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Spatial Analysis of Students Residing in Metro Hartford in HPS-run Magnet Schools, 2011-12 and 2012-13

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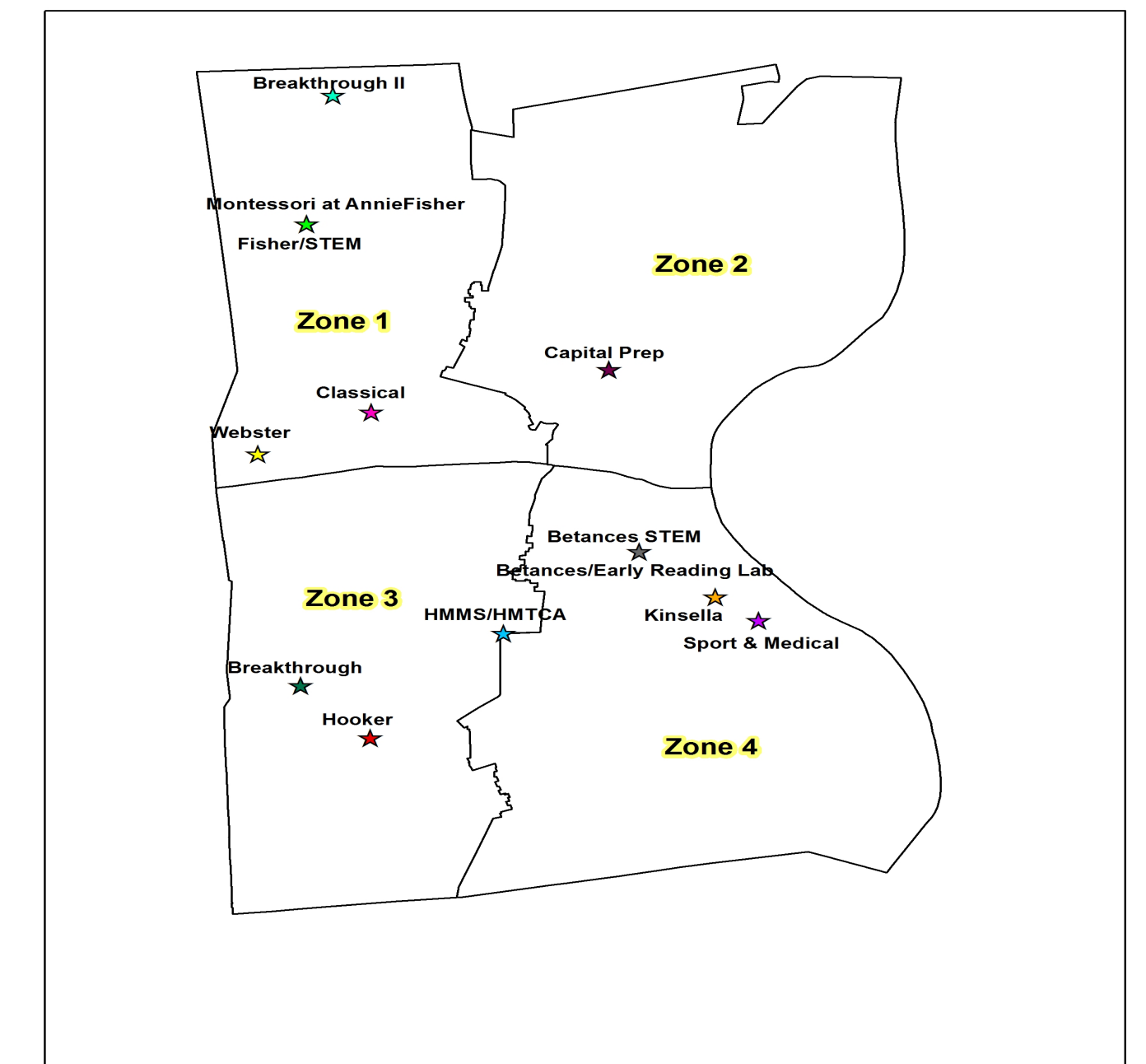
Introduction

On July 9, 1996 the Connecticut Supreme Court held, in response to the Sheff v O'Neill suit filed in 1989, that public school students in the City of Hartford attended schools that were racially, ethnically, and economically isolated, in violation of the Connecticut Constitution. The remedy called for a program of voluntary interdistrict programs as the instruments to reduce racial, ethnic and economic isolation.

Among the voluntary interdistrict programs are interdistrict magnet schools governed and operated by the Hartford Public Schools (HPS) system. In order to be approved and funded as an interdistrict magnet school, the school enrollment must fall within the Sheff racial desegregation guideline. In general, the guideline states that magnet schools must enroll between 25 and 75 percent students of color. For magnet schools located inside the city of Hartford, the challenge is to attract white students, most of whom live in suburban school districts.

