

North-South Districts

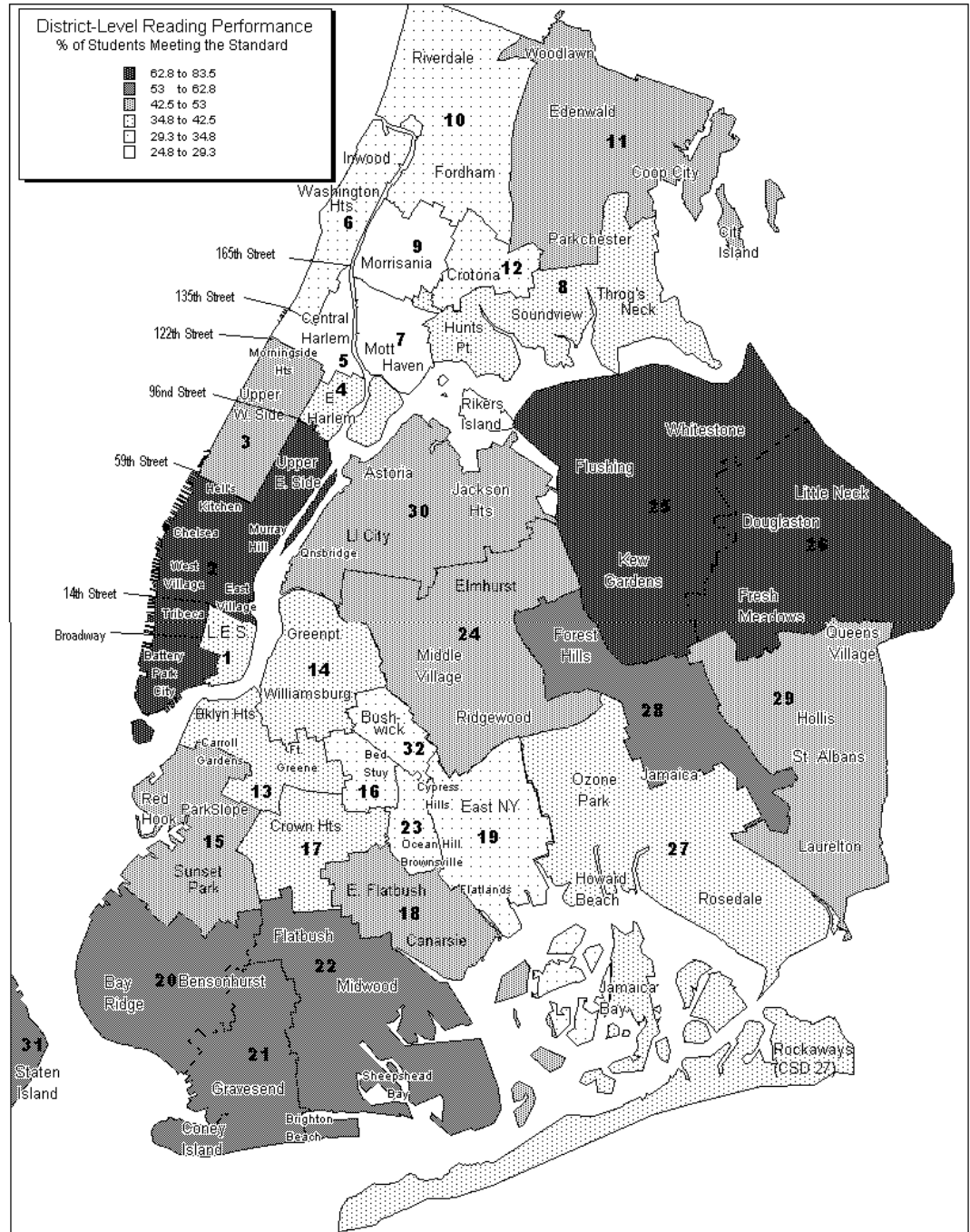
The Geographic Distribution of Educational Success and Failure in NYC

Deinya Phenix

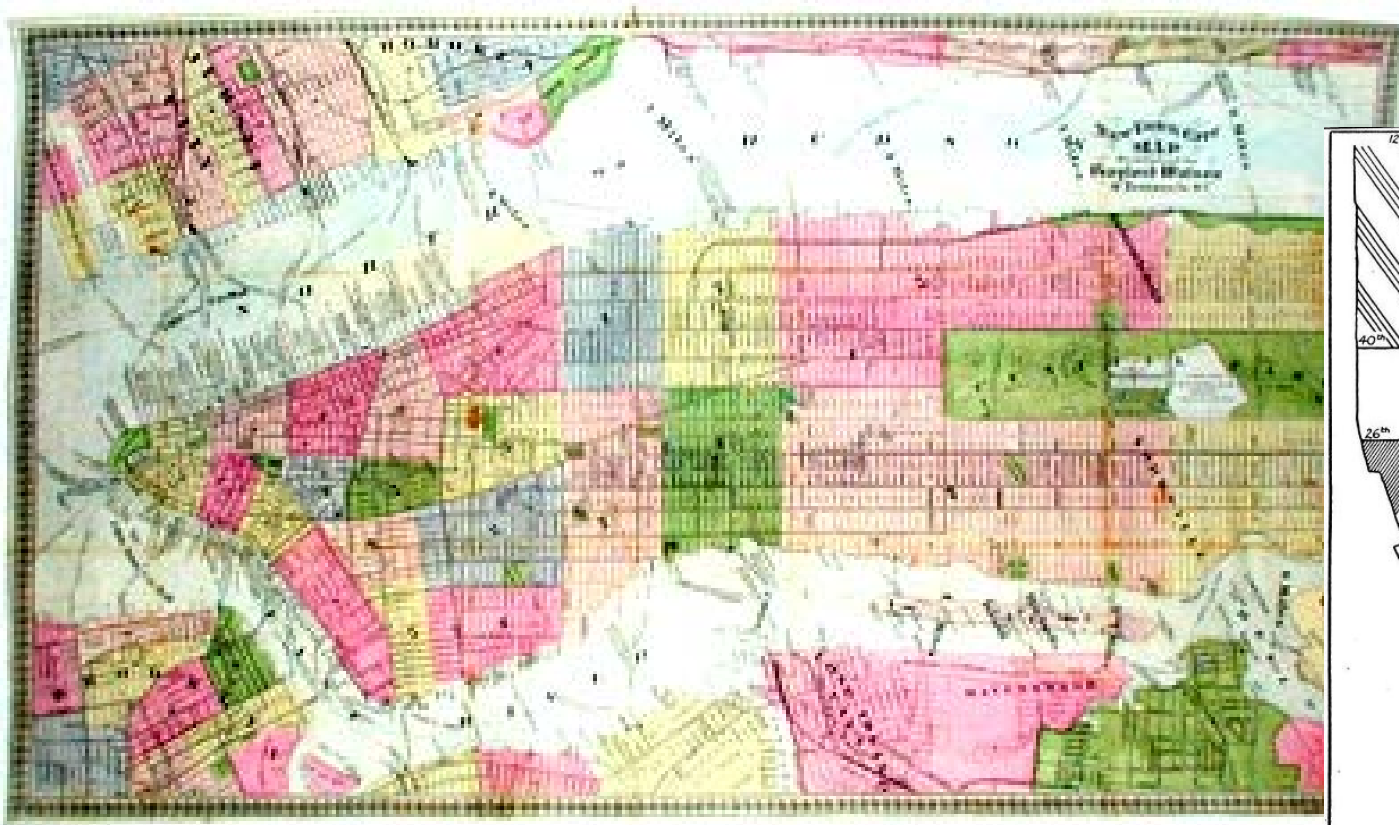
Annenberg Institute for School Reform

School Districts:

