APPENDIX D:

Complete Population and Enrollment Forecast Study

UNDERSTANDING THE FUTURE OF STUDENT ENROLLMENT IN THE DISTRICT

PREMISES

The following premises and assumptions frame the data that was collected, methods of analyses and questions explored in this chapter:

- Both charter schools and DCPS are best located in the areas where there is an existing or forecasted high concentration of children. Based on this premise, this report analyzes school-age demographics geographically to understand their potential impact on school facilities.
- The forecasted enrollment is assumed at today's share of the total school-aged population.
- The Master Facilities Plan analyzes whether sufficient capacity in high quality facilities exists for all children, whether in DCPS or charter schools. Therefore, the total capacity of DCPS and charter schools combined is compared to the total number of school-aged children expected in future years. This analysis does not forecast the future enrollment share between DCPS and charters.
- The Master Plan's first priority is to address current school capacity. The second and parallel priority is to consider near-term anticipated changes in demand. In this analysis, these shifts respond to demographic patterns that are forecast through the next five years (to 2017). The third priority is to study potential longer term demographic patterns, which, by definition, become more speculative as they shift from historically anchored characteristics.
- Finally, while the demand for school facilities relates to parental decisions about educational experiences and services, this Master Facilities Plan does not address such school choices.

PURPOSE

This part of the Master Facilities Plan further establishes a baseline of neighborhood cluster data points and outlines future demand scenarios for school facilities. This chapter on Population and Enrollment Forecasts answers the following questions:

- What are the key demographic changes that could influence school-aged population in the future?
- How many school-aged children are forecasted to live in the District in the next five years? The next 10 years?
- In what neighborhood clusters is the population of school-aged children expected to change in five and 10 years?
- How does the existing capacity at DCPS and charter schools relate to the forecasted school-aged population?

LIMITS OF THE ANALYSIS

NEIGHBORHOOD CLUSTERS VERSUS ATTENDANCE AREAS

For DCPS and more so for charters, the areas from which schools draw enrollment do not conform with the defined neighborhood clusters. For DCPS, neighborhood clusters do not always align with attendance boundaries. Neighborhood clusters tend to be larger than elementary school attendance boundaries and, therefore, often represent multiple elementary schools. In other cases, multiple neighborhood clusters may fit into larger attendance areas like those for the high schools.

Additionally, the DCPS out-of-boundary enrollment policy means that several schools have considerable enrollment from students who do not live within the attendance boundary. Public charter schools are not defined as neighborhood schools and, therefore, accept students from all over the District. Consequently, this study relies on the neighborhood cluster with the following caveats:

- Neighborhood clusters as illustrated in the maps provide general areas of population growth or decline, independent of attendance areas.
- Population maps should not be read to identify specific clusters where school facilities should be expanded or reduced; rather, the cluster-based maps simply serve as indicator of where school-aged children currently live or may live in the future.

The reality of overlapping school boundaries between defined neighborhood clusters means that the actual response to school-aged population change needs to be examined case-by-case.

FINDINGS

2000-2012 POPULATION CHANGES

- The overall population of the District of Columbia grew from approximately 572,500 residents in 2000 to 631,700 in 2012, representing an increase of 10.3 percent or an estimated 59,200 residents. Calculated on an annual basis, this increase equates to 4,930 new residents each year or 0.6 percent rise per annum (Figure D.1).
- Despite overall population gains, the school-aged children population (ages 5-17 years consolidated cohorts) decreased from approximately 82,500 in 2000 to 69,580 in 2012, representing a decrease of 15.7 percent or an estimated 12,920 school-aged children. This decrease equates to an average loss of just under 1,080 school-aged children each year or an average annual 1.3 percent loss (Figure D.1).
- The overall decline in school-aged children occurred primarily prior to 2010. A gain of 2.0 percent (1,375) school-aged children (ages 5-17 years) occurred between 2010 and 2012.
- The percentage of school-aged children as a component of total population decreased from 14.4 percent in 2000 to 11.0 percent in 2012.
- Of the 44 neighborhood clusters that contain school-aged children, 33 clusters (75.0 percent) posted school-aged children decreases in which Clusters 2, 18 and 21 all posted the biggest losses, amounting to more than 1,000 children total per cluster. Clusters 4, 10 and 11 had the most school-aged children gains with more than 300 additional school-aged children per cluster over the 12- year time frame.

SNAPSHOT OF NEIGHBORHOOD CLUSTER DIFFERENTIATION AND DEMOGRAPHICS

» School-aged children (5-17 yrs.): In 2012, neighborhood clusters with the most school-aged children (3,500-plus) are 2, 18, 33 and 39. Clusters with the fewest school-aged children (less than 400) are 5, 6 and 27.

» Family households are defined by one or two persons related by birth, marriage or adoption: of the estimated 257,300-plus households in the District of Columbia reported in 2010, 112,715 were family households representing 43.8 percent of total households (see Appendix C).

» Higher family concentrations (65.0 percent-plus) are in neighborhood clusters 16, 29, 33, 37, 38 and 39. Conversely, the lowest family concentrations (25.2 percent or less) are in neighborhood clusters 1, 6 and 7. District-wide, the average family size is about 3.0 persons per household (see Appendix C).

» Owner-occupied households: Of the estimated 257,300-plus households in the District of Columbia reported in 2010, 110,410 are owner-occupied, representing 42.9 percent of total households. The neighborhood clusters with the highest housing tenure are 10, 11, 13, 16 and 20. Conversely, the fewest owner-occupied households are in neighborhood clusters 28 and 36-39 (see Appendix C).

» Educational attainment for population of 18-plus years: More than 50 percent of the population in 18 clusters (1, 3-16 and 25-27) have graduated from a higher educational institution with an associate degree or higher. All other clusters generally have less than 35 percent of the population with educational attainment of an associate degree or higher (see Appendix C).

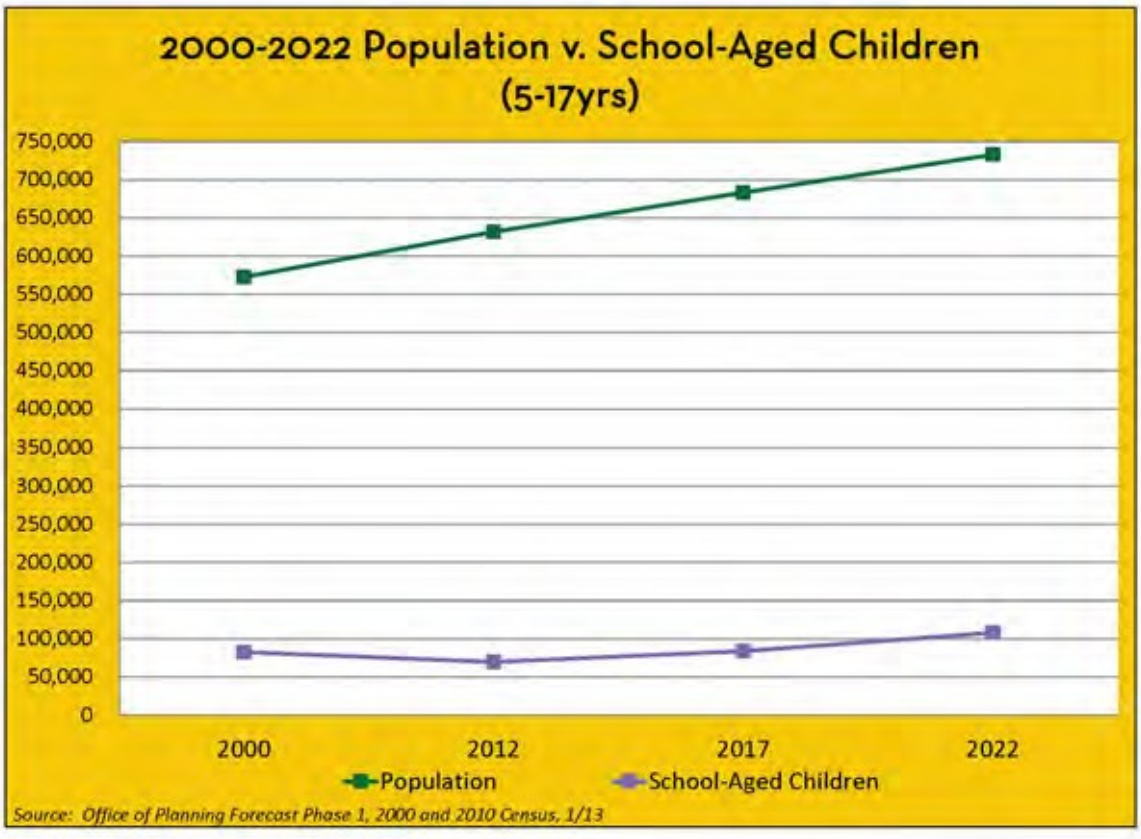


Figure D.1

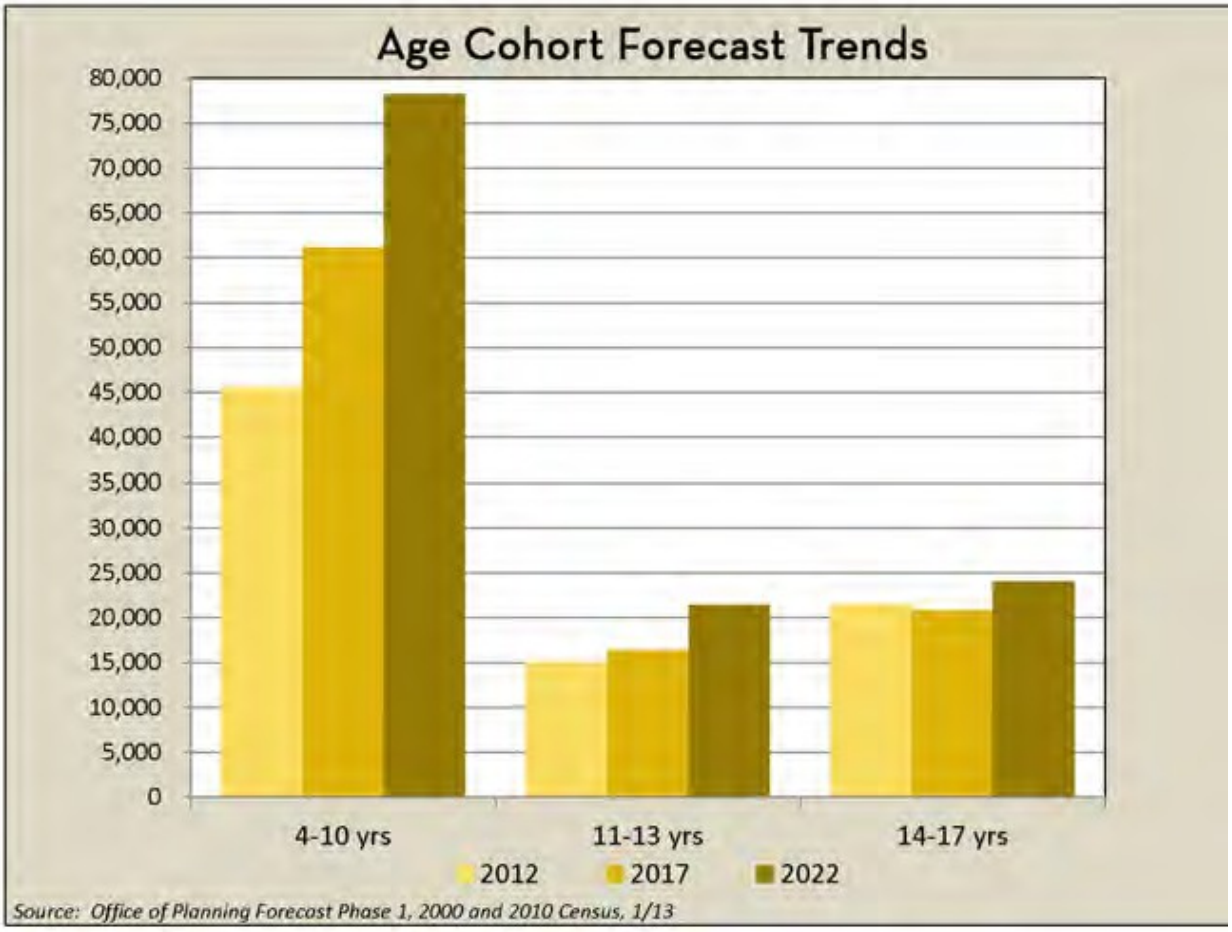

Age Cohort Forecast Trends
80,000
75,000
70,000
65,000
60,000
55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
4-10 yrs
11-13 yrs
14-17 yrs
2012
2017
2022
Source: Office of Planning Forecast Phase 1, 2000 and 2010 Census, 1/13

Figure D.2

POPULATION CHANGE BY CLUSTER

2000-2012 CHANGE IN SCHOOL-AGED CHILDREN

Popula♦on data was gathered from the Office of Planning (OP).