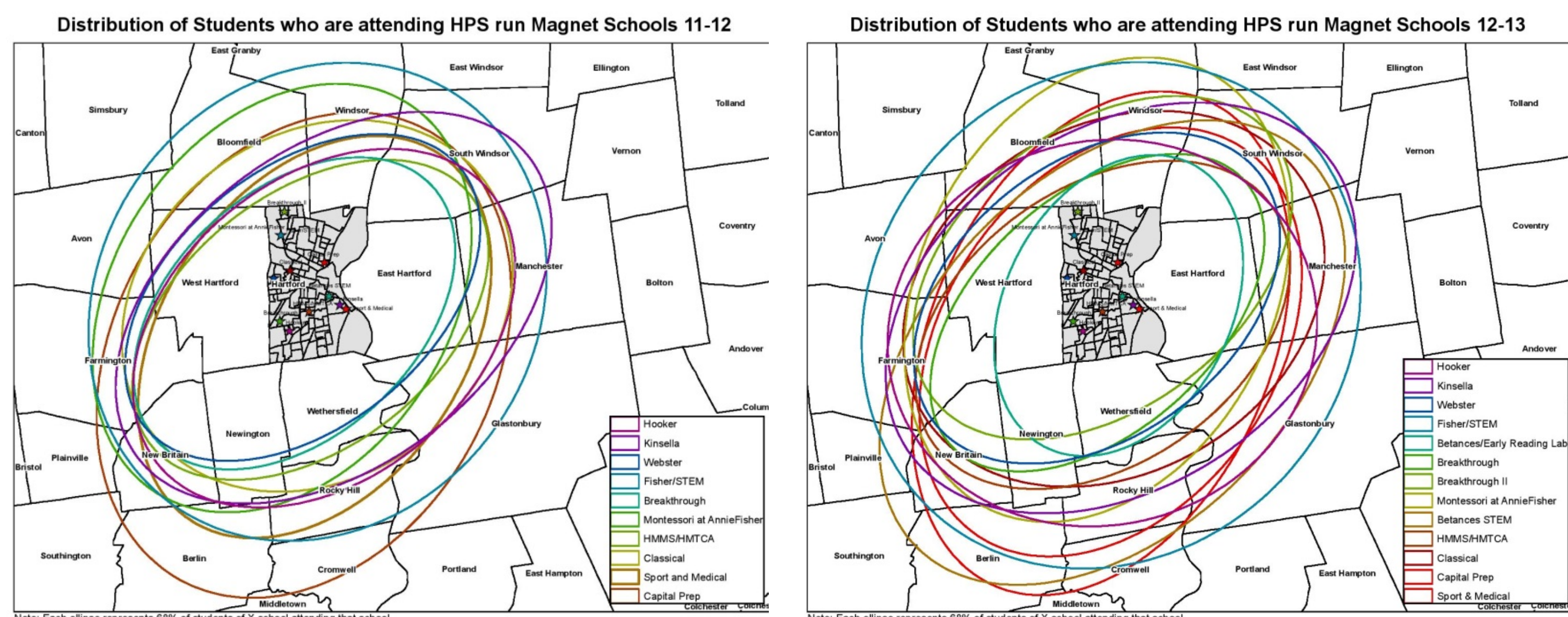
This report analyzes the spatial distribution of those Hartford and non-Hartford residents who attended Hartford magnet schools in 2011-12 and 2012-13 to identify differences in attendance across towns, schools and years. We found an increase in students attending HPS-run magnets in 2012-13, who live in towns that are both farther from Hartford and have a high non-minority population.

