Percentile Rank	MSA Rank	CBSA Name	ercentile Rank
1	Greenville-Anderson-Mauldin, SC	57	31	Knoxville, TN	36
2	Provo-Orem, UT	57	32	Dayton, OH	35
3	Charleston-North Charleston, SC	56	33	Des Moines-West Des Moines, IA	35
4	Lakeland–Winter Haven, FL	55	34	Milwaukee-Waukesha-West Allis, WI	35
5	Memphis, TN-MS-AR	50	35	Salt Lake City, UT	35
6	McAllen-Edinburg-Mission, TX	49	36	Virginia Beach-Norfolk-Newport News, VA-NC	35
7	Bridgeport-Stamford-Norwalk, CT	47	37	Denver-Aurora-Lakewood, CO	34
8	Wichita, KS	47	38	El Paso, TX	34
9	Albuquerque, NM	46	39	Grand Rapids-Wyoming, MI	34
10	Rochester, NY	46	40	Louisville/Jefferson County, KY-IN	34
11	Austin-Round Rock, TX	44	41	Riverside-San Bernardino-Ontario, CA	34
12	Colorado Springs, CO	44	42	Washington-Arlington-Alexandria, DC-VA-MD-	·WV 34
13	Harrisburg-Carlisle, PA	43	43	Las Vegas-Henderson-Paradise, NV	33
14	Jacksonville, FL	42	44	Los Angeles-Long Beach-Anaheim, CA	33
15	Sacramento-Roseville-Arden-Arcade, CA	42	45	New Orleans-Metairie, LA	33
16	Deltona-Daytona Beach-Ormond Beach, FL	41	46	Jackson, MS	32
17	Augusta-Richmond County, GA-SC	40	47	Providence-Warwick, RI-MA	32
18	New Haven-Milford, CT	40	48	Baton Rouge, LA	31
19	Spokane-Spokane Valley, WA	40	49	Columbus, OH	31
20	Boise City, ID	39	50	Madison, WI	31
21	Palm Bay-Melbourne-Titusville, FL	39	51	Scranton-Wilkes-Barre-Hazleton, PA	31
22	Birmingham-Hoover, AL	38	52	Fresno, CA	30
23	Minneapolis-St. Paul-Bloomington, MN-WI	38	53	Little Rock-North Little Rock-Conway, AR	30
24	Raleigh, NC	38	54	Oxnard-Thousand Oaks-Ventura, CA	30
25	Cincinnati, OH-KY-IN	37	55	San Diego-Carlsbad, CA	30
26	Durham-Chapel Hill, NC	37	56	Seattle-Tacoma-Bellevue, WA	30
27	Portland-Vancouver-Hillsboro, OR-WA	37	57	Columbia, SC	29
28	Syracuse, NY	37	58	Orlando-Kissimmee-Sanford, FL	29
29	Tulsa, OK	37	59	Worcester, MA-CT	29
30	Indianapolis-Carmel-Anderson, IN	36	60	Charlotte-Concord-Gastonia, NC-SC	28

Table 5: 100 Largest MSAs — Median Proficiency Percentile Rank of Schools Closest to Low Income Housing Tax Credit Tenants, 2016

MSA Rank	CBSA Name	Percentile Rank	MSA Rank	CBSA Name	Percentile Rank
61	Hartford-West Hartford-East Hartford, CT	28	81	Baltimore-Columbia-Towson, MD	24
62	St. Louis, MO-IL	28	82	Nashville-Davidson-Murfreesboro-Franklin,	TN 24
63	San Antonio-New Braunfels, TX	28	83	New York-Newark-Jersey City, NY-NJ-PA	23
64	San Francisco-Oakland-Hayward, CA	28	84	North Port-Sarasota-Bradenton, FL	23
65	Tampa-St. Petersburg-Clearwater, FL	28	85	Chicago-Naperville-Elgin, IL-IN-WI	22
66	Bakersfield, CA	27	86	Toledo, OH	22
67	Dallas-Fort Worth-Arlington, TX	27	87	Cleveland-Elyria, OH	21
68	Kansas City, MO–KS	27	88	Greensboro-High Point, NC	21
69	Miami-Fort Lauderdale-West Palm Beach, FL	27	89	Buffalo-Cheektowaga-Niagara Falls, NY	20
70	Phoenix-Mesa-Scottsdale, AZ	27	90	Boston-Cambridge-Newton, MA-NH	19
71	Richmond, VA	27	91	Detroit-Warren-Dearborn, MI	18
72	San Jose-Sunnyvale-Santa Clara, CA	27	92	Atlanta-Sandy Springs-Roswell, GA	17
73	Chattanooga, TN-GA	26	93	Philadelphia-Camden-Wilmington, PA-NJ-DI	E-MD 16
74	Houston-The Woodlands-Sugar Land, TX	26	94	Winston-Salem, NC	15
75	Ogden-Clearfield, UT	26	95	Pittsburgh, PA	14
76	Urban Honolulu, HI	26	96	Albany-Schenectady-Troy, NY	13
77	Oklahoma City, OK	25	97	Cape Coral-Fort Myers, FL	13
78	Omaha-Council Bluffs, NE-IA	25	98	Springfield, MA	10
79	Stockton-Lodi, CA	25	99	Tucson, AZ	7
80	Akron, OH	24	100	Allentown-Bethlehem-Easton, PA-NJ	5

Conclusion

Research on the Moving to Opportunity Demonstration Program showed that housing assistance has the potential to break the cycle of poverty through allowing young children to reach low-poverty neighborhoods and likely higher performing schools. Unfortunately this analysis shows that in 2016, children living in assisted housing typically had access to very disadvantaged schools, even compared to other poor families. This is perhaps most surprising for the voucher program, given that housing choice vouchers have the potential to allow low-income families to reach neighborhoods and schools that are of higher quality than those accessed by other poor households. Yet our research suggests that most voucher holders are not getting to those schools. We are hopeful that

recent HUD reforms, such as the Small Area Fair Market Rent rule, possibly combined with housing mobility counseling and housing search assistance, will give voucher families better access to high performing schools. Reforms of HUD's project based programs and the LIHTC program could also help low income households reach neighborhoods with higher performing schools.

Future research should also explore the considerable variation we find across metropolitan areas. In some areas, assisted households lived near relatively high performing schools in comparison to other households in the same metropolitan area. These metropolitan areas tend to have smaller populations and lower levels of racial segregation and to be located in the South and West.

Appendix A: Table 1. Teacher Experience and Training for schools nearest

assisted households, 2016

Appendix B: State-by-state tables

Appendix C: Metropolitan area tables

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