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

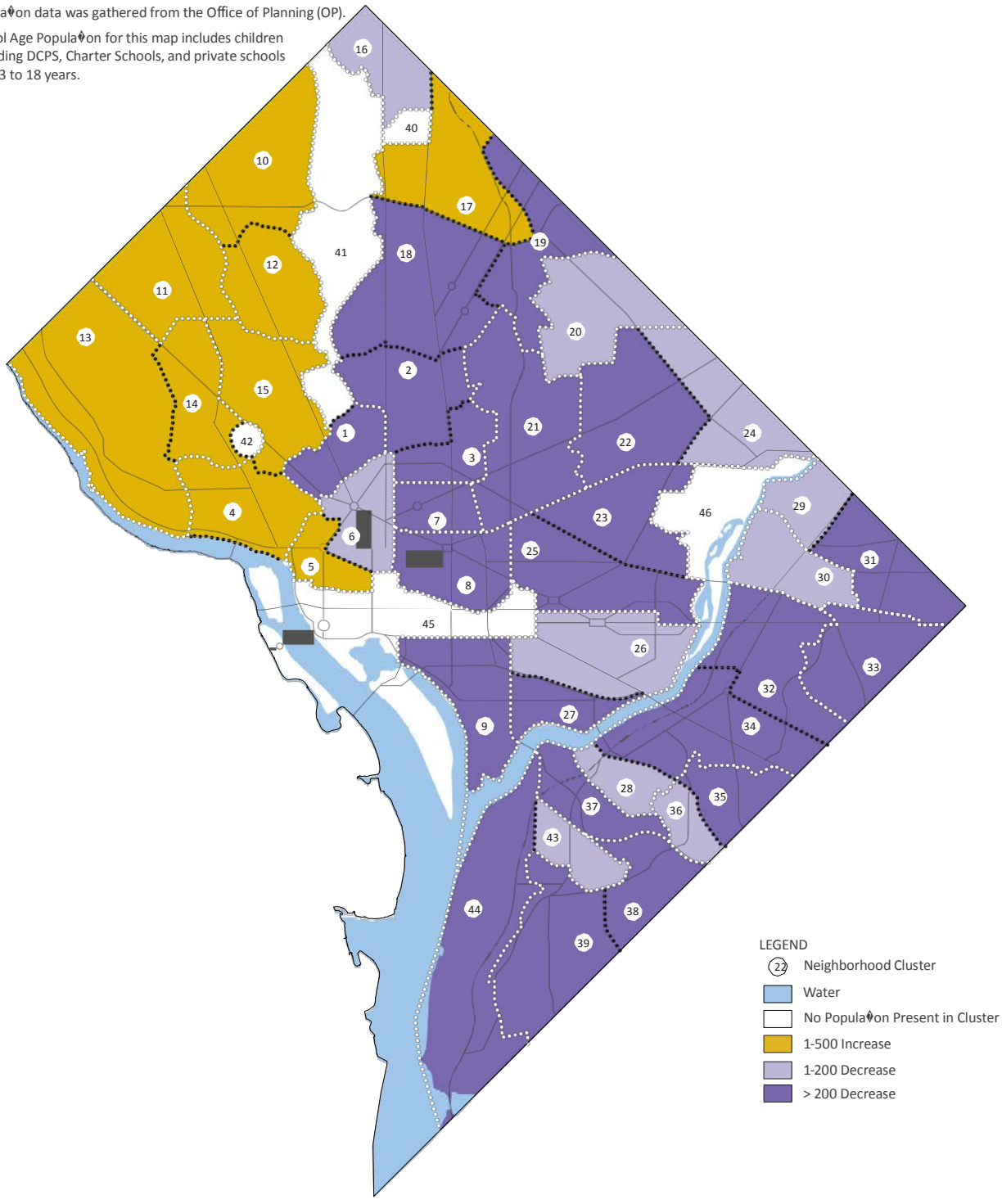


Figure D.3

POPULATION FORECAST

The District of Columbia's Office of Planning October 2012 Phase 2 population forecasts suggest that between 2012 and 2017, the overall population for the District will increase by 8.2 percent, coupled with a 20.5 percent increase in the school-aged population associated children (5-17 year old consolidated cohorts). This growth translates into an average annual increase of approximately 2,850 additional school-aged children per year (Figure D.1).

Forecast data from the DC Office of Planning suggests that between 2017 and 2022, the overall population for the District will increase by 7.3 percent, coupled with a 28.7 percent increase in the school-aged population associated children (Figures D.1 - D.2).

Figures D.6 through D.9 show how the forecasted population growth is applied across the neighborhood clusters in 2017 and 2022. Figures D.10 and D.11 show the student-aged population density per neighborhood cluster in 2012 and in 2017.

For the period of 2017 to 2022, an average of 4,810 additional school-aged children will be added per year. By 2022, the OP forecast suggests that the percentage of school-aged children as a component of total population will be 14.7 percent or approximately back to the level that prevailed in 2000.

FORECAST RANGES

The following tables (Figures D.4 - D.5) shows two population forecasts provided by Metropolitan Washington Council of Governments (COG) and the DC Office of Planning. OP's forecast data set is based on the 2012 Census estimates (recently released) as the starting point where as the COG forecast is based on the 2011 Census data set and 2015 and 2020 COG estimates. Both are suitable forecasts to predict the District population in the years to come. They are different because of different assumptions and methodologies, and, therefore, are two forecasts for two possible futures.

The OP population forecast is being used for the purposes of this Master Facilities Plan. Understanding that In applying OP's population forecasts to school facility planning, there are a number of caveats to consider, ranging from the prospects for and capacity to absorb in-migration, to probabilities of family households starting out and staying in a given location, and to the influence of school proximity and quality regarding household location choice.

Against a backdrop of uncertain national and regional economic conditions, combined with an array of location options for families in other jurisdictions close to the District of Columbia, the facility planning process must balance school investment commitments in such a manner that resources are channeled to support known needs as well as possible new demands. A key test regarding possible school facility investment, be it to expand actual capacity or maintain or upgrade existing capacity, is to seek data measures underscoring needs regardless of the actual level of realized growth. Such a hypothetical adjustment to the suggested population forecasts (at 50 percent of forecast population change estimates) is included in the Unmet Need section of this report.

These projections do not account for several significant redevelopment projects in DC such as the St. Elizabeths East Campus and Walter Reed Army Medical Center. These projects are still in the planning stages and it is too early to predict the impact they may have on population changes.

Extrapolated COG Population Forecast

	2,012			2,017			2,022		
	3-11	12-14	15-18	3-11	12-14	15-18	3-11	12-14	15-18
1	572	104	204	687	53	90	697	66	50
2	3,522	798	1,451	4,288	714	897	4,988	786	844
3	350	151	267	476	115	432	499	162	301
4	614	166	424	867	222	655	799	276	706
5	173	17	122	440	161	155	422	942	1,715
6	248	27	199	272	16	32	296	20	23
7	1,042	207	348	1,410	157	189	1,822	225	142
8	794	148	385	1,275	121	145	1,817	212	151
9	715	192	372	875	133	181	963	185	152
10	1,844	457	581	1,675	599	529	1,520	498	633
11	1,403	320	455	1,314	411	503	1,245	399	603
12	514	115	255	563	89	119	537	121	92
13	1,375	648	845	1,225	807	1,979	1,050	302	1,553
14	743	148	364	778	144	271	754	174	255
15	779	139	386	871	113	121	825	153	99
16	497	106	128	501	164	134	522	134	201
17	2,020	543	820	2,386	596	710	2,578	711	777
18	3,815	1,091	1,728	4,558	992	1,352	5,168	1,298	1,268
19	1,158	322	541	1,448	342	387	1,678	455	397
20	679	282	534	679	237	556	688	229	430
21	1,593	492	863	1,894	393	654	2,248	535	495
22	1,201	370	670	1,365	383	487	1,460	440	505
23	1,518	511	943	1,572	493	696	1,768	420	653
24	566	171	279	670	171	300	754	245	287
25	1,893	281	753	2,461	341	362	2,769	511	371
26	1,853	372	684	2,451	395	470	3,028	476	468
27	36	5	15	104	4	4	227	5	2
28	852	272	292	912	194	279	868	246	242
29	389	163	239	460	136	139	569	172	145
30	938	280	410	1,099	315	344	1,099	315	318
31	1,868	610	939	2,010	535	779	2,110	714	746
32	1,502	506	874	1,622	502	581	1,719	521	664
33	2,292	741	1,191	2,583	692	888	2,775	842	842
34	1,559	540	797	1,619	474	717	1,669	546	566
35	534	191	254	534	164	189	534	164	166
36	1,212	353	522	1,321	347	446	1,494	384	414
37	1,356	379	627	1,277	405	429	1,301	357	394
38	2,119	596	950	2,207	517	620	2,154	645	586
39	3,956	1,129	1,863	4,330	1,065	1,268	4,289	1,269	1,267
40	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0
44	615	128	199	647	94	167	623	90	114
45	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0
	50,709	14,074	23,776	57,725	13,804	19,256	62,330	16,244	19,637

*The Po
Plan

Figure D.4

	Population Forecast by DC Office of Planning*								
	2,012			2,017			2,022		
	3-11	12-14	15-18	3-11	12-14	15-18	3-11	12-14	15-18
1	734	141	182	1,625	190	204	2,465	426	326
2	3,760	933	1,275	6,014	1,122	1,333	7,868	1,593	1,718
3	472	125	175	976	124	168	1,526	300	207
4	959	195	241	1,382	272	291	1,931	494	425
5	177	15	43	517	46	30	1,226	120	66
6	373	62	102	976	88	88	1,727	271	157
7	955	237	320	1,684	284	329	2,334	493	407
8	1,067	262	402	1,682	331	404	2,264	541	524
9	753	234	366	964	216	323	1,035	357	356
10	1,808	507	588	1,474	642	716	1,120	538	849
11	1,230	319	331	1,421	405	456	1,645	415	606
12	655	171	215	825	222	246	1,189	250	305
13	1,402	422	472	1,285	524	605	1,384	413	660
14	803	170	264	1,474	252	272	2,399	350	350
15	789	205	233	1,162	249	280	1,723	341	374
16	410	101	143	318	142	157	228	102	205
17	2,094	573	832	2,907	649	795	3,469	804	940
18	3,727	1,084	1,593	5,512	1,084	1,505	6,837	1,483	1,605
19	941	290	414	1,455	319	395	2,184	388	436
20	928	275	447	1,084	272	366	1,145	388	404
21	1,672	507	741	2,455	538	755	3,246	803	864
22	1,209	411	671	1,624	373	529	2,051	464	541
23	1,525	498	806	1,884	498	663	2,305	495	702
24	536	166	260	708	186	260	879	244	302
25	2,139	521	764	3,689	678	752	5,303	1,099	1,048
26	2,013	410	507	3,011	573	589	3,578	1,032	883
27	118	33	48	303	69	71	427	123	175
28	838	280	302	979	252	379	1,113	296	361
29	334	133	214	418	106	171	582	107	138
30	958	281	400	1,089	295	405	1,235	381	450
31	1,561	582	947	1,851	469	731	2,236	565	676
32	1,398	497	784	1,519	478	613	1,715	443	661
33	2,401	815	1,224	2,641	743	1,092	2,896	837	1,052
34	1,504	560	790	1,815	485	730	2,087	557	646
35	496	187	223	595	156	225	649	196	228
36	1,154	372	519	1,232	381	515	1,354	406	489
37	1,492	464	709	1,857	562	662	2,427	560	746
38	2,042	613	913	2,331	623	821	2,501	746	893
39	4,199	1,303	1,911	5,106	1,323	1,702	5,721	1,573	1,942
40	0	0	0	0	0	0	50	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	4	1	2	12	5	10	0	22	23
44	708	118	120	877	181	189	607	386	325
45	1	2	1	1	0	2	0	0	1
46	0	0	0	0	0	0	0	0	0
	52,340	15,078	21,494	70,734	16,407	20,829	88,662	21,402	24,067

*The Population Forecast by DC Office of Planning is being used for the Facilities Master Plan

Figure D.5

POPULATION FORECAST

2012-2017 ELEMENTARY SCHOOL-AGED CHILDREN POPULATION CHANGES

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 11 years.