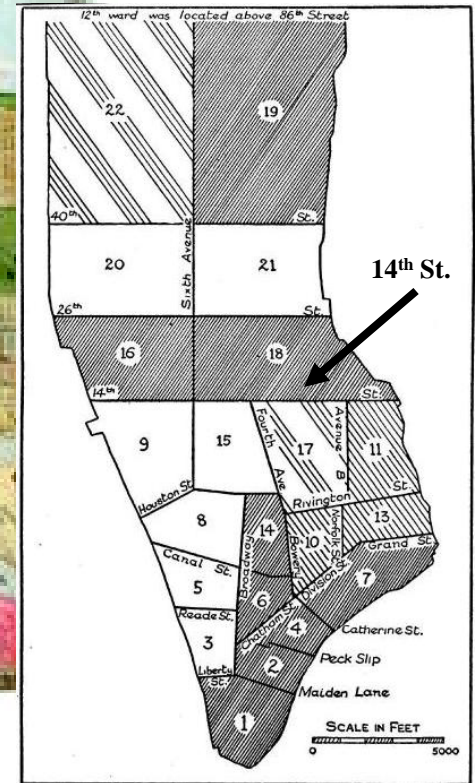
unique objects with
social meaning



Districts as Political and Social Boundaries



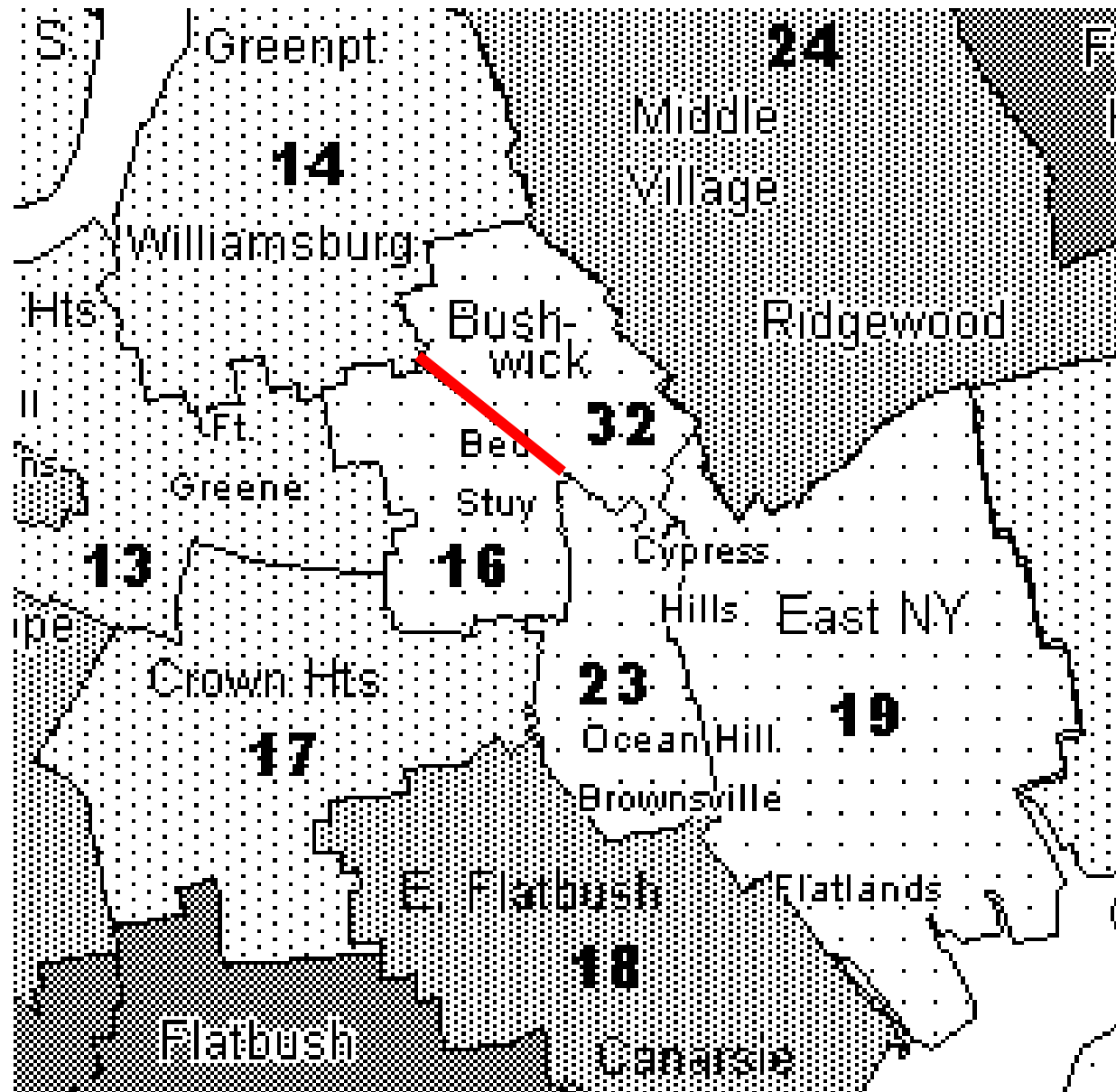
Manhattan Wards, Phelps, 1871.



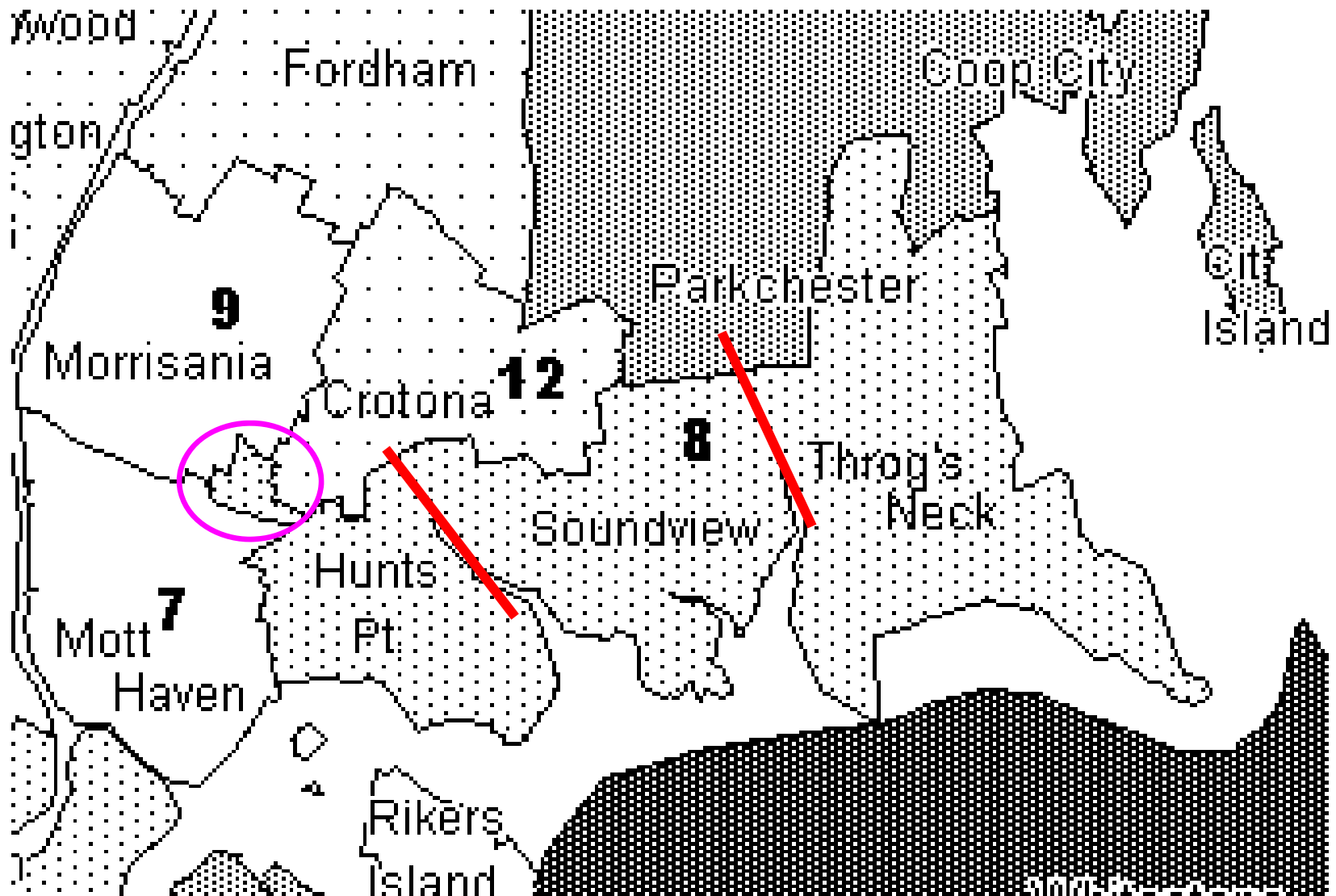
NYC Wards, 1800, demographia.com.

- NYC Community School Districts evolved from wards.
- They are oddly shaped, and politically charged, sometimes showing cumulative effects of patronage and racial segregation.

