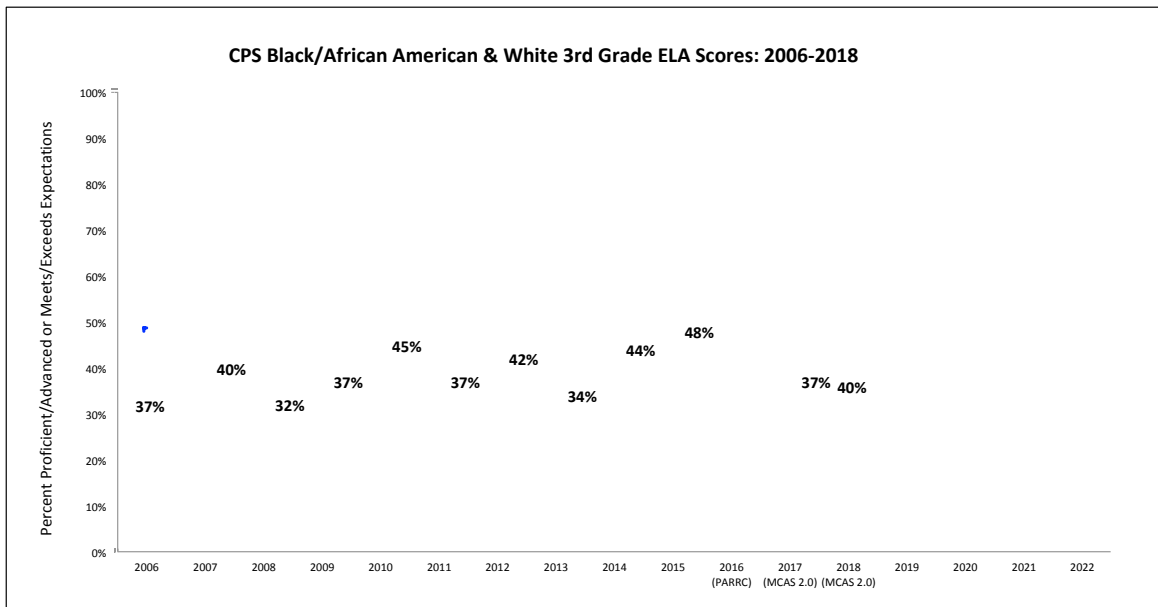


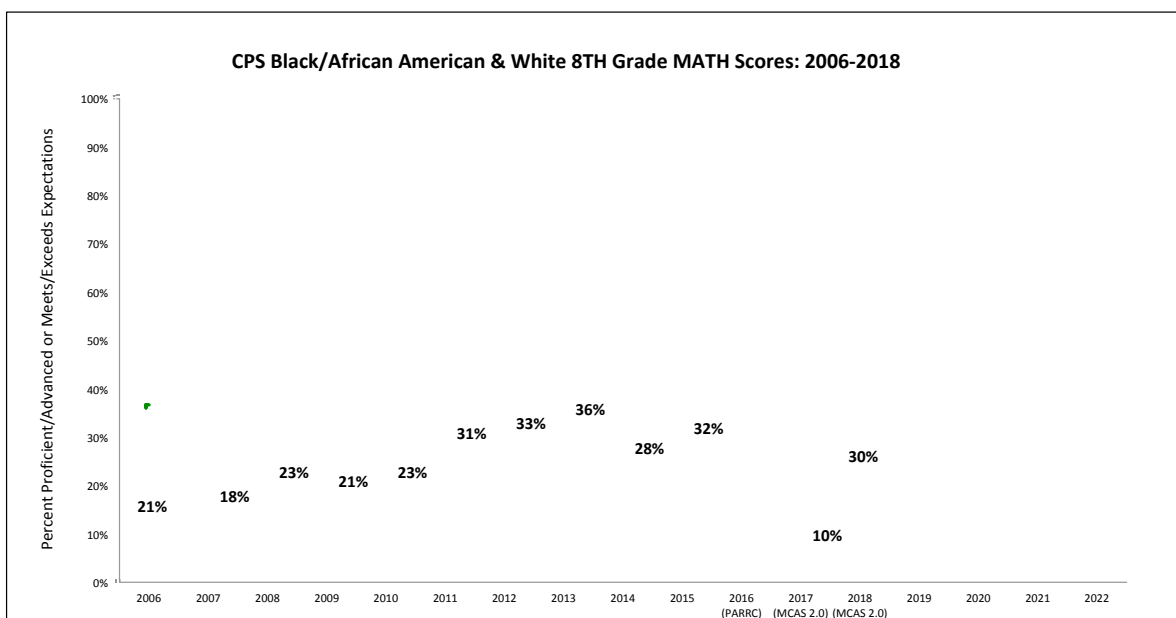
Achievement Notes for CPS Black/African American Students