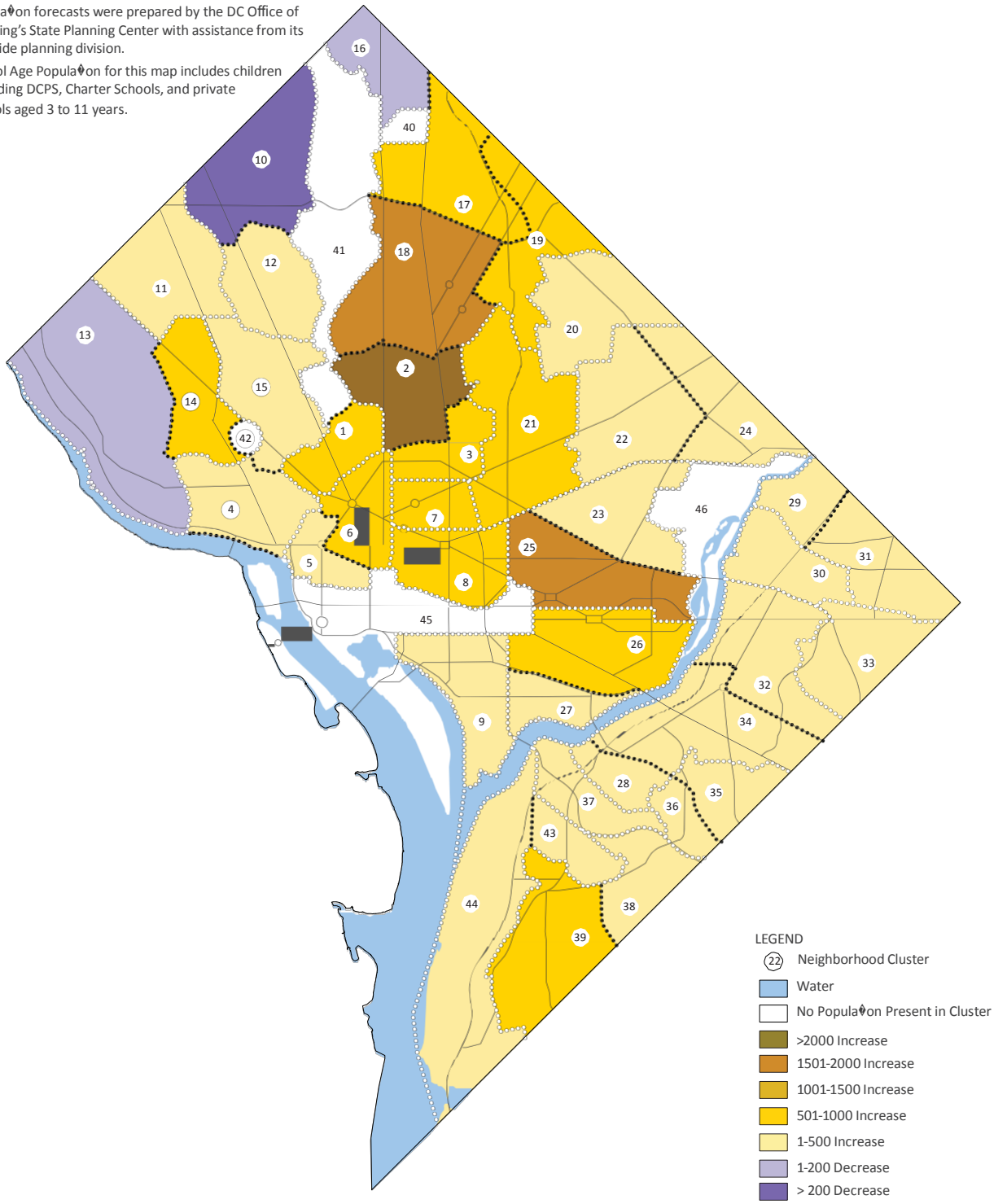


Figure D.6

POPULATION FORECAST

2012-2017 SCHOOL-AGED CHILDREN POPULATION CHANGES

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

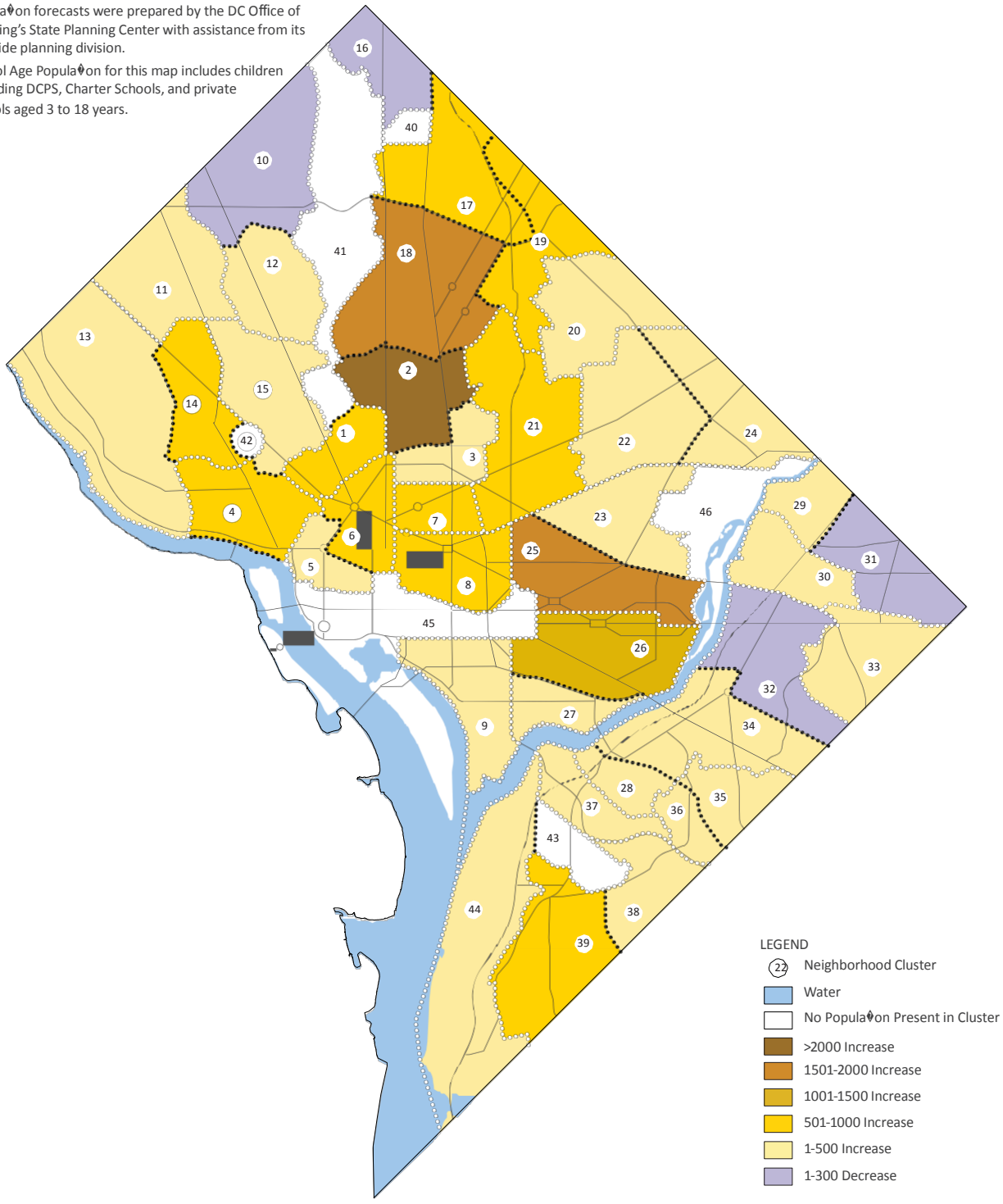


Figure D.7

POPULATION FORECAST

2012-2022 ELEMENTARY SCHOOL-AGED CHILDREN POPULATION CHANGES

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 11 years.

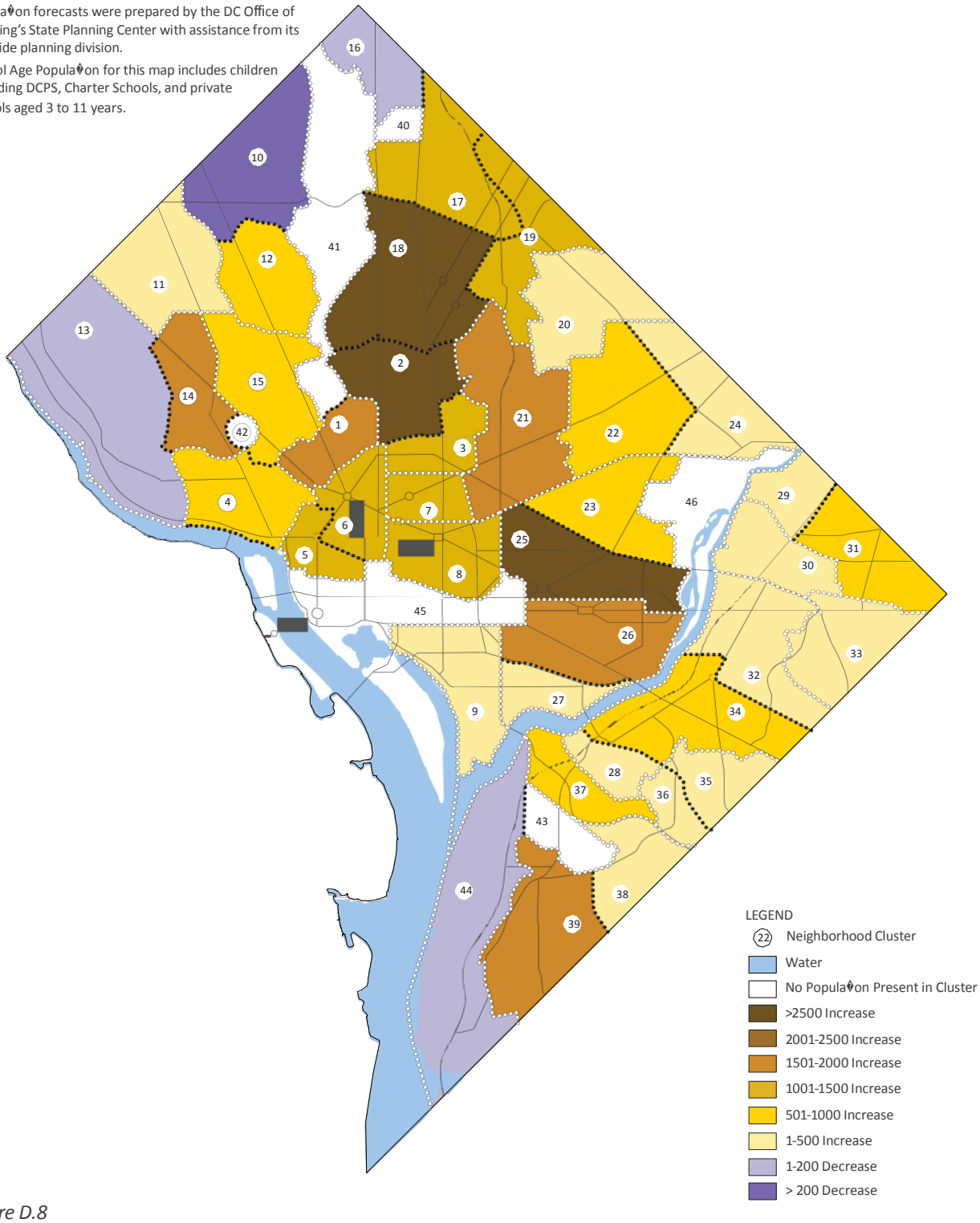


Figure D.8

POPULATION FORECAST

2012-2022 SCHOOL-AGED CHILDREN POPULATION CHANGES

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

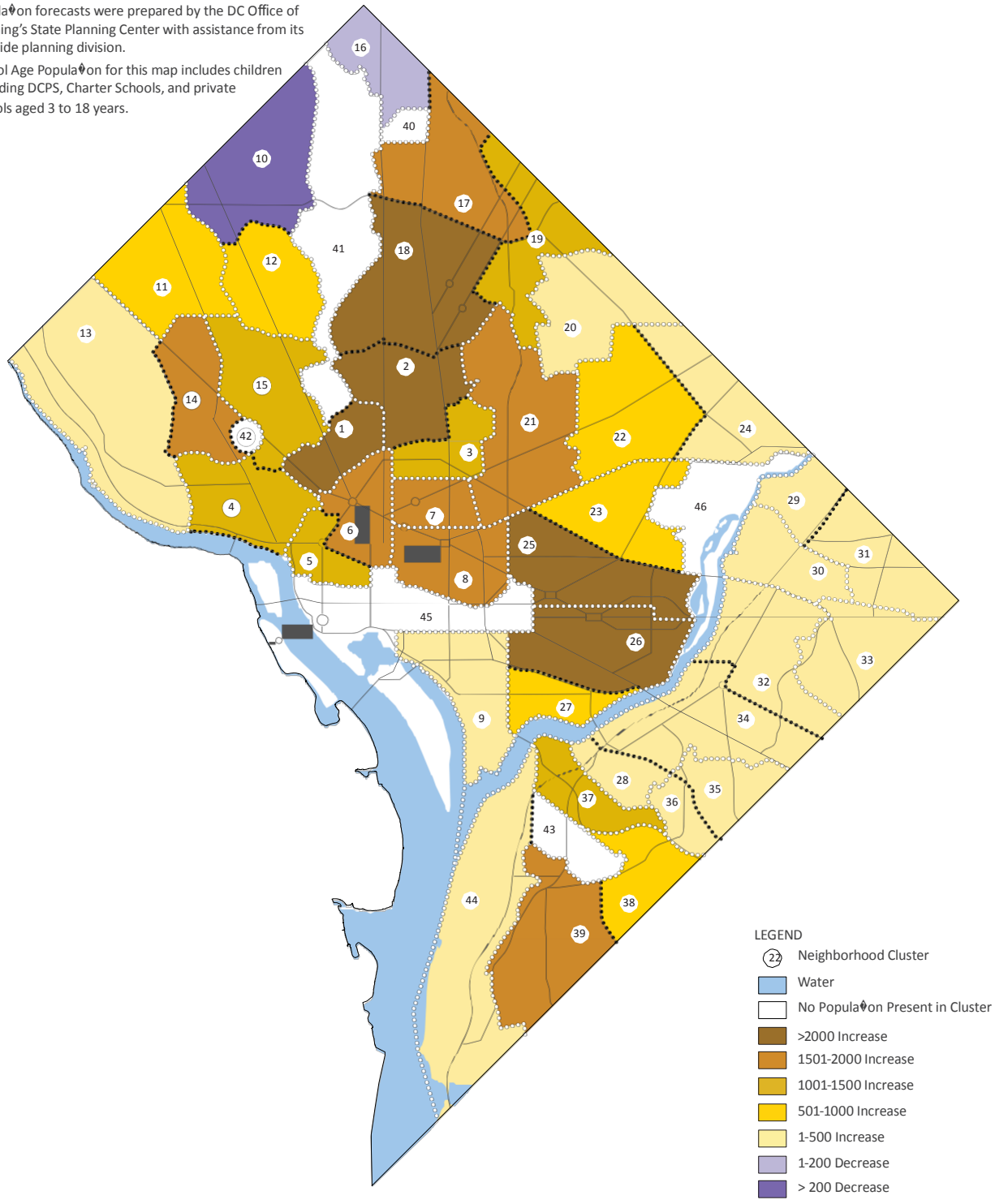


Figure D.9

POPULATION FORECAST

2012 SCHOOL-AGE POPULATION STUDENTS PER ACRE

Data was gathered from the Office of the Chief Technology Officer (OCTO).