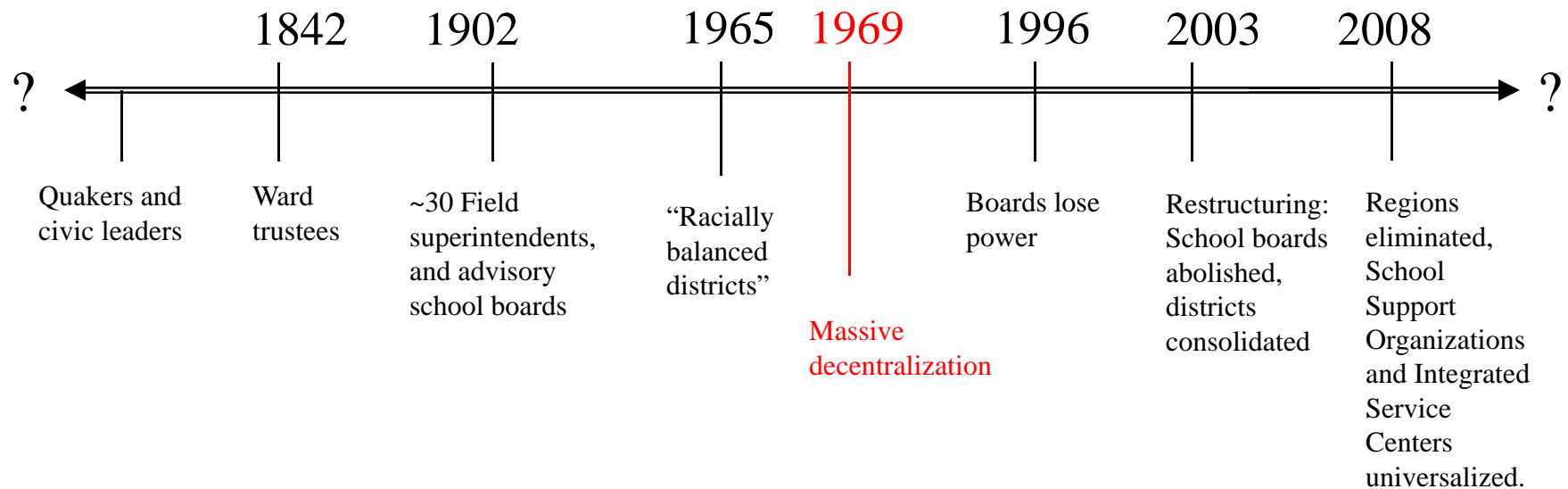
Political and Social Boundaries



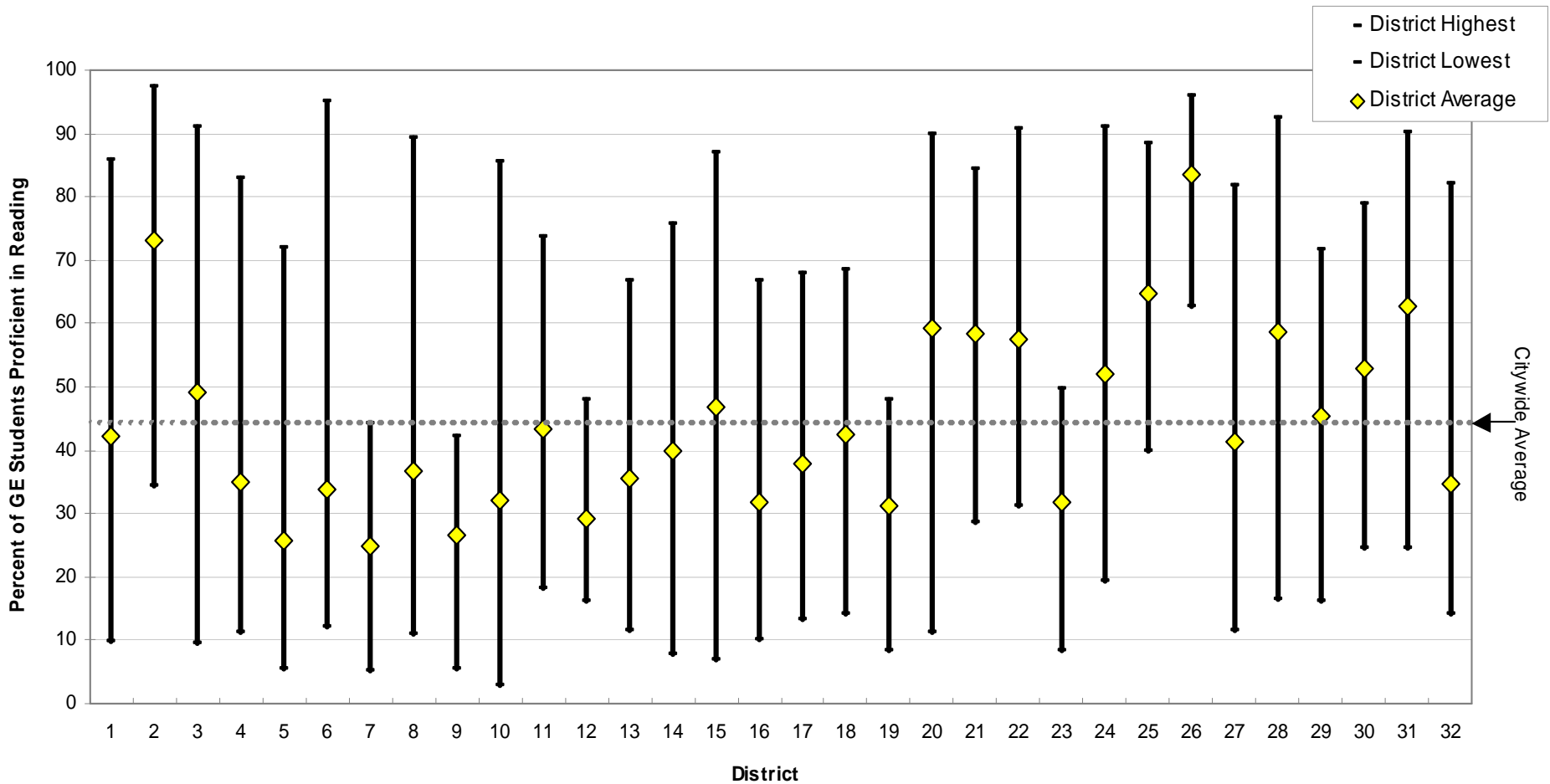
Political and Social Boundaries



History of NYC school (sub)districts



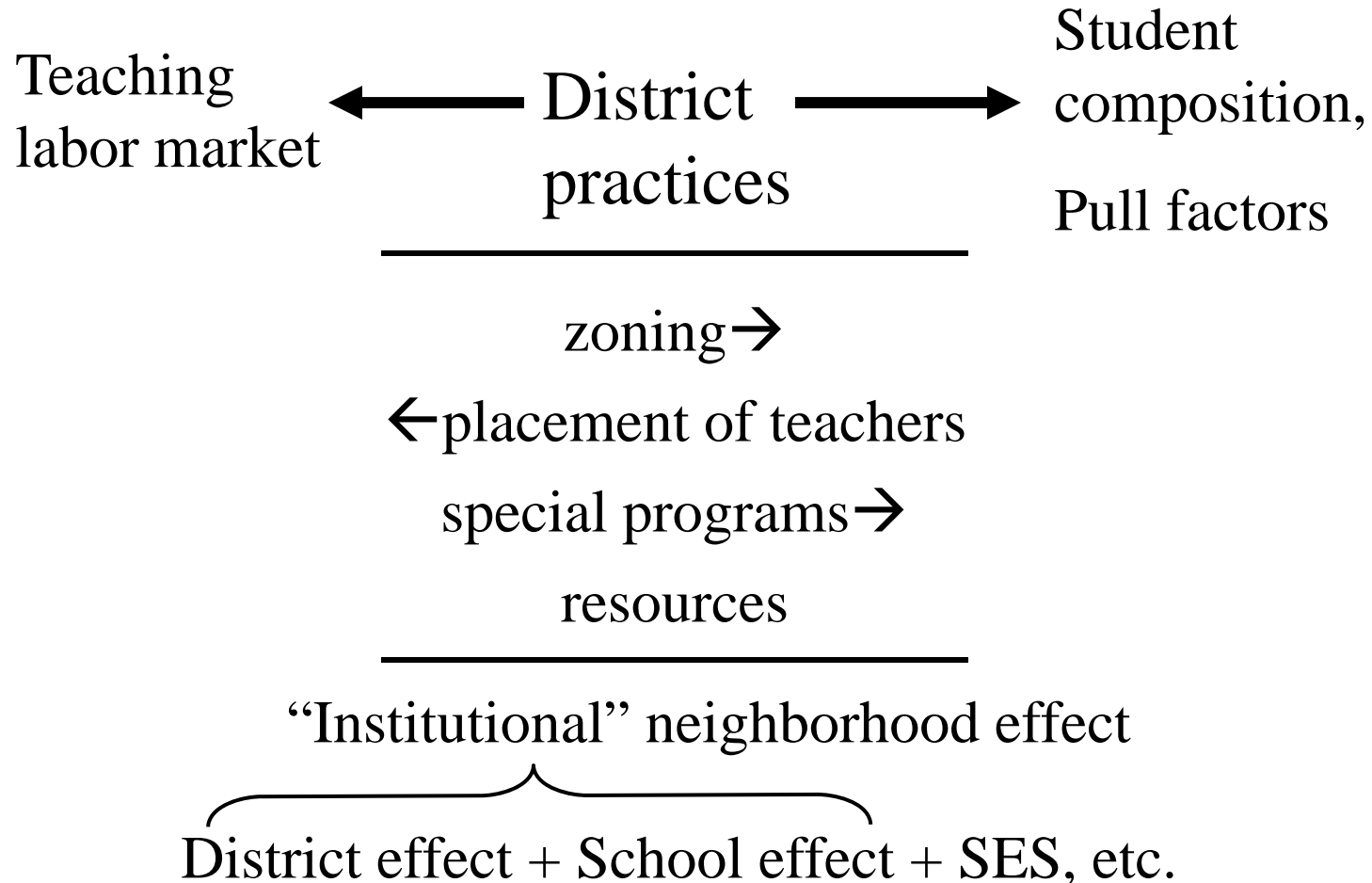
Within-District Variation



As varied as districts are, there is sometimes more variance *within* districts than between.

Are there spatial effects, particularly on with the low performing schools in average and high performing districts?