Given the district's commitment to challenging white supremacy, it's useful to look specifically at how well we are educating our Black students. (Future analyses can look specifically at other demographic groups, such as students with disabilities, ELL, Latinx students, Asian students, etc.)

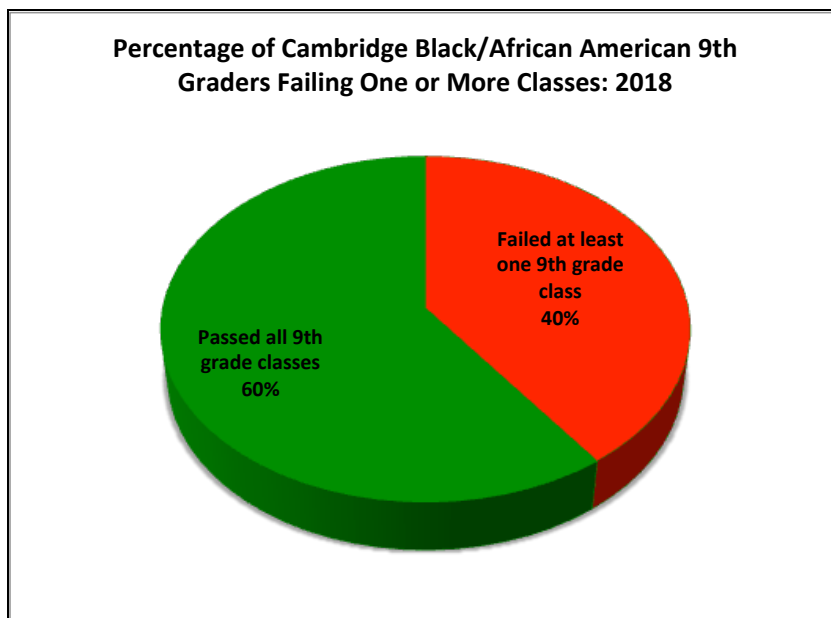
KEY INDICATOR: 3rd grade ELA, 2006-2018: Over the past 12 years there has been little change in 3rd grade ELA scores for our Black students. At best, scores have increased by roughly 10 percentage points, an average of 0.8 percentage points per year. The Black-white differential was 36 percentage points in 2006, and, with the new MCAS, 32 points in 2018.



KEY INDICATOR: 8th Grade Math over time: Eighth grade math scores for Black students started out very low (~20% proficient) and have increased, at best, by roughly 15 percentage points over the past 12 years, an average of 1.25 percentage points per year. The Black-white differential was 36 percentage points in 2006, and, with the new MCAS, 47 percentage points in 2018.



Failing at least one 9th grade class: In 2017-2018, 40% of our Black 9th graders failed one or more classes. Failure rates in prior years ranged from 24% to 30%.



Other outcomes for Black CPS students:

- 60% of **Black 3rd-8th graders** scored **below Meets Expectations** on the 2018 MCAS 2.0 **ELA exams**. The ELA growth rate for Black students in grades 4-8 was average (51.5).
- 70% of **Black 3rd-8th graders** scored **below Meets Expectations** on the 2018 MCAS 2.0 **Math exam**. The Math growth rate for Black students in grades 4-8 was average (46.5).
- 31% of Black students, preK-12, were enrolled in **Special Education** in 2017-2018.
- 32% of Black high school students at CRLS were **chronically absent** in 2016-2017.
- On the most recent Teen Health Surveys, 45% of Black middle schoolers and 38% of Black high schoolers reported that there was **no adult at school they could talk to if they had a problem**.
- For the class of 2017, 80% of Black CRLS graduates enrolled in college, but 24% of these college-going students **enrolled in a 2-year rather than 4-year colleges**. Statewide, 2-year colleges have extremely low completion rates.
- From 2011 to 2015, 42% of Black CRLS graduates who enrolled in public 2- or 4-year colleges were **required to take remedial courses**.