School Age Popula on for this map includes children a ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

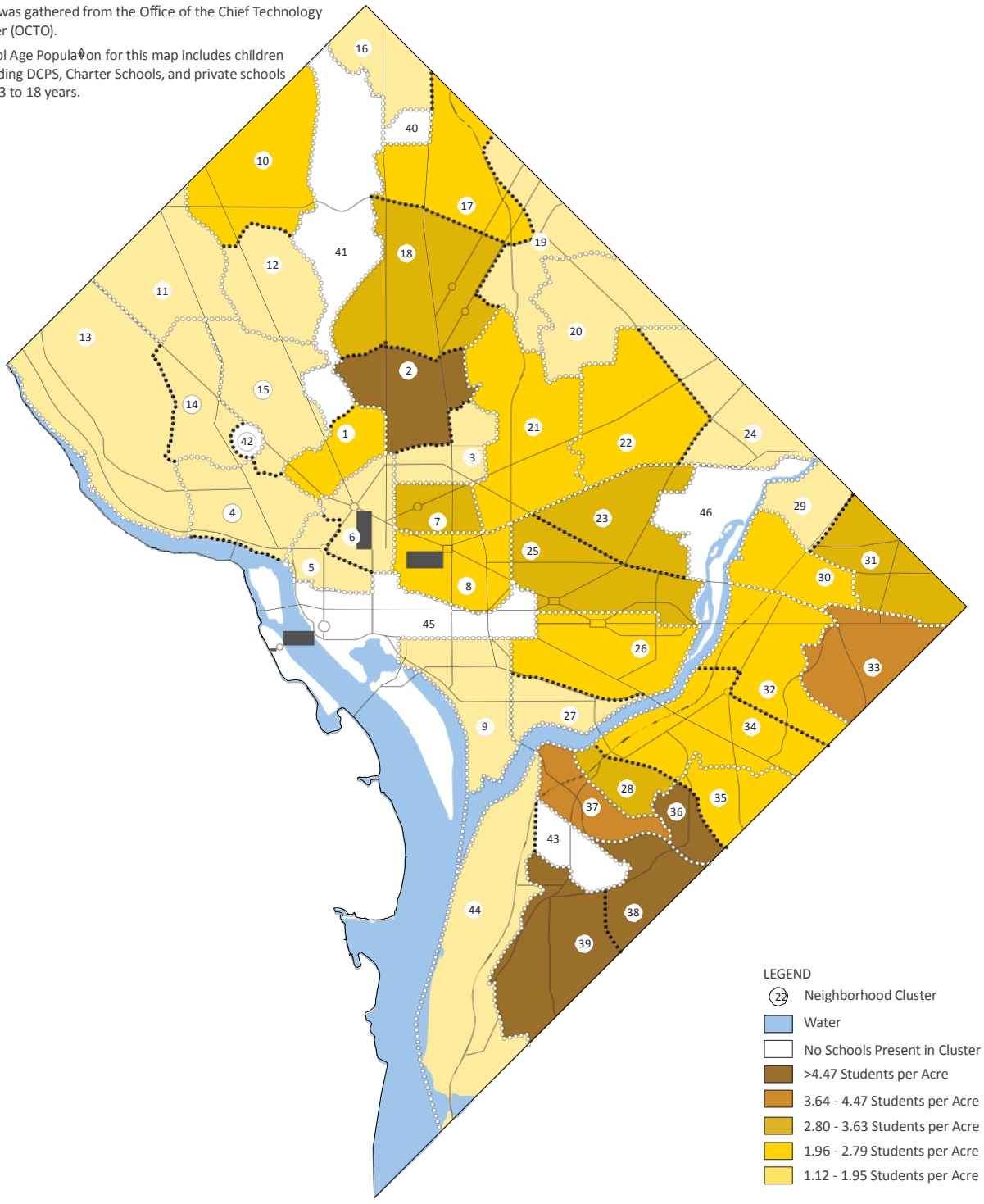


Figure D.10

POPULATION FORECAST

2017 SCHOOL-AGE POPULATION STUDENTS PER ACRE

Data was gathered from the Office of the Chief Technology Officer (OCTO).

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

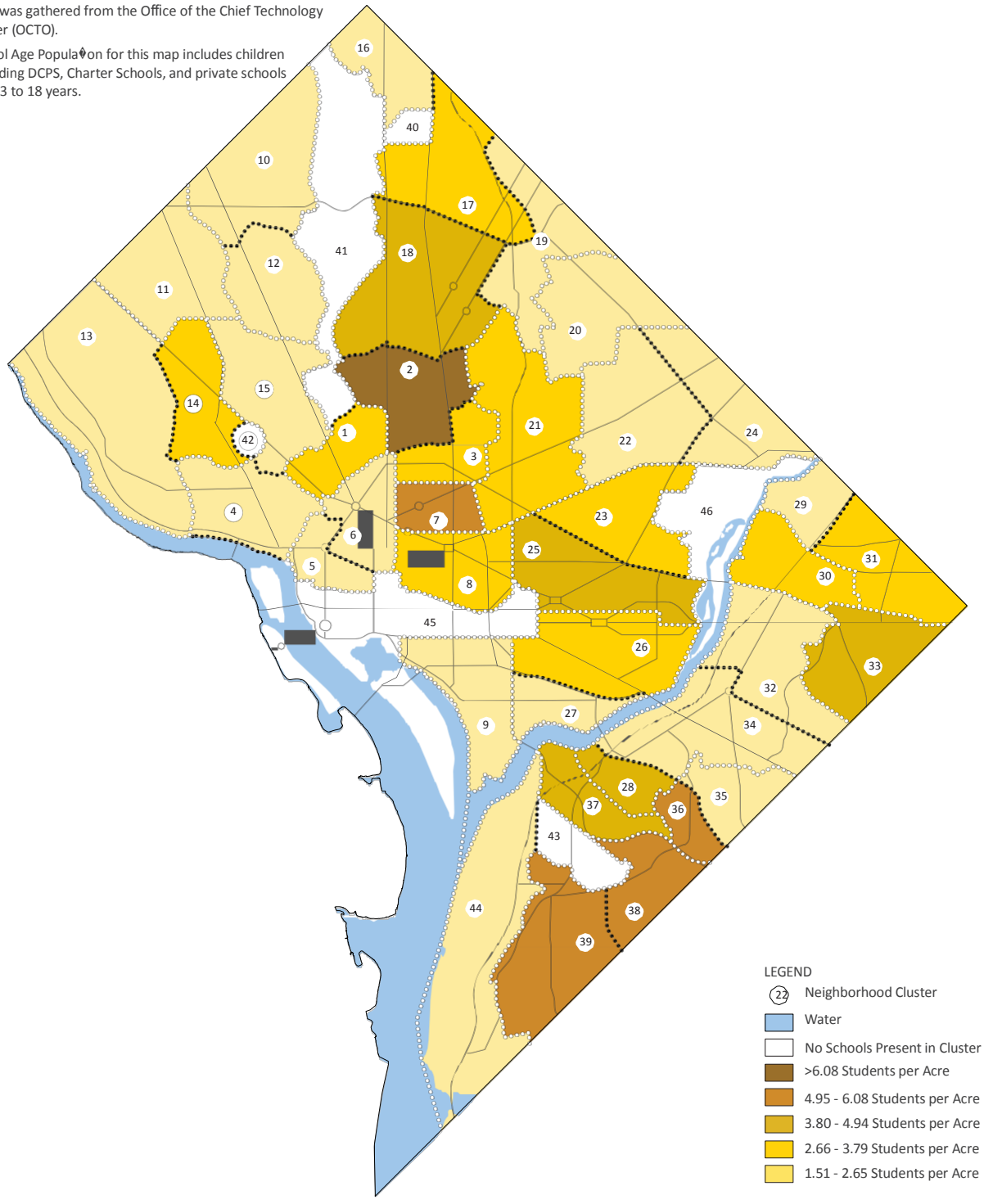


Figure D.11

ENROLLMENT FORECAST

There is usually some difference between actual school enrollment and the estimate of school-aged children in a given neighborhood cluster. This difference varies in degree due to numerous variables. The following maps illustrate projected enrollments by using school-aged population ratios in the population forecasts which incorporate the expected continuation of enrollment anomalies (Figures D.12 - D.13).

PROJECTED UNMET NEED

Figures D.14 - D.16 provide a visual reference for the potential interplay between forecasted school-aged enrollment changes and the impact on existing school capacity.

Depending on the assumptions employed, it can be seen that approximately one-third of the neighborhood clusters are forecasted to have a potential 200-plus seat deficit when compared with existing facility capacity by 2017. By 2022 and beyond, closer to two-thirds of the neighborhood clusters are facing a potential seat deficit by 2022 and beyond. In contrast, some combinations of clusters may continue to have excess school capacity; not so much because of any forecast of significant reduced demand from school-aged children, but from a lingering capacity overage following school population declines from years past.

PREDICTED ENROLLMENT

2012-2017 ELEMENTARY SCHOOL-AGED CHILDREN POPULATION CHANGES

DCPS enrollment numbers are from the Office of the State Superintendant of Education (OSSE) and Charter School Enrollment numbers obtained from Public Charter School Board (PCSB).

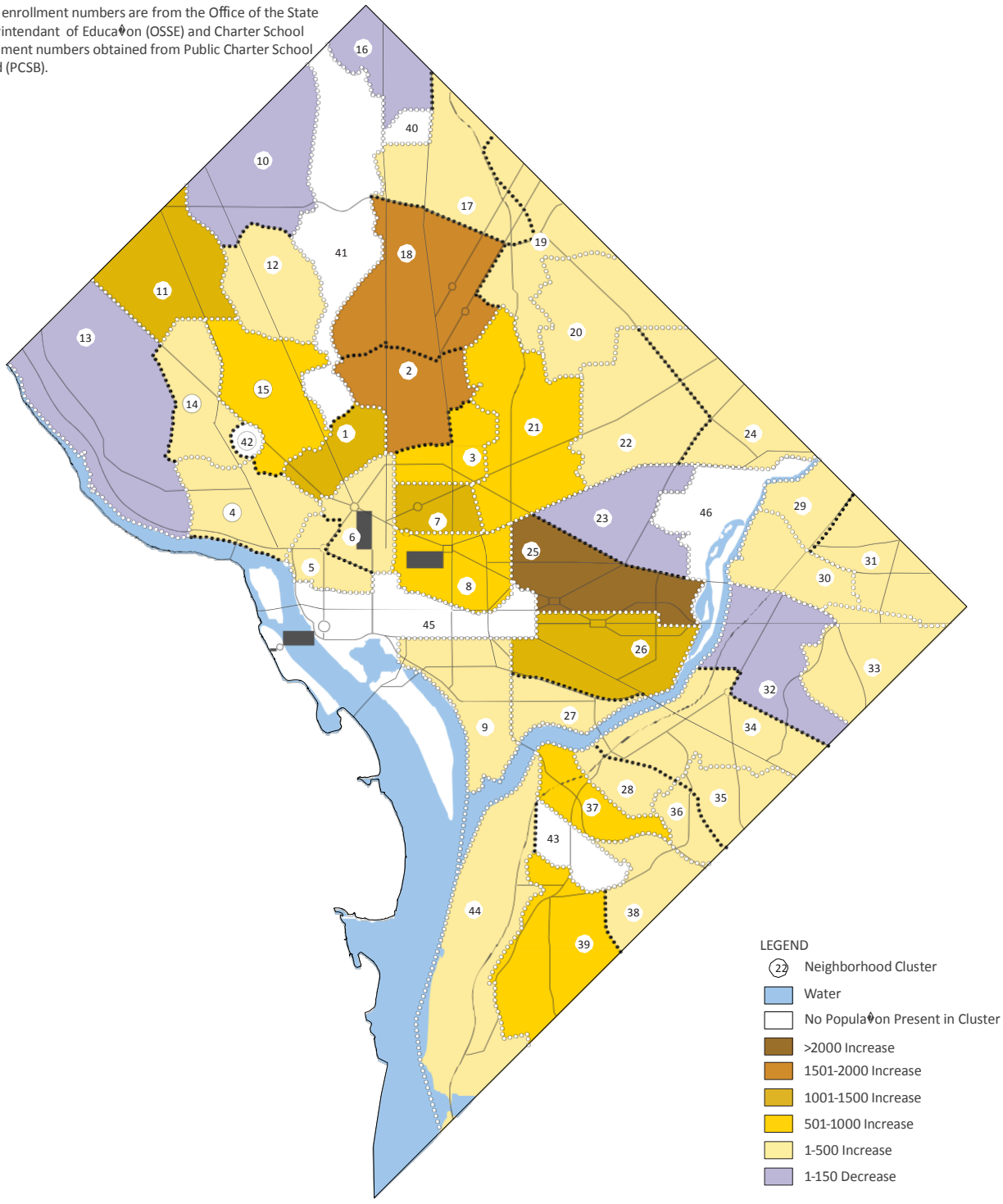


Figure D.12

PREDICTED ENROLLMENT

2012-2017 SCHOOL-AGED CHILDREN POPULATION CHANGES

DCPS enrollment numbers are from the Office of the State Superintendant of Educa♦on (OSSE) and Charter School Enrollment numbers obtained from Public Charter School Board (PCSB).