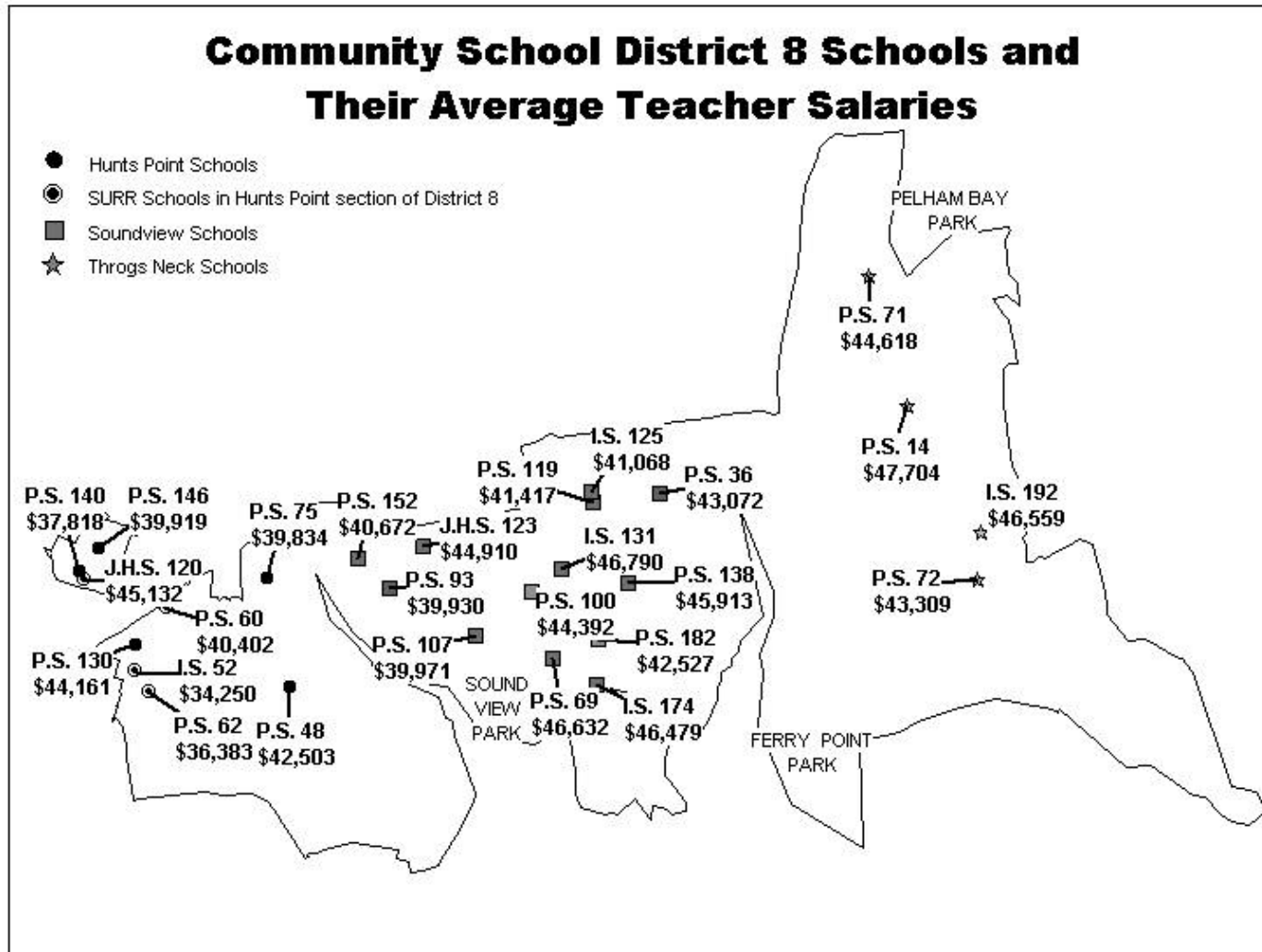
Some contributing factors...



“North-South”

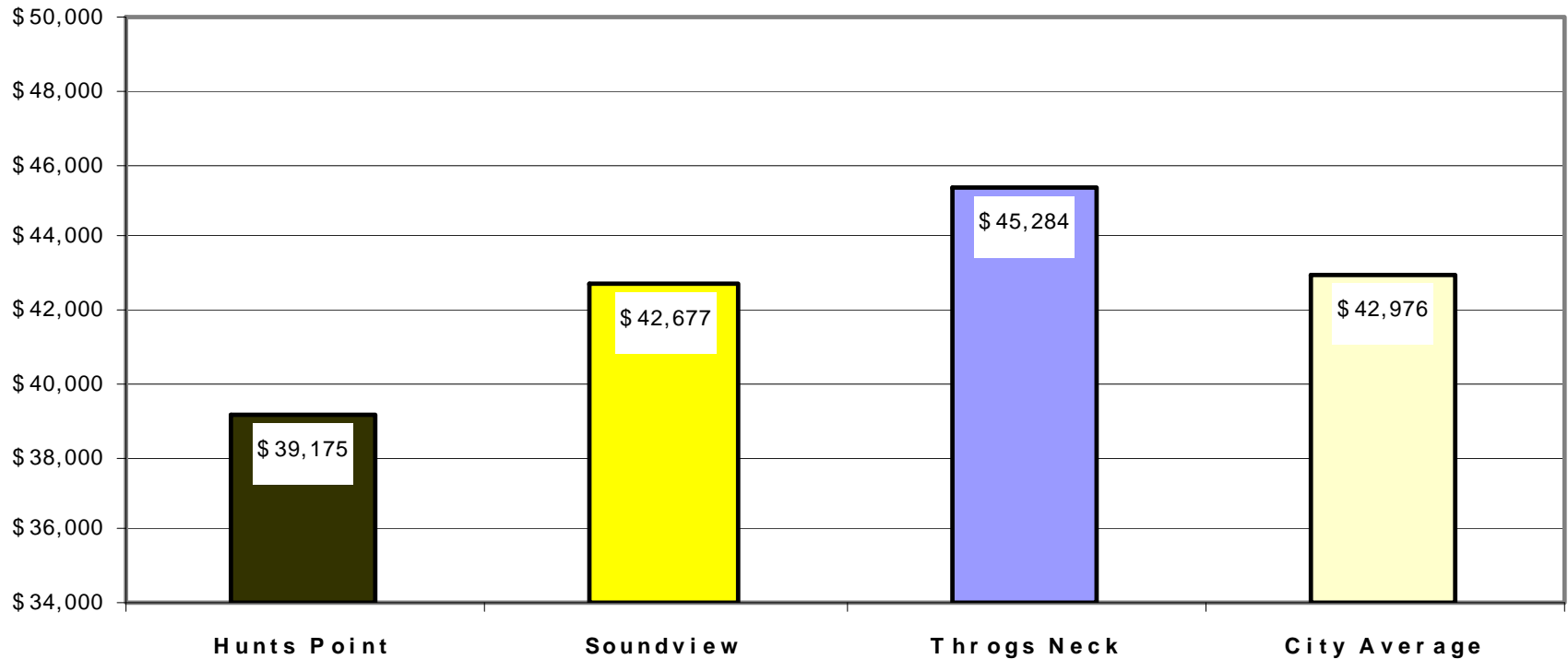
- A term picked up from organizing, politics.
- A “north south divide” is something spatial, usually the distribution of resources.
- Similar to “core and “periphery” in world systems theory.
- Related to social geographers’ “uneven development” theory.
- Also, epidemiology—more general spatial patterning and “areas of concern.”

Resource disparity



Source: NYC Board of Education, School Based Expenditure Reports, Fiscal Year 1996-97, January 98 Database ©1999 NYU Institute for Education and Social Policy--Draft

Resource disparity



Source: NYC Board of Education, *School Based Expenditure Reports, Fiscal Year 1997-98*