HPS Magnet Schools across Hartford School Zones



1. Drawing a standard deviational ellipse for each HPS Magnet School

Compactness and Orientation

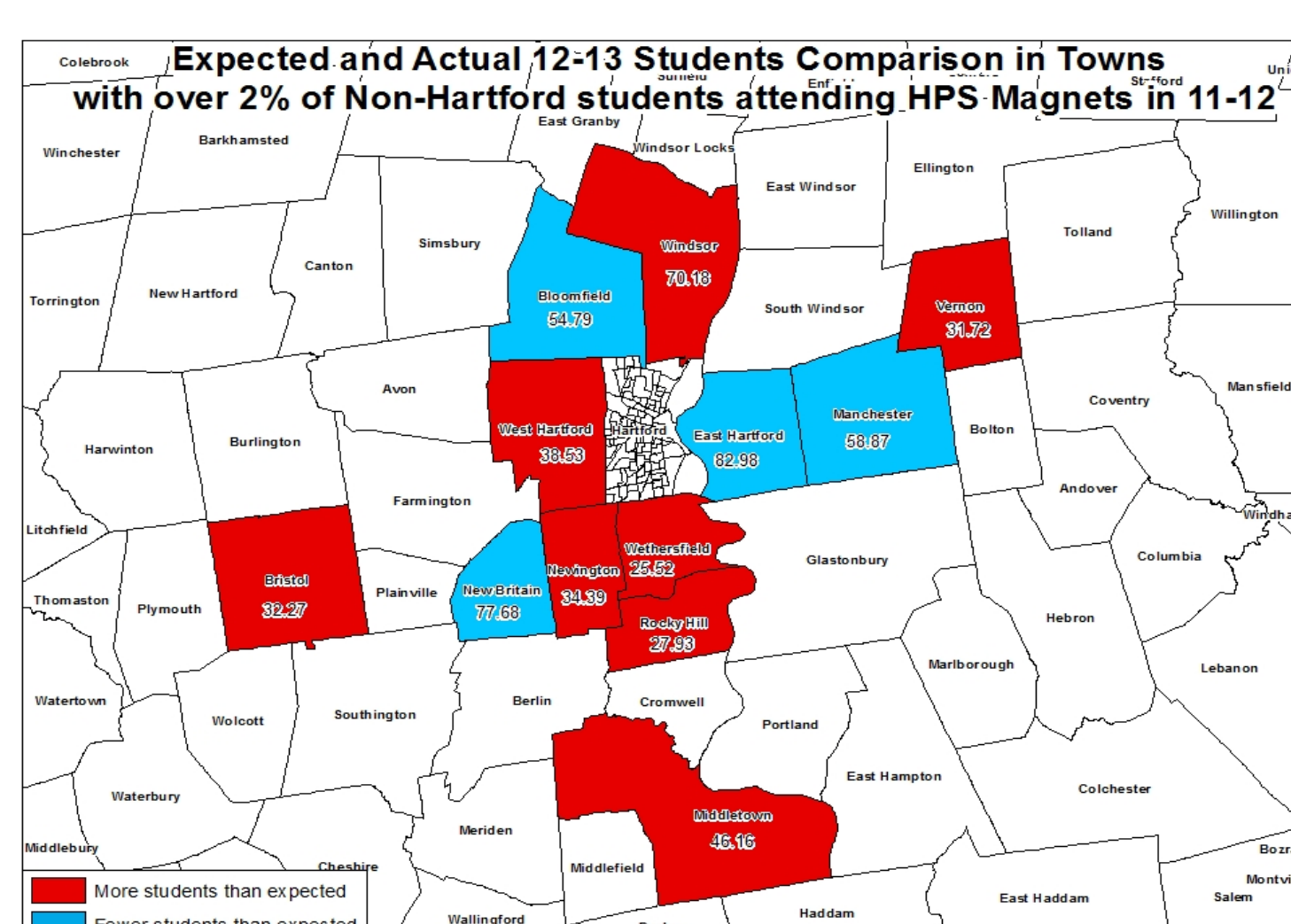


The ellipses showing the spatial spread of the student residences for all HPS magnet schools. The orientation of the ellipse is NE-SW, and there does appear to be some widening and lengthening of the ellipses from 2011-12 to 2012-13.