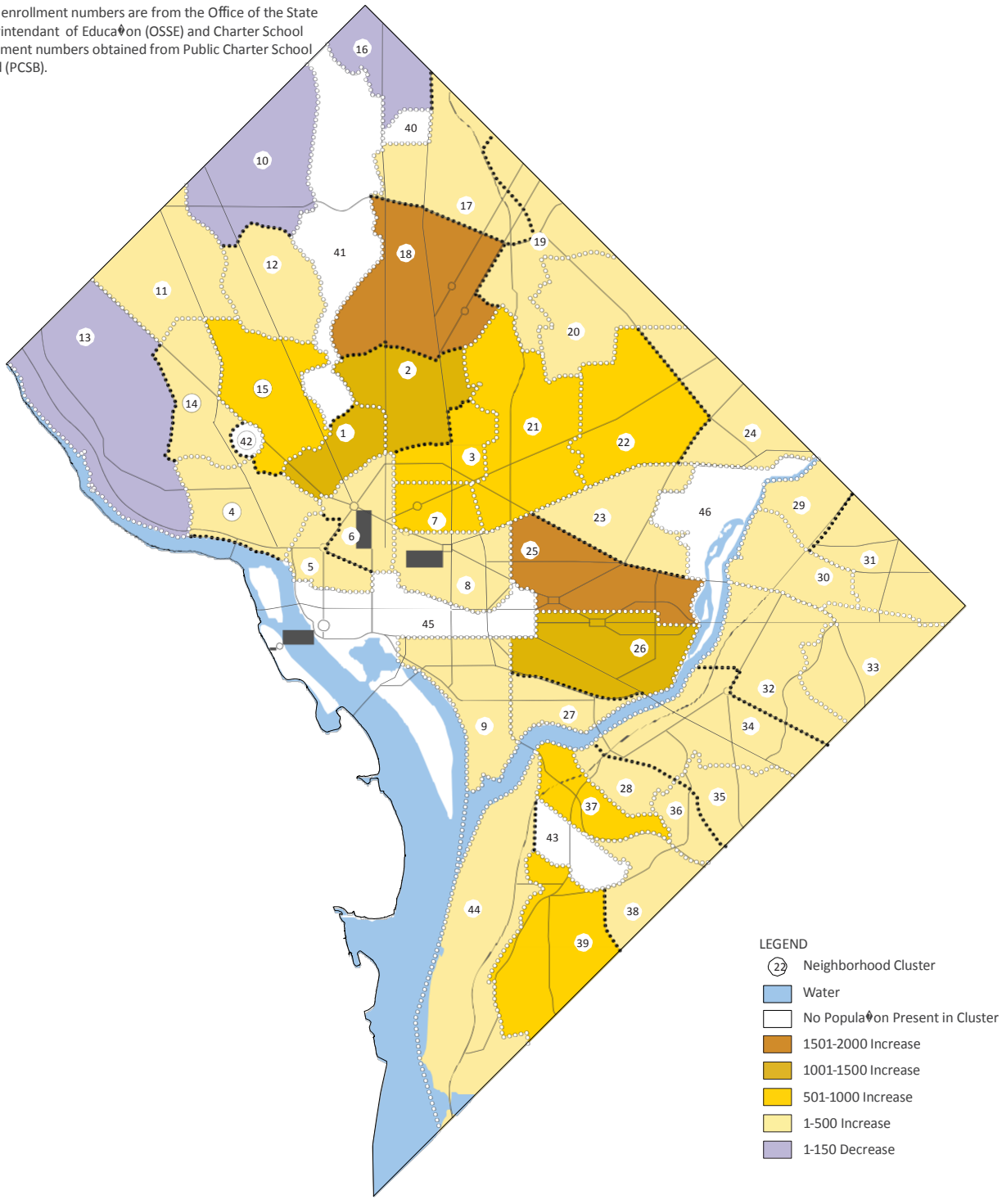


Figure D.13

PROJECTED UNMET NEED

2012 NUMBER OF PRESCHOOL STUDENTS WITH UNMET NEED COMPARED AGAINST DCPS AND CHARTER SCHOOL FACILITY CAPACITY WITHIN HOME CLUSTER

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School capacity numbers were obtained from DCPS and Charter schools. When unavailable, a proxy for Charter school capacity numbers was created by combining the Charter enrollment numbers plus the addi♦onal open seats available for each school (as reported by each individual Charter school).

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 5 years.

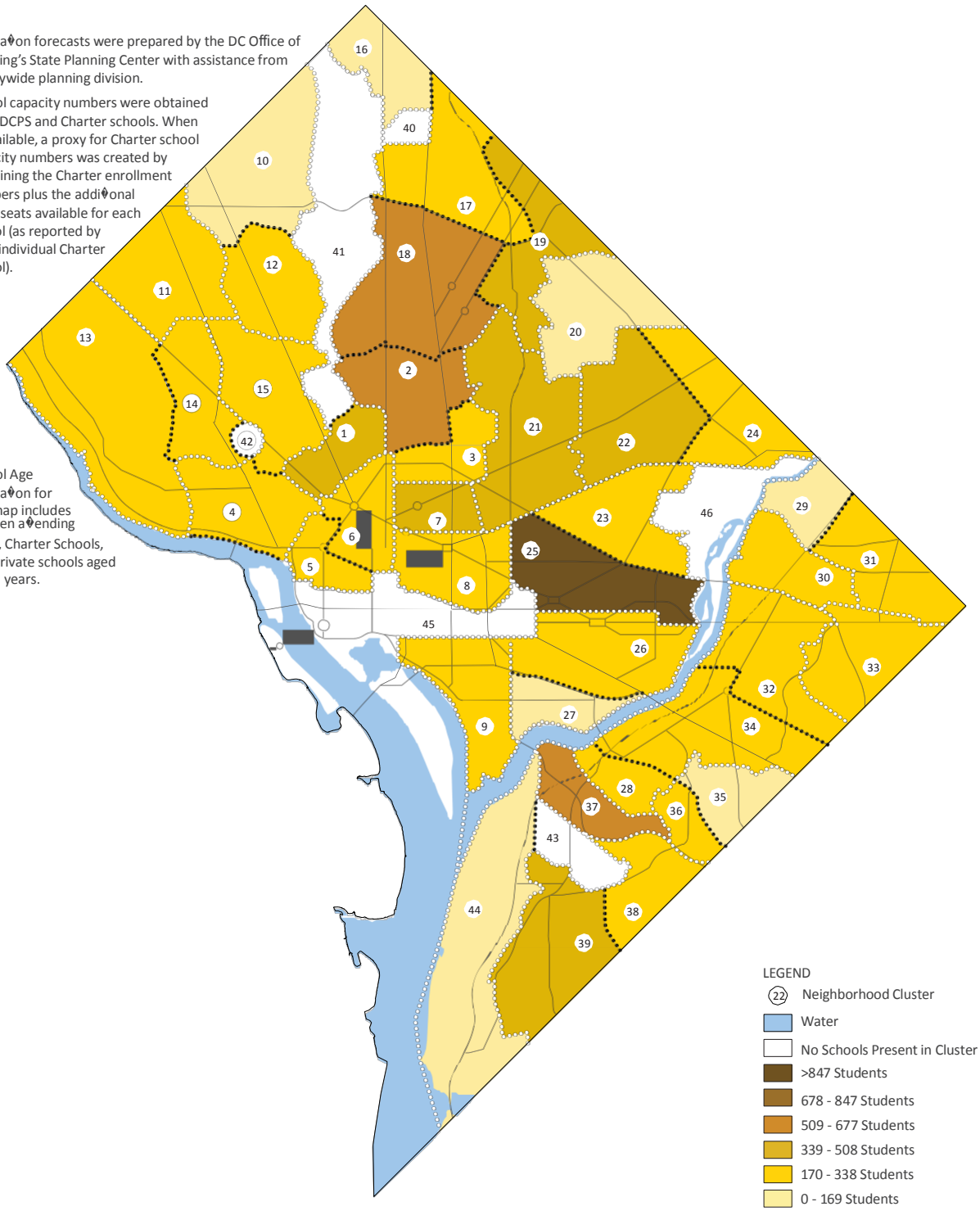


Figure D.14

PROJECTED UNMET NEED

2012 NUMBER OF ELEMENTARY STUDENTS WITH UNMET NEED COMPARED AGAINST DCPS AND CHARTER SCHOOL FACILITY CAPACITY WITHIN HOME CLUSTER

Popula♦on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School capacity numbers were obtained from DCPS and Charter schools. When unavailable, a proxy for Charter school capacity numbers was created by combining the Charter enrollment numbers plus the addi♦onal open seats available for each school (as reported by each individual Charter school).

School Age Popula♦on for this map includes children a♦ending DCPS, Charter Schools, and private schools aged 3 to 11 years.

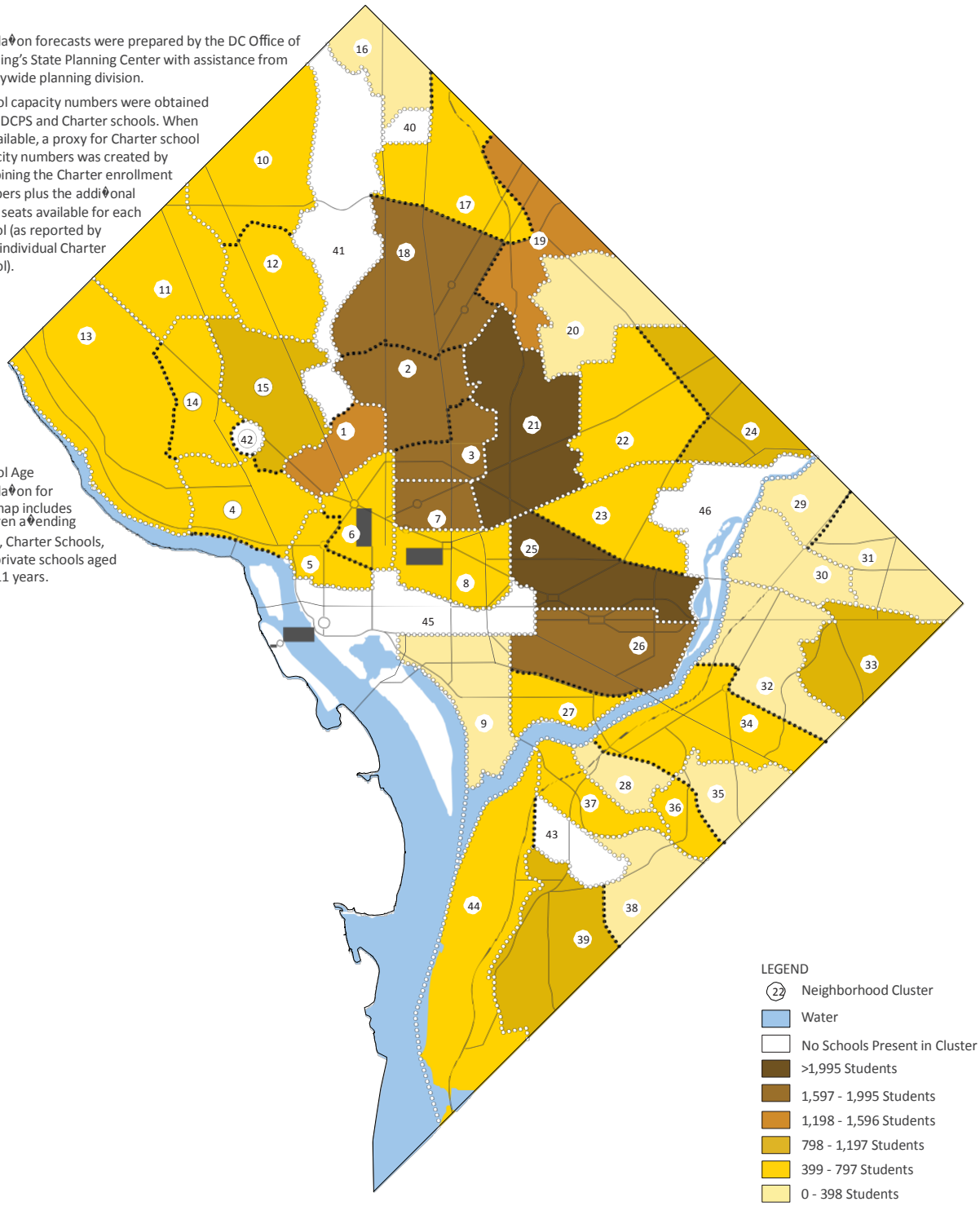


Figure D.15

UNMET NEED

2012 NUMBER OF STUDENTS WITH UNMET NEED COMPARED AGAINST DCPS AND CHARTER SCHOOL FACILITY CAPACITY WITHIN HOME CLUSTER

Popula•on forecasts were prepared by the DC Office of Planning's State Planning Center with assistance from its citywide planning division.

School capacity numbers were obtained from DCPS and Charter schools. When unavailable, a proxy for Charter school capacity numbers was created by combining the Charter enrollment numbers plus the addi•onal open seats available for each school (as reported by each individual Charter school).

School Age Popula•on for this map includes children a•ending DCPS, Charter Schools, and private schools aged 3 to 18 years.