I. Lay out the conceptual background above

II. Test for the presence of spatial effects

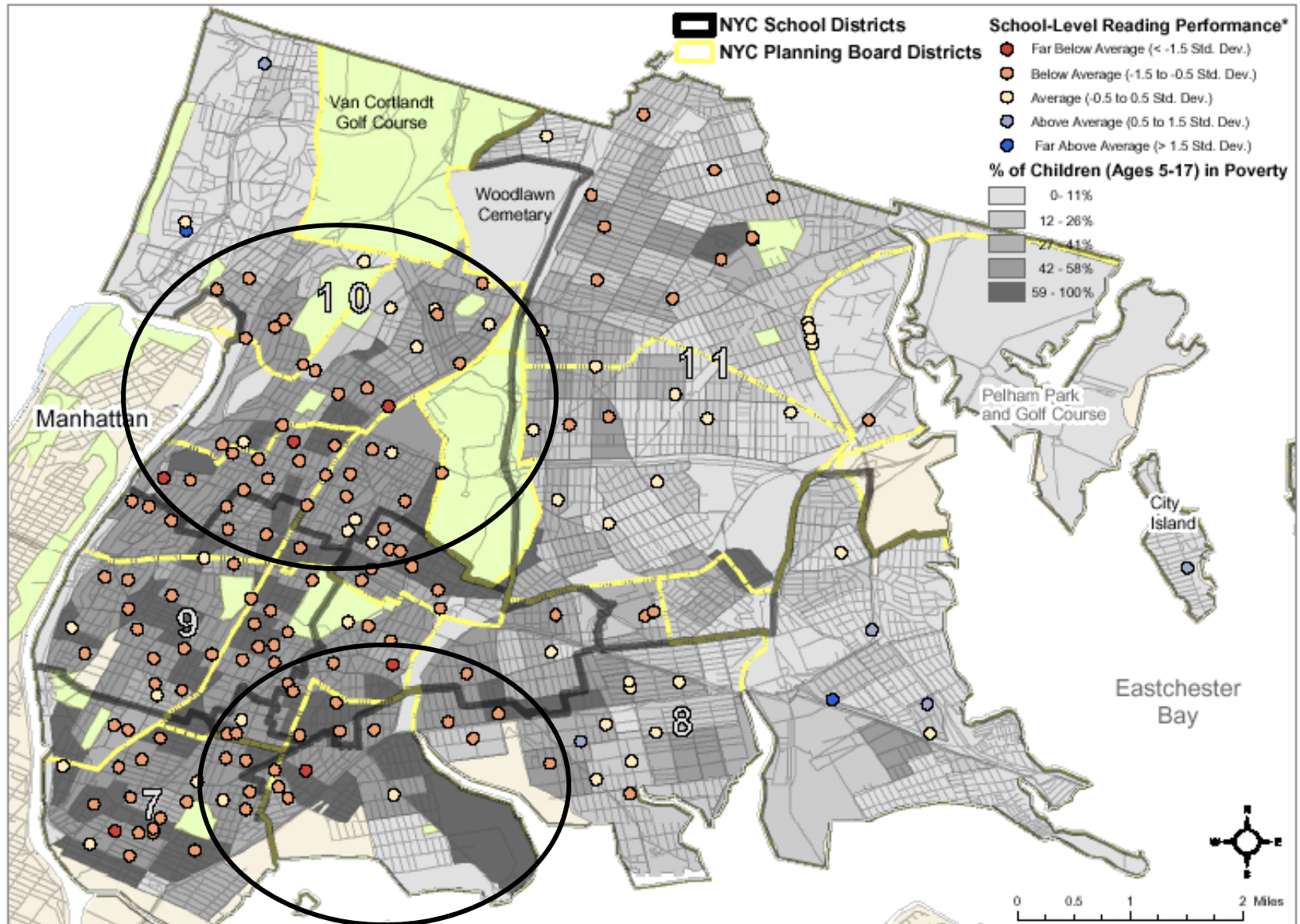
- Layered maps.
- Statistical models.
- Comparisons of schools as groups, areas.
- Focus on resources, rather than student characteristics.

III. Look for general changes over time

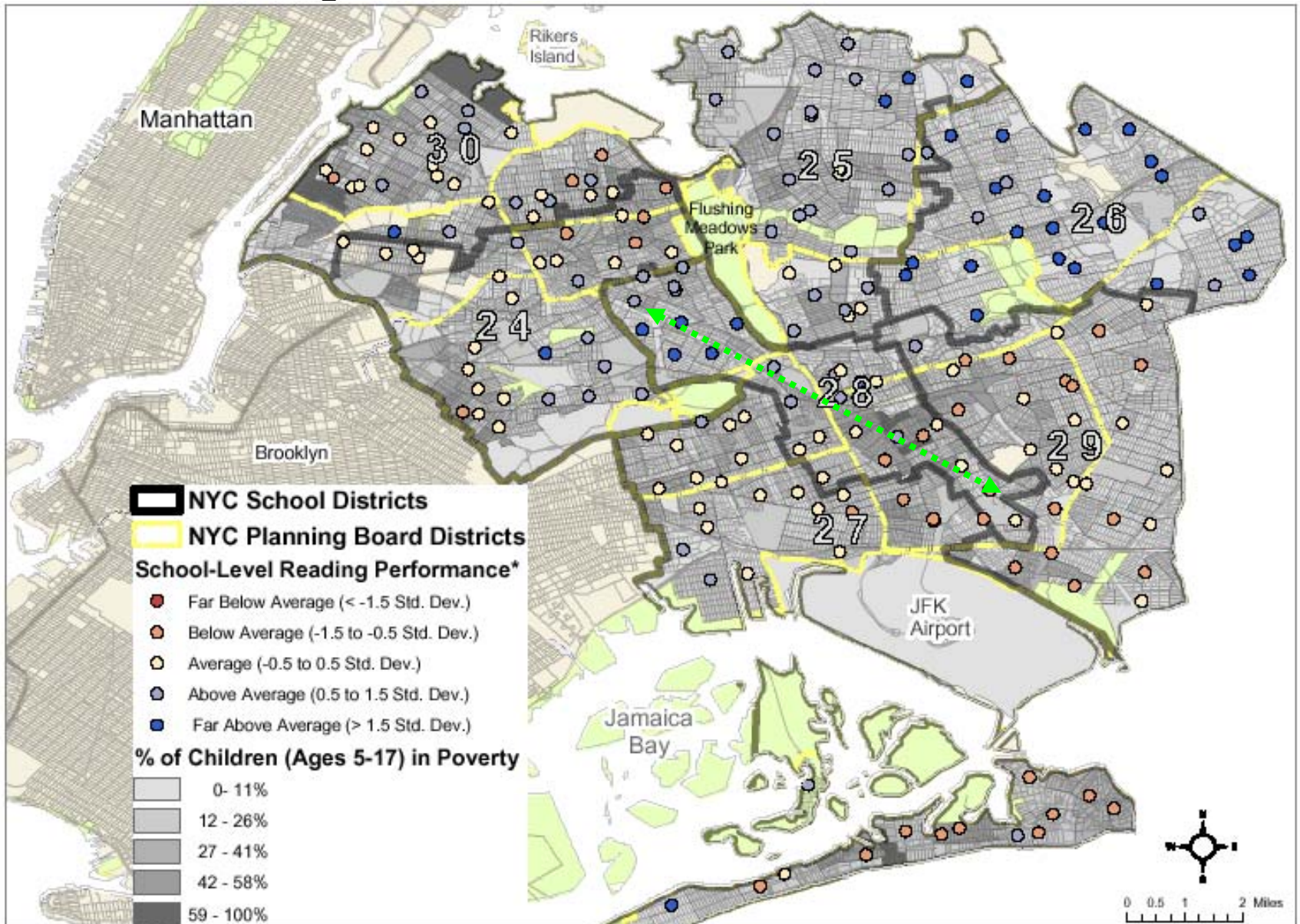
Layered maps

- District boundaries
- Census poverty data, by tract, as gray undertones
- Other political and administrative boundaries, some more meaningful than others...
- School locations, coded in colors—blue to red.

Bronx Illustration:



Queens Illustration:



Sources: NYC Dept. of Education, 2002 Annual School Reports; U.S. Census 2000.

* Performance relative to grade-specific citywide average.

Testing for the presence of spatial effects

- Statistical model and performance measure for each district
- Within-district location effect:

$$Y = Z_i + e_i$$

Where Y is a standardized composite measure of school performance (4th and 8th grade math and reading).

Z is location, i.e., x-y coordinates from GIS.

e is a random error term.

- 10 “north-south” districts with a location (Z) effect
- Return to the theory: confirms label.

Citywide Comparison of N vs S

- “Hot spot” schools chosen based on concentration/clustering of (relatively) low performing schools *within* a district.
- Compared hot spot schools to schools that weren’t concentrated, including other low performing schools

	hotspot schools	non-hotspot low performing schools	other non-hotspot schools	Total
N	152	374	407	933
Percent of all schools	16.29	40.09	43.62	100.00
total local expenditures	7,771.79	7,812.79	7,718.51	7765.13
local direct expend	6,998.31	7,011.96	6,939.61	6978.31
local classrm expend	4,008.30	4,130.86	4,080.57	4088.95
local teacher expend	3,408.88	3,518.57	3,605.11	3538.19
local inst suppt expend	538.07	491.98	528.85	515.54
average teacher salary	45,849.37	46,998.85	48,881.86	47633.68
school size	821.94	837.09	778.04	808.86
overcrowding	91.79	87.31	97.23	92.37
teachers' average days absent	8.84			8.52
fully licensed				1.21