3. Calculating and drawing maps of actual and expected numbers of students attending HPS magnets from non-Hartford towns

Changes by Towns

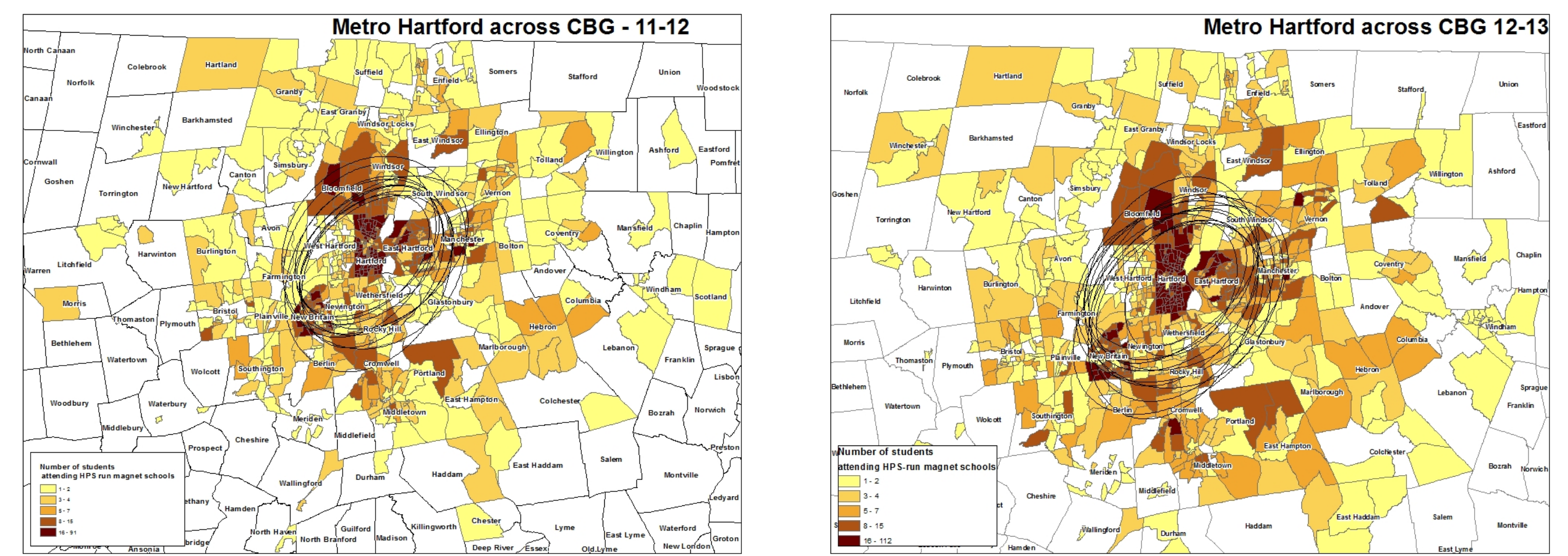
Town	Number of students attending HPS-run magnet schools in 11-12	Proportion of total students in HPS-run magnets in 11-12	Actual number of students attending HPS-run magnet schools in 12-13	More or less than expected	Percentage of Minority
New Britain	563	20.43%	606	-87.33	77.68
East Hartford	423	15.35%	440	-80.92	82.98
Manchester	245	8.89%	254	-47.72	58.87
Windsor	163	5.91%	201	0.27	70.18
Bloomfield	151	5.48%	168	-17.96	54.79
West Hartford	150	5.44%	219	34.28	38.53
Middletown	111	4.03%	174	37.30	46.16
Wethersfield	85	3.08%	115	10.32	25.52
Vernon	79	2.87%	127	29.71	31.72
Bristol	77	2.79%	106	11.17	32.27
Newington	69	2.50%	95	10.03	34.39
Rocky Hill	64	2.32%	86	7.18	27.93



There were a large relative decline in students from New Britain, East Hartford and Manchester and a large relative increase in students from West Hartford, Middletown, and Vernon. They provide evidence of a clear change in 12-13 to enroll more students from towns with a lower percentage of minorities, and to enroll relatively fewer students from towns with a higher percentage of minorities.

2. Showing distribution of students across towns and performing hotspot analysis

Spatial Distribution and Hotspots



While most Connecticut students who were attending HPS-run magnet schools came from census block groups in Hartford and nearby Hartford, signified by the deep and darker brown, there appears to be an increase in the number of census block groups farther away from Hartford, with more students, signified by darker brown-gold shading.

4. Calculating the average travel distance for students attending each HPS Magnet School

Travel Distance

SCID	School Name	Average Distance from school (miles)						Student leavers after the end of 2011-2012	Student beginners in 2012-2013
		11-12		12-13		Hartford	non-Hartford		
		Hartford	non-Hartford	Hartford	non-Hartford				
6433	Breakthrough	4.4	4.5	1.6	7.2	1.5	7.4	7.5	8.3
6454	HMM/HTCA	4.5	4.7	1.1	7.6	1.2	7.7	7.2	7.9
6435	Breakthrough II		5.0			2.5	9.4		9.5
6409	Hooker	4.6	5.1	0.8	8.6	1.0	9.0	9.5	10.0
6464	Classical	5.2	5.5	1.7	8.2	1.7	7.7	8.5	8.5
6437	Montessori at AnnieFisher	5.6	5.7	2.1	8.8	1.9	8.9	9.4	10.0
6465	Sport & Medical	5.5	5.8	2.0	8.5	2.0	9.0	8.4	10.2
6411	Kinsella	5.5	5.9	1.3	8.8	1.4	9.3	8.8	10.2
6438	Betances STEM		6.4			1.1	10.5		10.7
6469	Capital Prep	6.8	6.6	1.8	9.8	1.5	10.0	11.0	10.4
6425	Fisher/STEM	6.5	7.2	1.3	11.7	1.5	7.9	11.0	11.7
6420	Webster	4.6	4.4	1.1	7.5	1.2	7.5	9.1	8.5
6428	Betances/Early Reading Lab		2.8			1.0	9.6		9.6

Consistent with our finding in the town analysis, new students who were attending HPS-run magnet schools in 2012-13 had higher travelling distances from school, suggesting they were coming from farther towns.

Conclusion

Our research has provided evidence that Hartford magnet schools are successful in attracting white student from farther towns in order to reduce racial segregation. By evaluating the school choice behavior of Hartford students, this project will assist our community partners in their attempt to raise awareness of the educational reform and community involvement in the Hartford Public Schools District, and to engage parents, business, community and school leaders to be a part of educational improvement in Hartford.