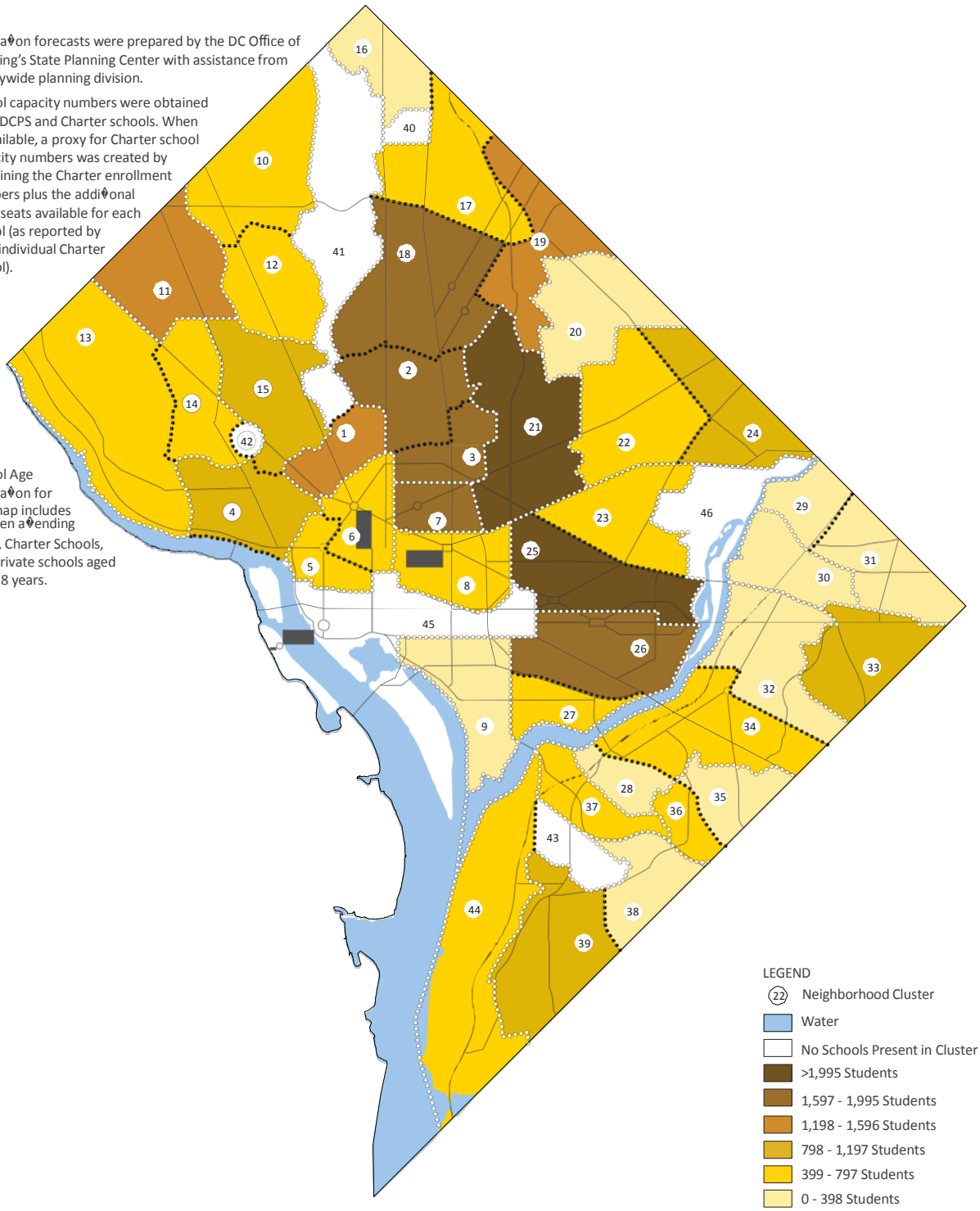


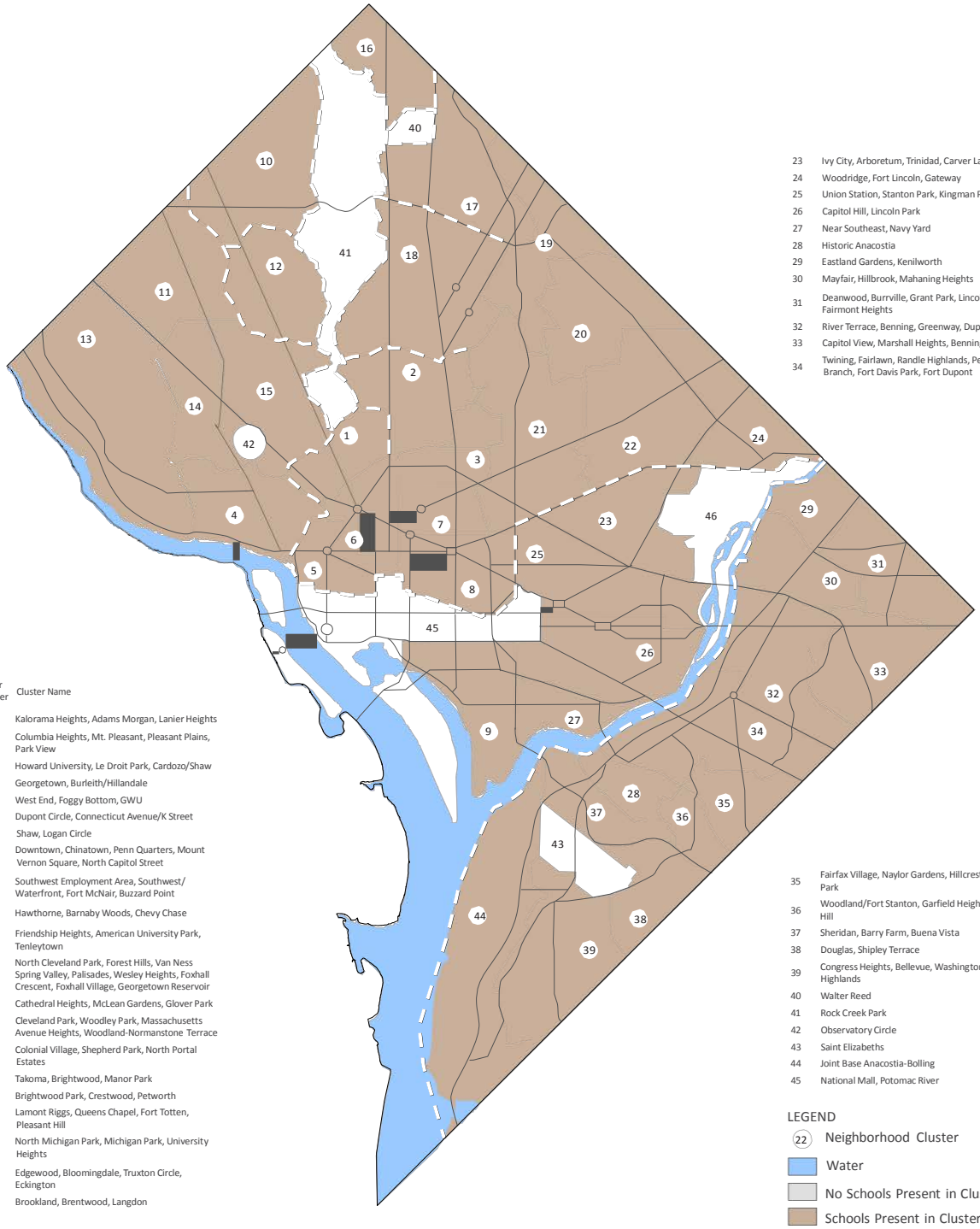
Figure D.16

APPENDIX E:

DEMOGRAPHIC ANALYSIS

KEY MAP

Neighborhood Cluster Locations with District Streets



Cluster Number	Cluster Name
1	Kalorama Heights, Adams Morgan, Lanier Heights
2	Columbia Heights, Mt. Pleasant, Pleasant Plains, Park View
3	Howard University, Le Droit Park, Cardozo/Shaw
4	Georgetown, Burleith/Hillandale
5	West End, Foggy Bottom, GWU
6	Dupont Circle, Connecticut Avenue/K Street
7	Shaw, Logan Circle
8	Downtown, Chinatown, Penn Quarters, Mount Vernon Square, North Capitol Street
9	Southwest Employment Area, Southwest/ Waterfront, Fort McNair, Buzzard Point
10	Hawthorne, Barnaby Woods, Chevy Chase
11	Friendship Heights, American University Park, Tenleytown
12	North Cleveland Park, Forest Hills, Van Ness
13	Spring Valley, Palisades, Wesley Heights, Foxhall Crescent, Foxhall Village, Georgetown Reservoir
14	Cathedral Heights, McLean Gardens, Glover Park
15	Cleveland Park, Woodley Park, Massachusetts Avenue Heights, Woodland-Normanstone Terrace
16	Colonial Village, Shepherd Park, North Portal Estates
17	Takoma, Brightwood, Manor Park
18	Brightwood Park, Crestwood, Petworth
19	Lamont Riggs, Queens Chapel, Fort Totten, Pleasant Hill
20	North Michigan Park, Michigan Park, University Heights
21	Edgewood, Bloomingdale, Truxton Circle, Eckington
22	Brookland, Brentwood, Langdon
23	Ivy City, Arboretum, Trinidad, Carver Langston
24	Woodridge, Fort Lincoln, Gateway
25	Union Station, Stanton Park, Kingman Park
26	Capitol Hill, Lincoln Park
27	Near Southeast, Navy Yard
28	Historic Anacostia
29	Eastland Gardens, Kenilworth
30	Mayfair, Hillbrook, Mahaning Heights
31	Deanwood, Burrville, Grant Park, Lincoln Heights, Fairmont Heights
32	River Terrace, Benning, Greenway, Dupont Park
33	Capitol View, Marshall Heights, Benning Heights
34	Twining, Fairlawn, Randle Highlands, Penn Branch, Fort Davis Park, Fort Dupont
35	Fairfax Village, Naylor Gardens, Hillcrest, Summit Park
36	Woodland/Fort Stanton, Garfield Heights, Knox Hill
37	Sheridan, Barry Farm, Buena Vista
38	Douglas, Shipley Terrace
39	Congress Heights, Bellevue, Washington Highlands
40	Walter Reed
41	Rock Creek Park
42	Observatory Circle
43	Saint Elizabeths
44	Joint Base Anacostia-Bolling
45	National Mall, Potomac River

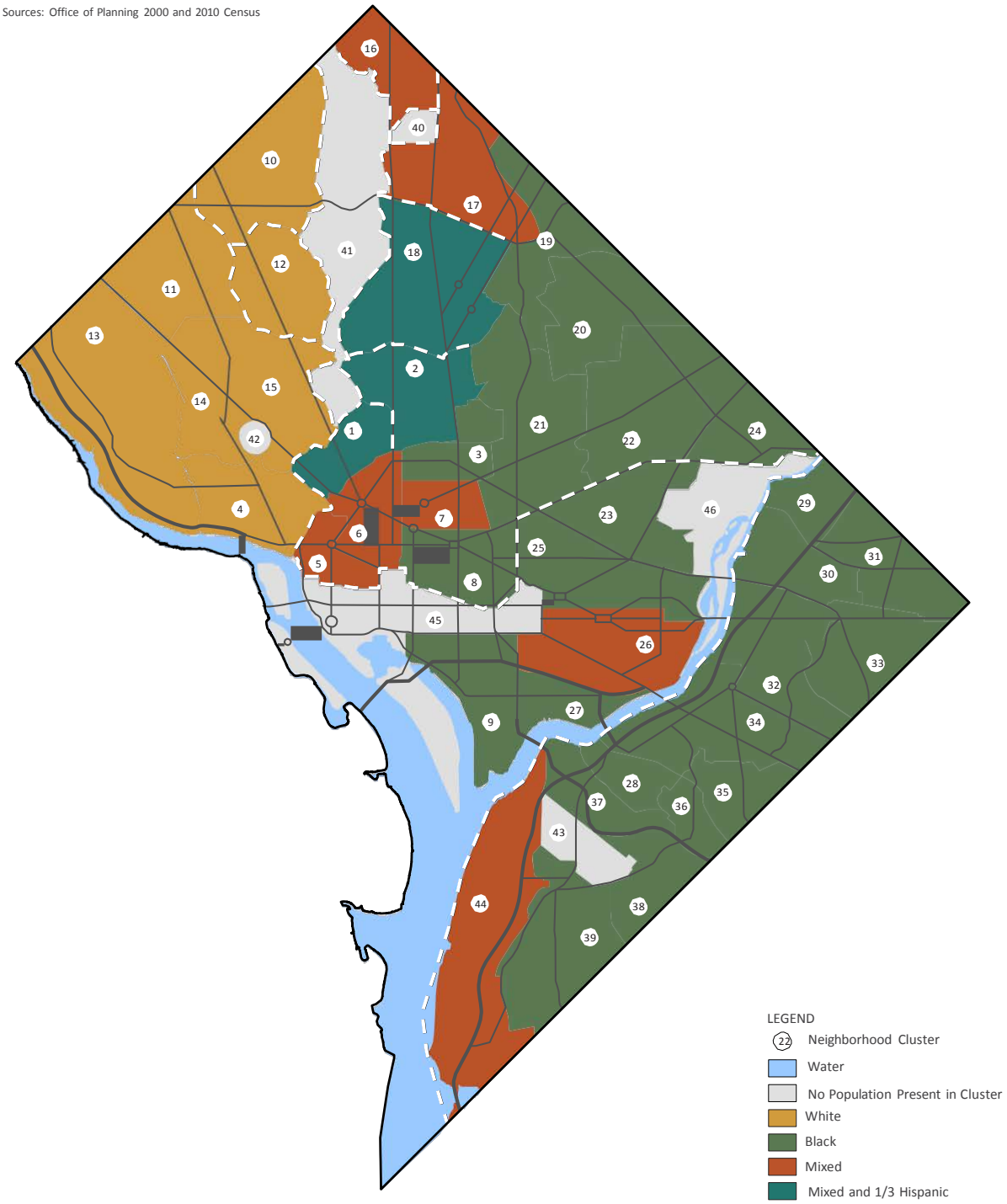
LEGEND

- (22) Neighborhood Cluster
- Water
- No Schools Present in Cluster
- Schools Present in Cluster