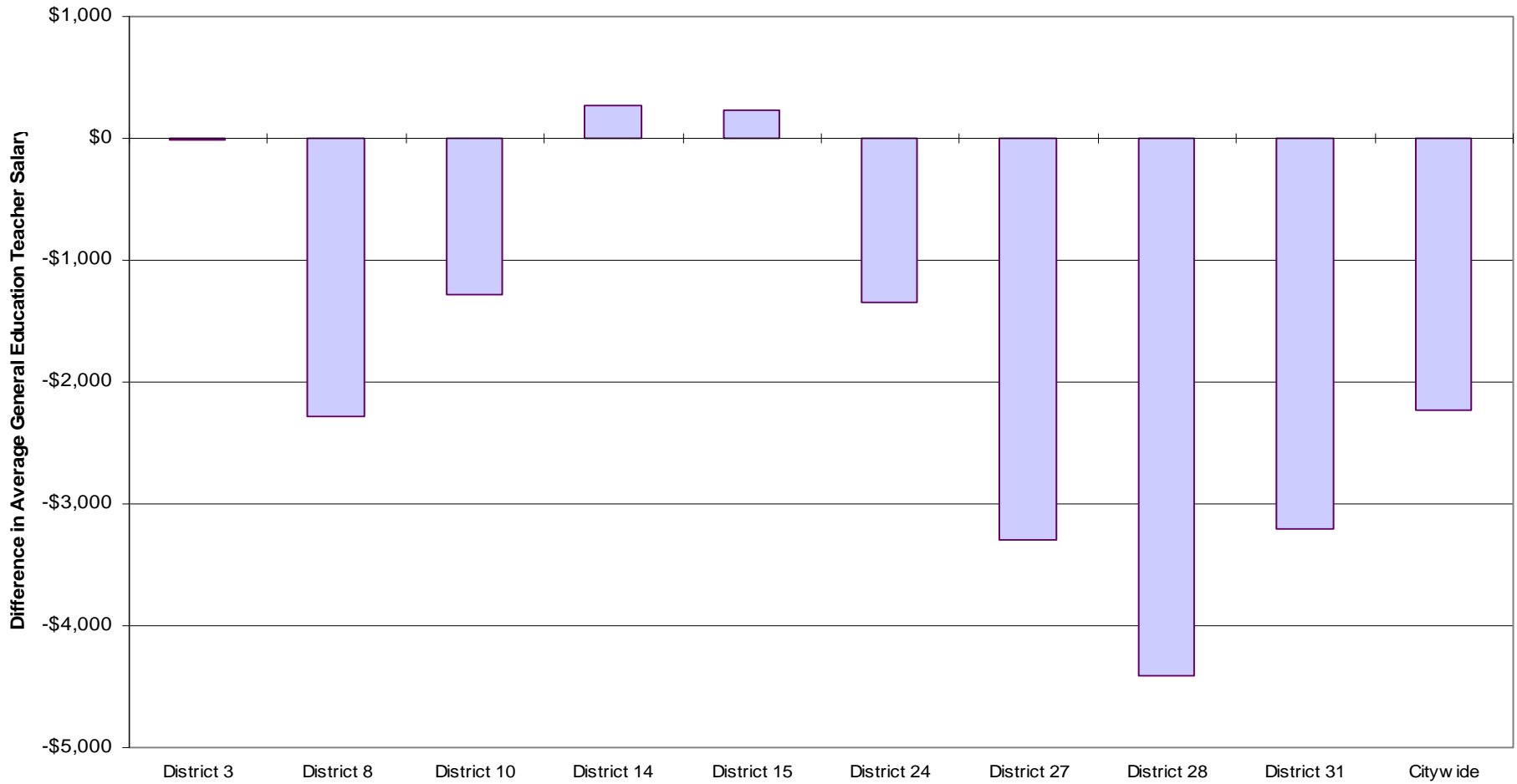
\$3,032.49

Salary gap: ~~\$1,149.12~~

Citywide Comparison of N vs S

	hotspot schools	non-hotspot low performing schools	other non-hotspot schools	Total
2 year stability	59.53	58.44	64.01	61.04
5 years experience	48.29	47.75	56.10	51.48
masters degree	69.58	65.71	79.06	72.16
free lunch eligible	85.95	85.26	56.16	72.68
recent immigrant	6.06	5.68	7.72	6.63
white	4.85	2.31	31.79	15.58
black	39.70	48.52	20.36	34.80
Hispanic	48.71	45.44	27.67	38.22
Asian	6.74	3.72	20.17	11.39
student census tract poverty	0.38	0.41	0.23	0.33
school census tract poverty	0.34	0.39	0.19	0.29

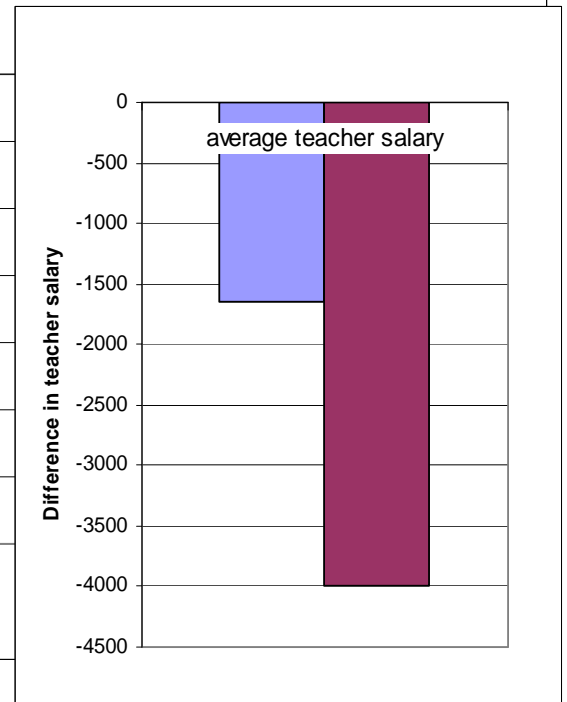
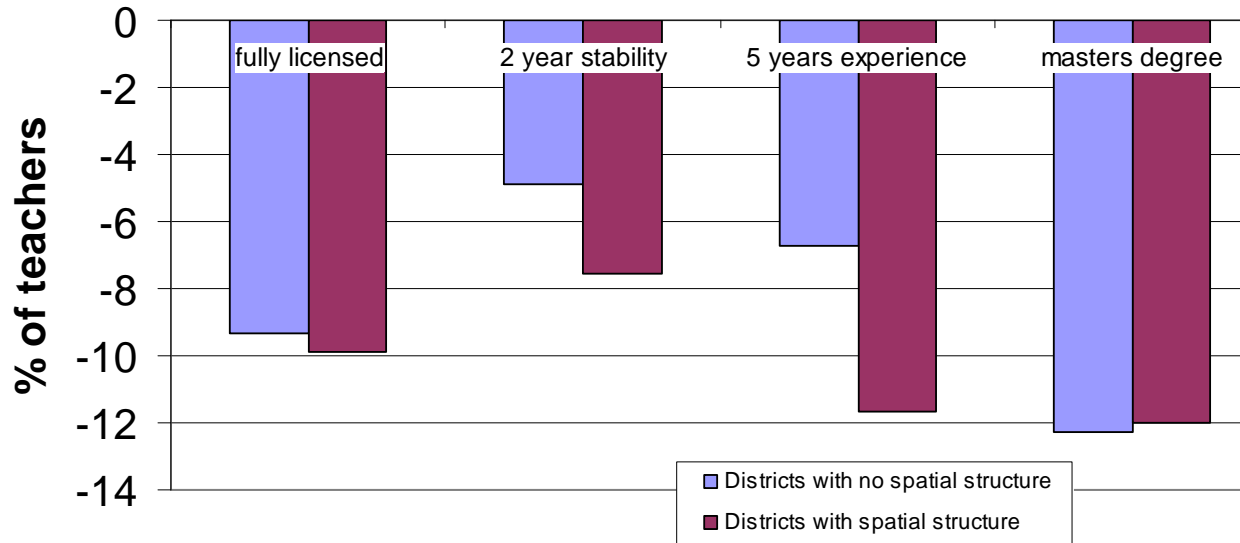
Comparison of teacher salary by district



Source: NYC Department of Education, School Based Expenditure Reports.

Teacher comparison by type of district

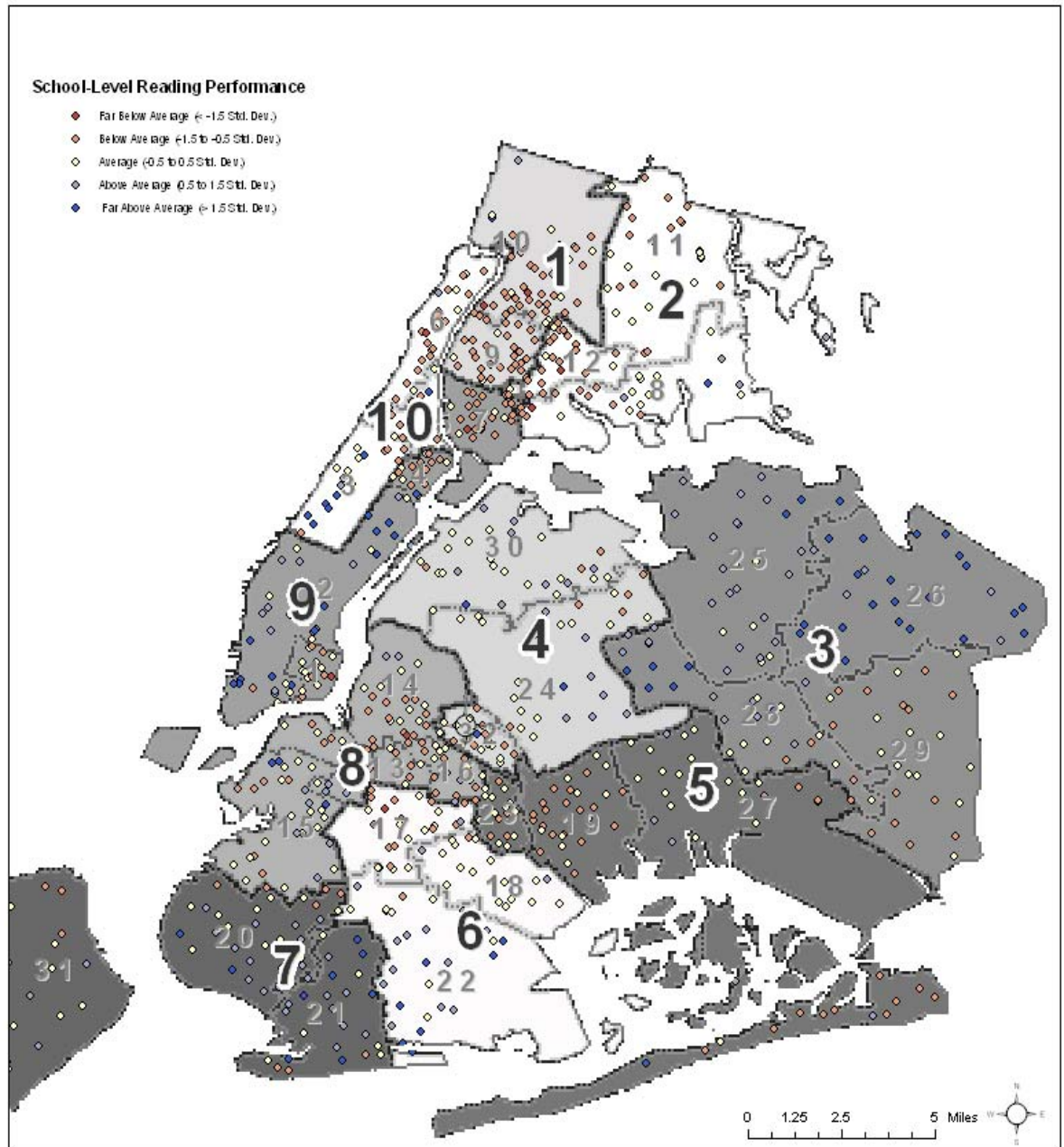
Differences between low performing and other schools in north-south and other districts