DEMOGRAPHICS

2010 School Aged Children Racial Majority (67% Threshold)

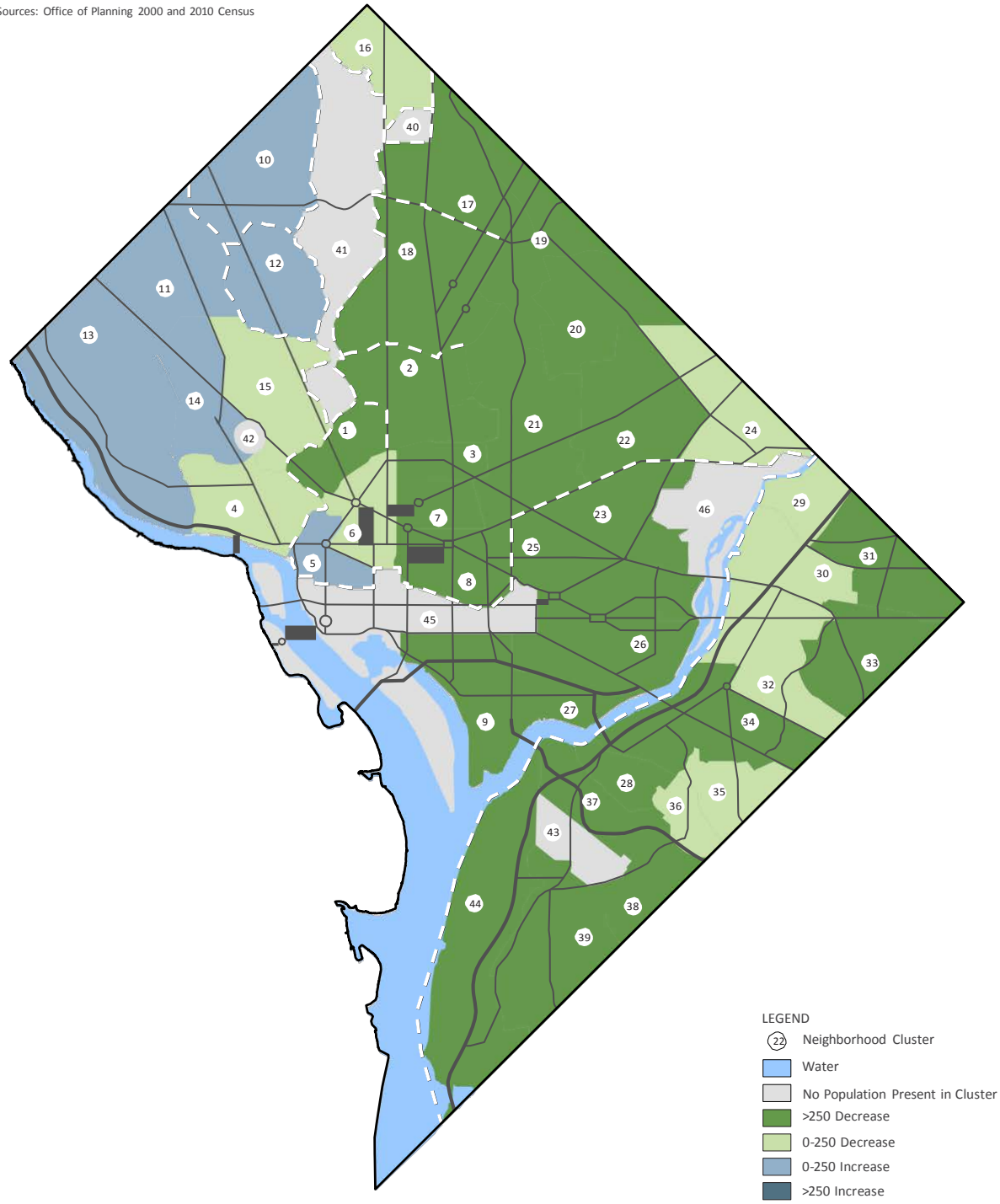
Data Sources: Office of Planning 2000 and 2010 Census



DEMOGRAPHICS

2000-2010 Change in the number of Black School Aged Children (5-17 Years)

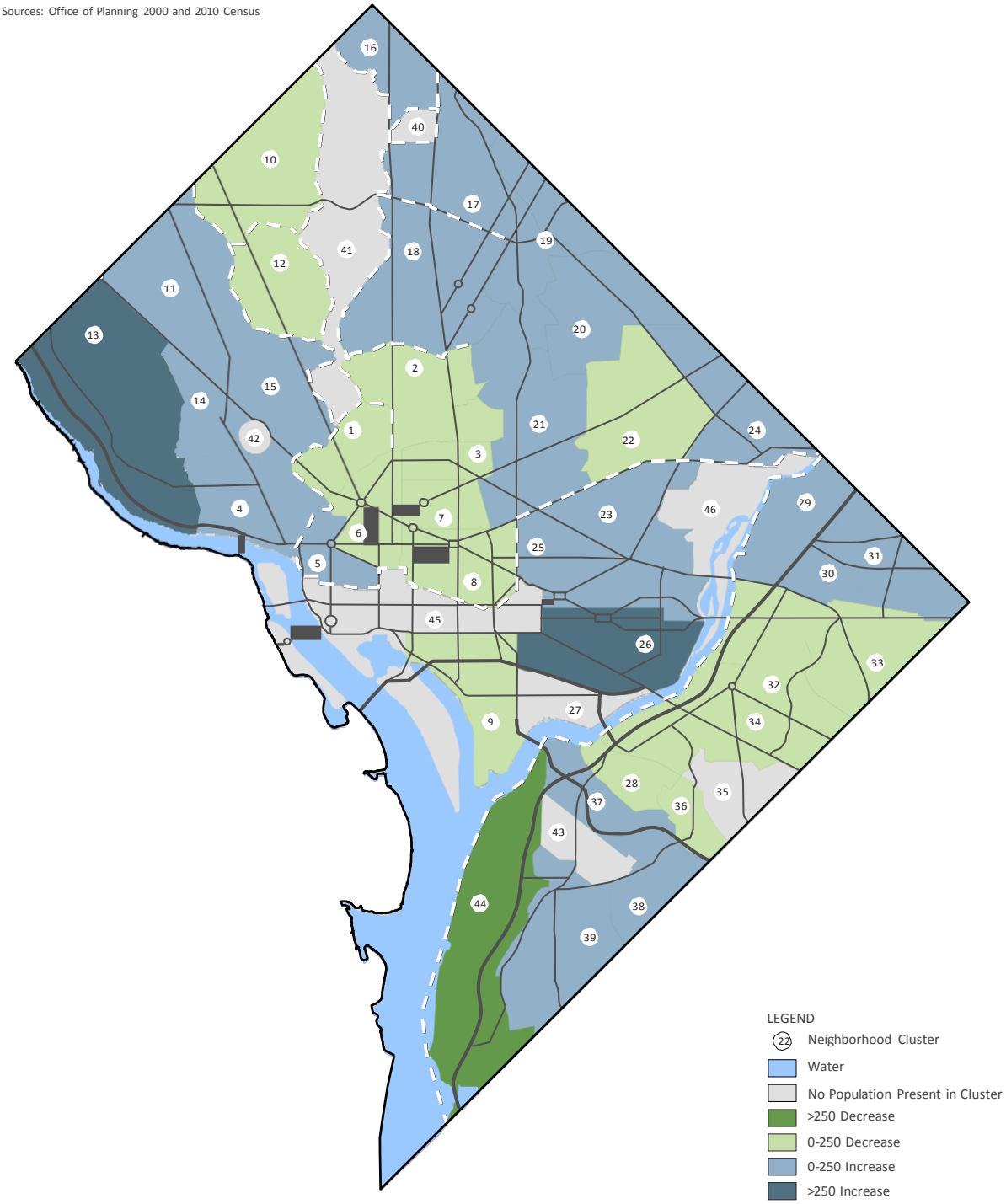
Data Sources: Office of Planning 2000 and 2010 Census



DEMOGRAPHICS

2000-2010 Change in the number of White School Aged Children (5-17 Years)

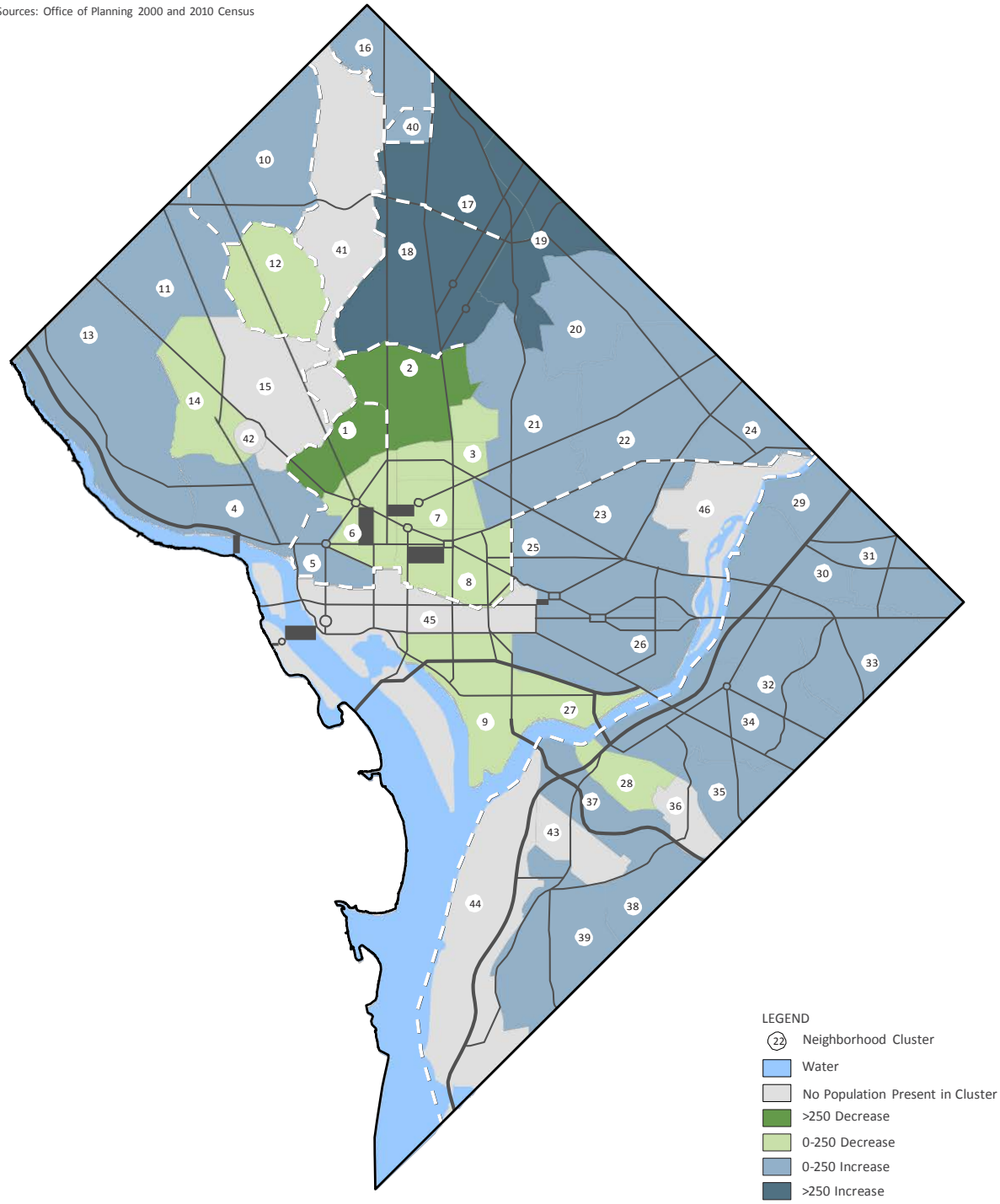
Data Sources: Office of Planning 2000 and 2010 Census



DEMOGRAPHICS

2000-2010 Change in the number of Hispanic School Aged Children (5-17 Years)

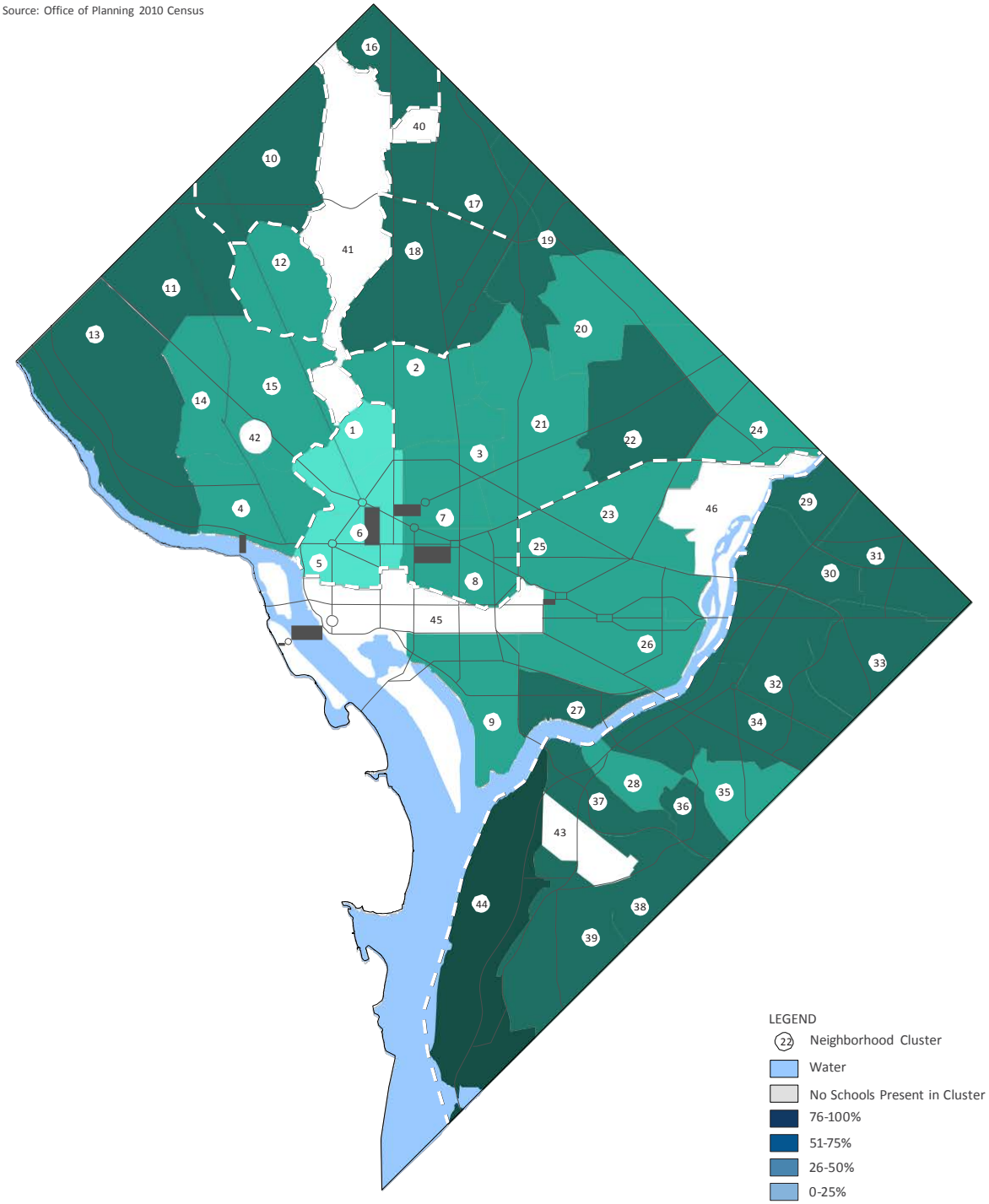
Data Sources: Office of Planning 2000 and 2010 Census