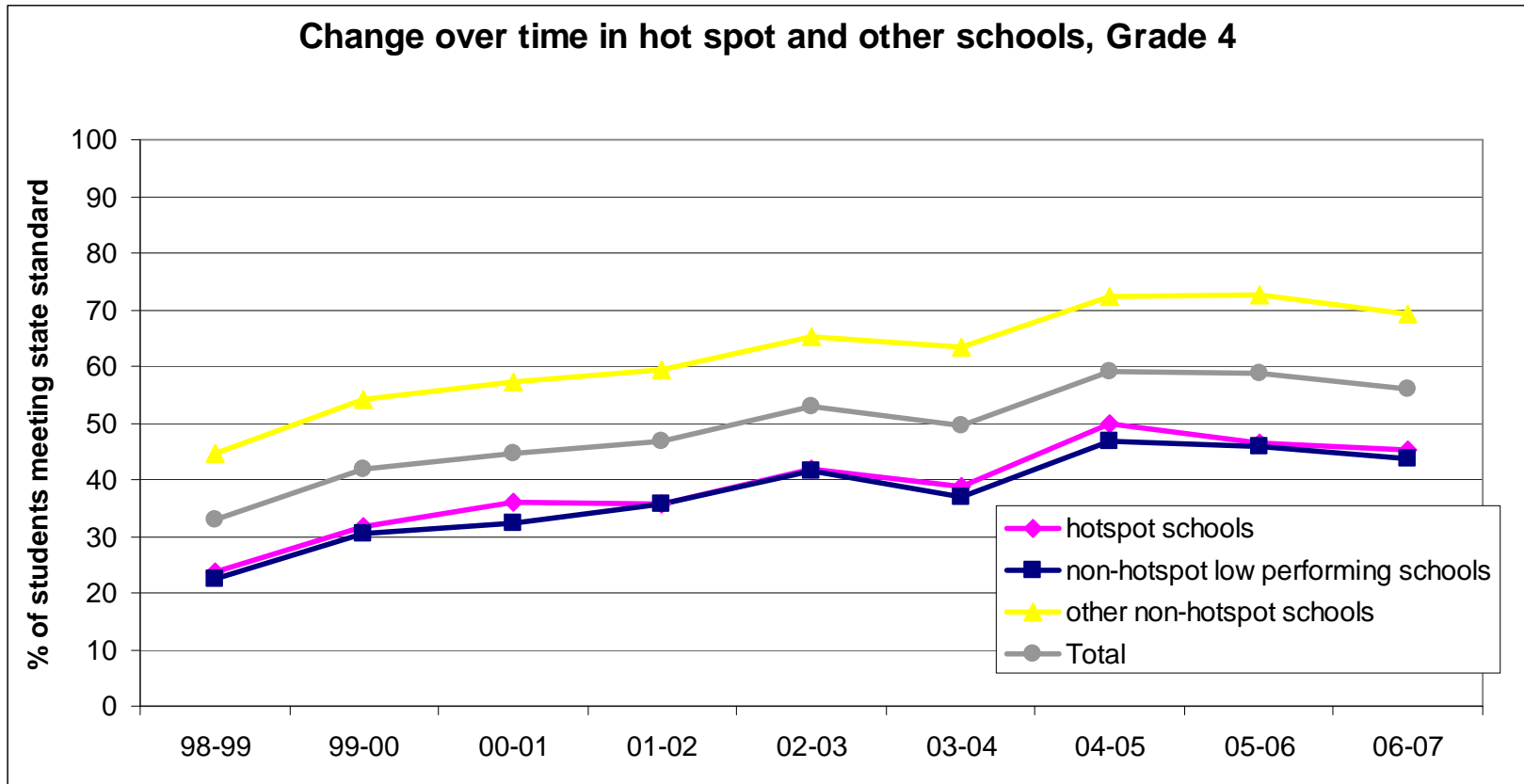
New York City Reorganized into Instructional Regions

The New System:

- Centralized operations under mayoral control
- Districts only nominally important
- Non-geographic networks based on choice of school support organization