DEMOGRAPHICS

2010 Family Households

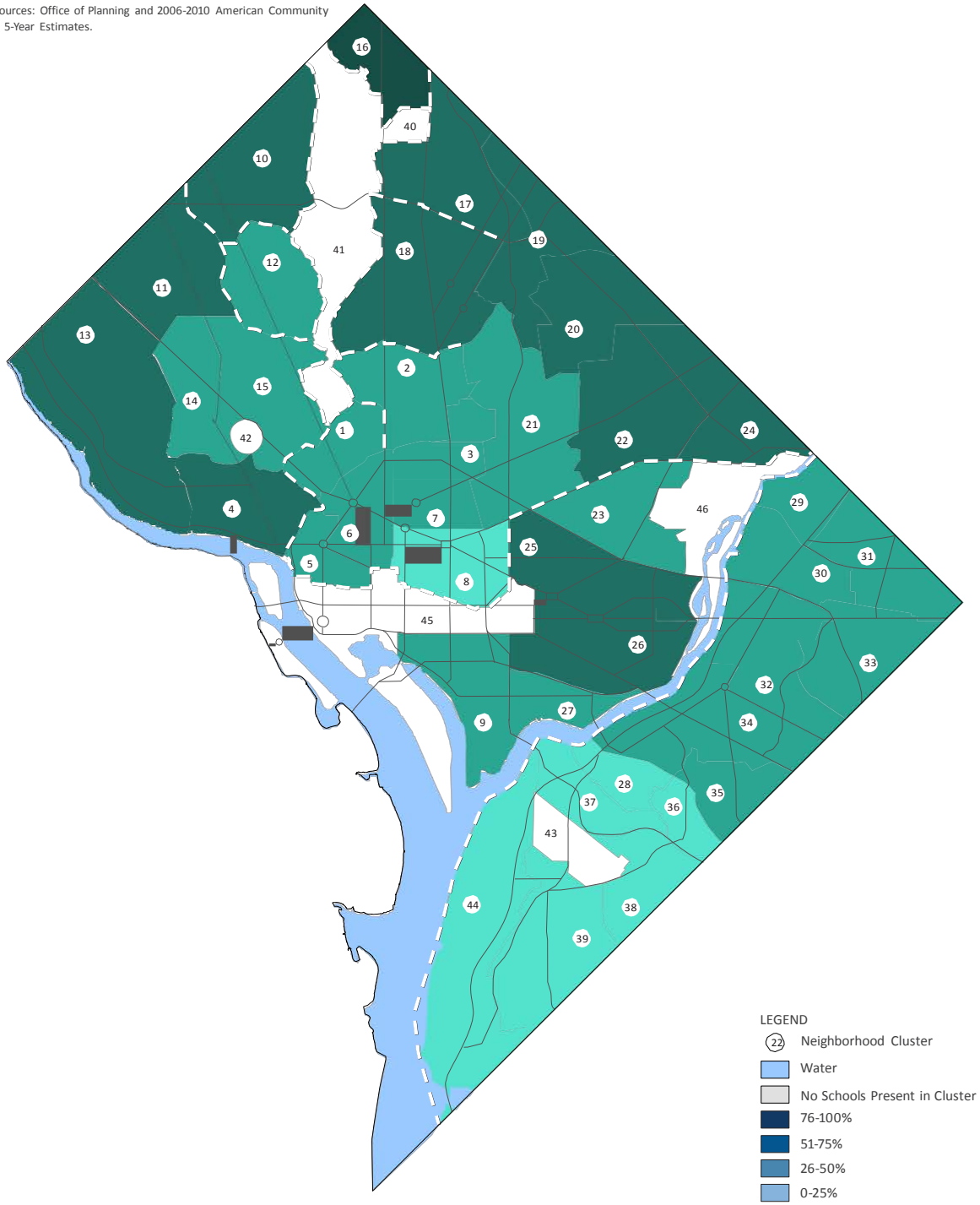
Data Source: Office of Planning 2010 Census



DEMOGRAPHICS

2010 Percent of Homes Owner Occupied

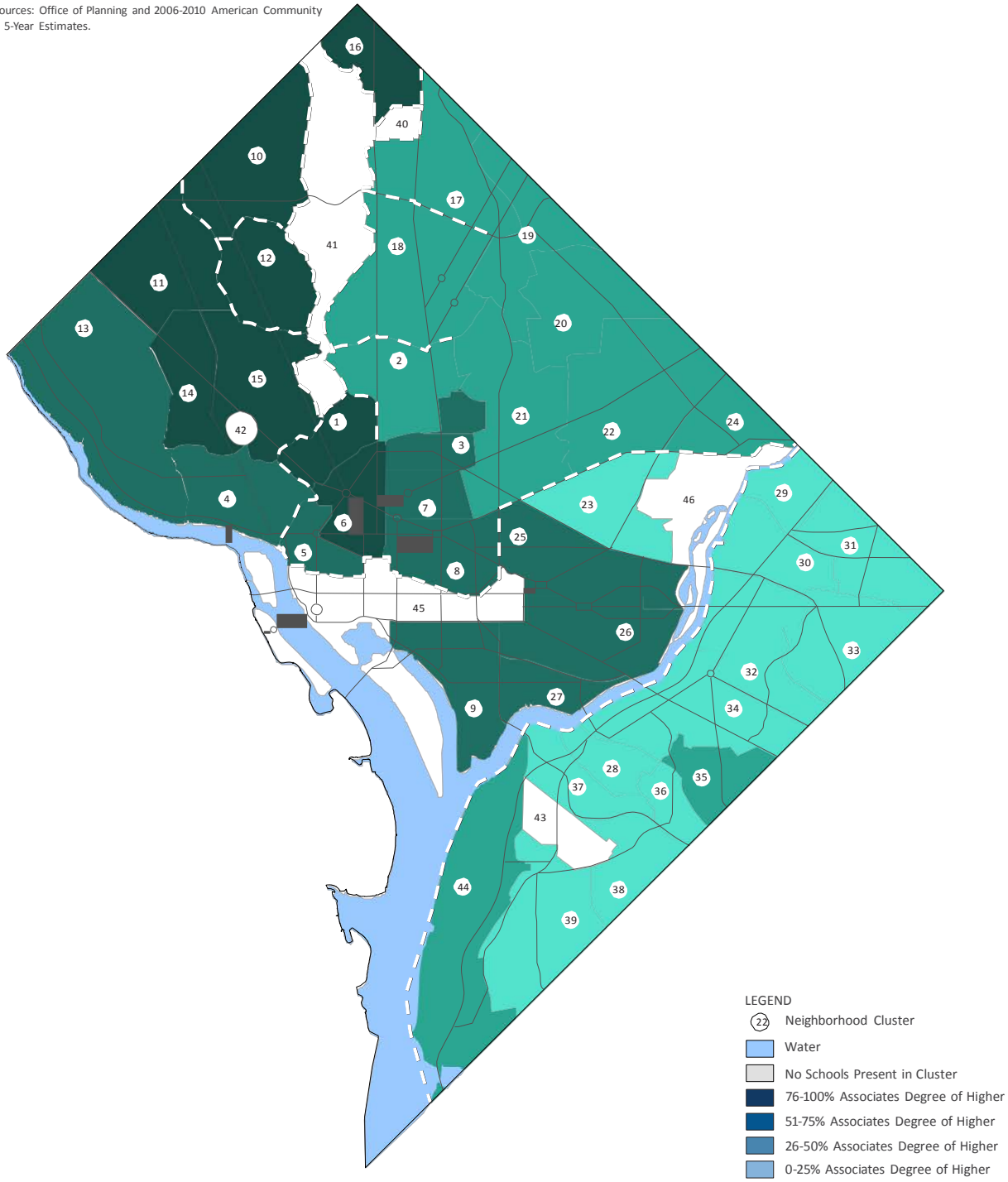
Data Sources: Office of Planning and 2006-2010 American Community Survey 5-Year Estimates.



DEMOGRAPHICS

2010 Percent Education Attainment +18-Years

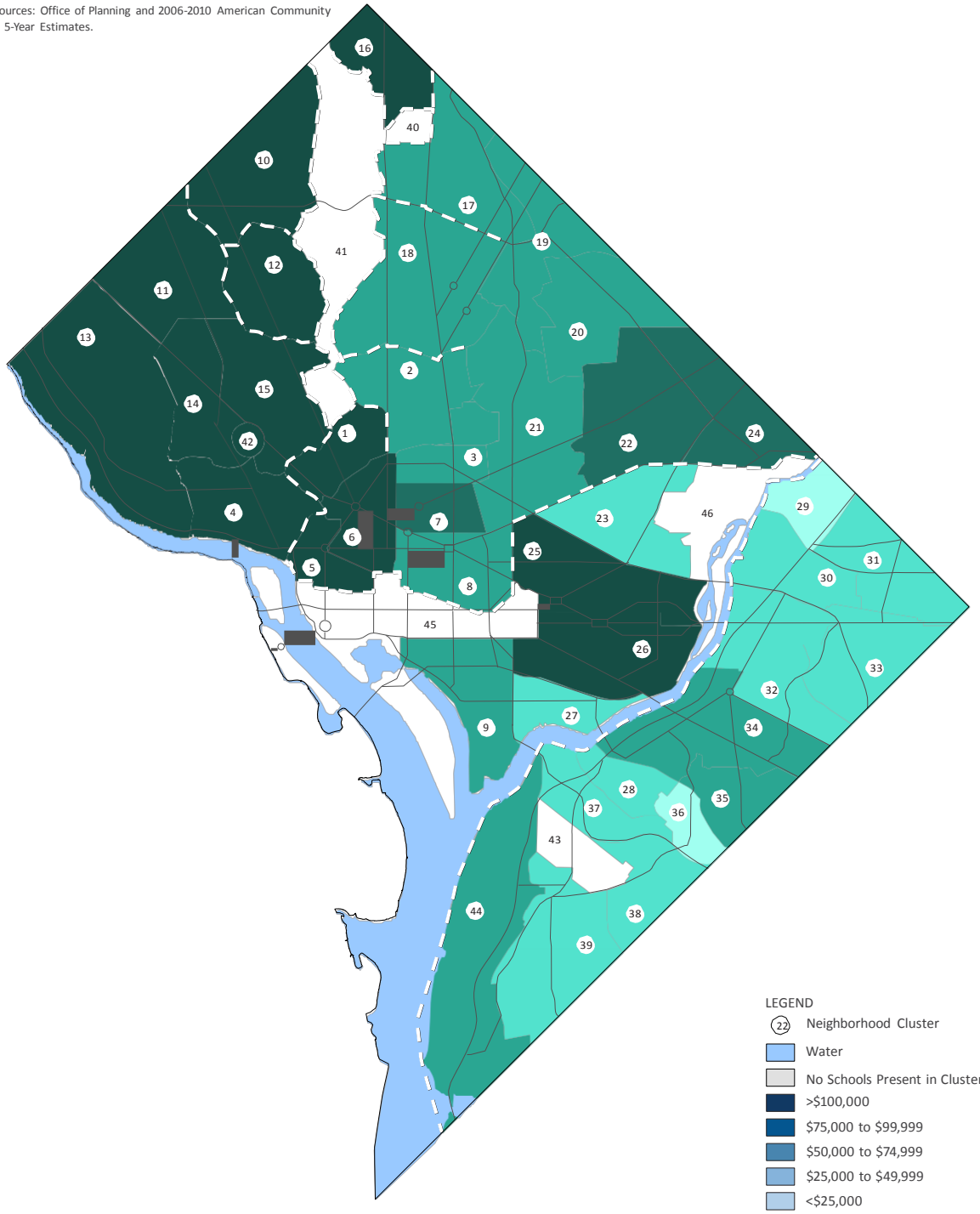
Data Sources: Office of Planning and 2006-2010 American Community Survey 5-Year Estimates.



DEMOGRAPHICS

2010 Average of the Median Family Income

Data Sources: Office of Planning and 2006-2010 American Community Survey 5-Year Estimates.



DEMOGRAPHICS

2000-2010 Percent Change of the Average of the Median Family Income

Data Sources: Office of Planning and 2006-2010 American Community Survey 5-Year Estimates.