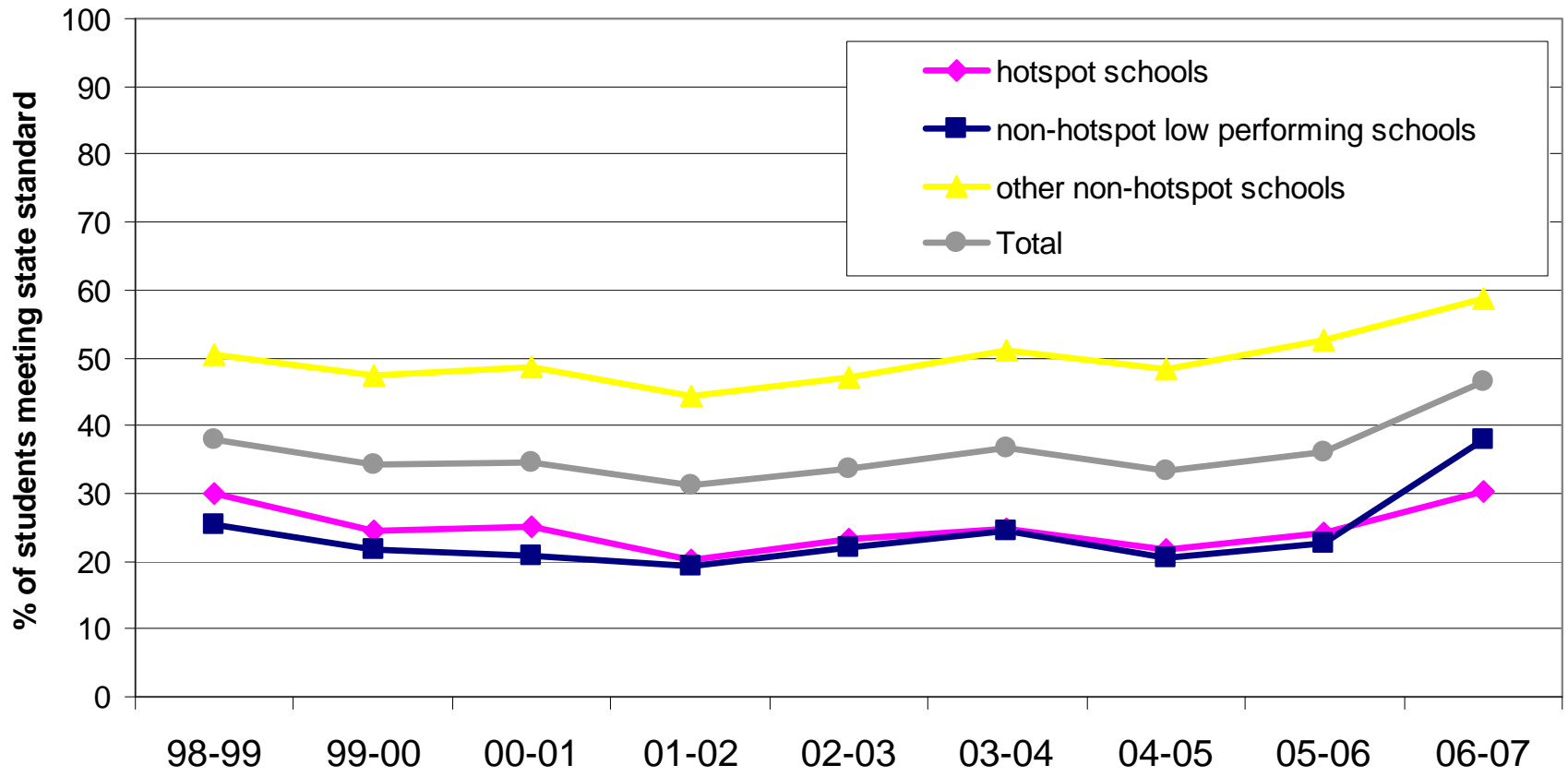


N vs S Five Years Later



N vs S Five Years Later

Change over time in hot spot and other schools, Grade 8



Hot Spots, New and Old

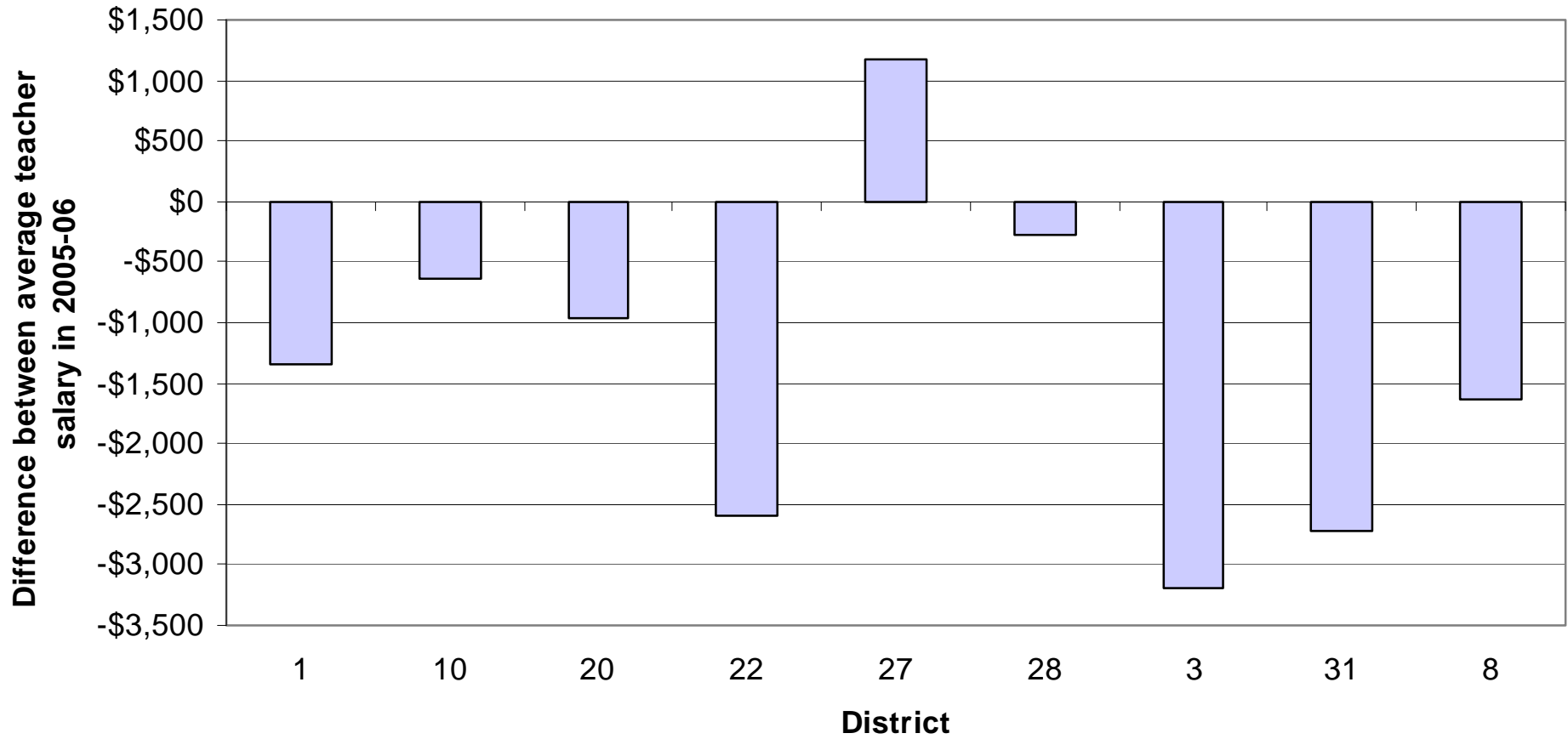
- Based on a new regression analyses using 2006-07 to see if there were still districts within which performance was spatially dependent (X and Y coordinates could be used to predict scores):
- 8 out of the 10 North-South districts still had spatial dependence. 1 additional district showed spatial dependence.

Comparisons of Current Hot Spot Schools

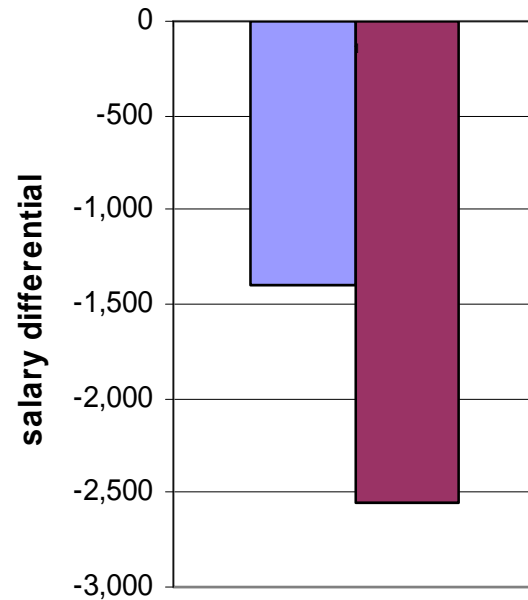
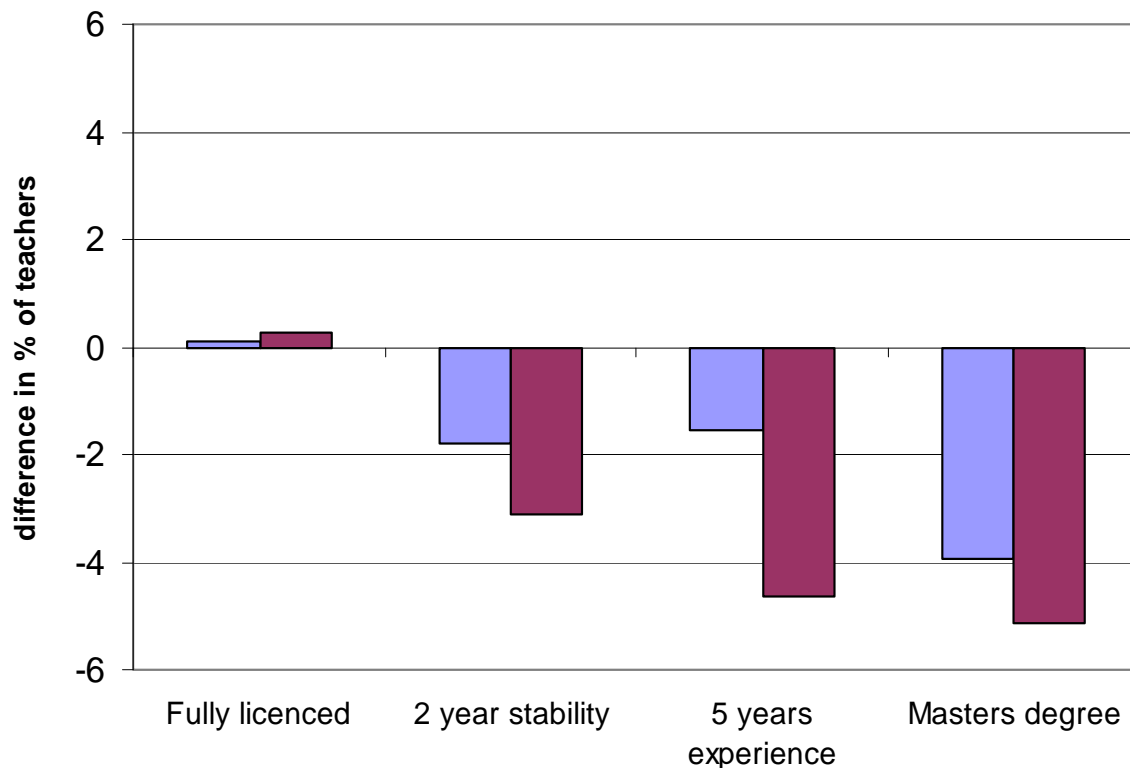
-\$2,228.95

	Hot Spot schools	Other low performing schools	Other schools	All Schools
Average Teacher Salary	54,110.87	54,783.26	56,339.82	55,439.01
Building Capacity Utilization	82.81	74.55	89.24	82.87
Average number of days Teacher absent	10.76	10.89	10.64	10.75
Percent of Teachers Fully Licensed & Permanently Assigned	99.73	99.67	99.30	99.50
Percent of teachers in place for 2 or more years	65.45	68.25	69.80	68.62
Percent of teachers with 5 or more years experience	52.91	54.78	56.62	55.42
Percent of Teachers with a Masters Degree or Higher	83.64	83.22	87.53	85.39

Comparison of Teacher Salary by District



Teacher comparison by type of district



Legend: ■ Districts with no spatial structure ■ Districts with spatial structure

Summary and Preliminary Conclusions



- Given the restructuring of districts and other interventions under Children First, how much spatial dependence do we expect to disappear?
- Hot spots, and the resource disparity that comes with them, are still a problem.
- The schools identified in 2002 as "hot spot" schools continued to improve through 2006-07, though their improvement was modest.
- Current hot spot schools still lag behind their non hotspot counterparts in resources.