Budget Notes for FY20 Budget

1. Differences between FY19 and past CPS budgets:

Looking at the CPS FY07 budget (the oldest CPS budget available online) and other past budgets, there appear to be several major differences between past budgets and the current FY19 budget:

Elementary class sizes were smaller. In 2007, the target class size for grades 1-3 was only 18 students, vs. an FY19 target of 22 students. The (projected) average class size for grades JK-8 in the FY07 budget was only 17.2 students; In the FY19 budget, the projected average was 19 students for JK-5 and 21 students for grades 6-8. **The 2010 CPS budget guide (pg. 16) states:**

When it comes to teaching, every educational expert will tell you that class size matters. That's why we **average a district wide elementary class size of 18 students.**

Excerpt from CPS FY10 Budget Highlights

There were substantially more General Education paraprofessionals per student. In FY07, the formula for General Education paraprofessionals per school was one hour of paraprofessional time per 9 students, JK-8th grade. In FY19, the formula was 1 hour of paraprofessional time per 13 students, *JK-5 only*. This constitutes almost a 50% reduction in the number of General Education paraprofessionals in our schools. **The formula appears to have been changed in the FY11 budget, when CPS received only a 1.9% per pupil budget increase.**

From FY07 CPS Adopted Budget, pg. 14.

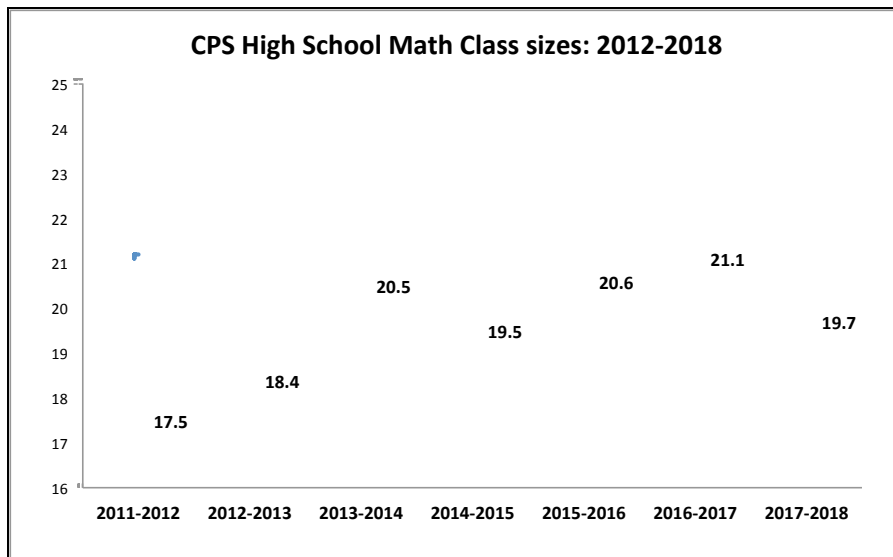
1. Elementary Classroom Pupil-Teacher Ratio	
- Kindergarten:	- Contract Class Size 1:20
- Grades 1-3:	- Contract Class Size 1:25
- Grades 4-8	- Contract Class Size 1:25
1 Teacher for each Classroom	
2. Elementary Classroom Instructional Aides:	
-	1 Full-time Aide for each kindergarten class
-	1 hour of aide time/day for every 9 students in grades 1-8 (with the exception of one school)

High school class sizes were smaller. In 2009-2010, the average CRLS class size was 16.5 students. In 2017-2018, the average was 19.1. Class sizes were substantially smaller in all subjects except History. In terms of STEM opportunities, Math and Science classes are obviously very important. (Data not available before 2010.)

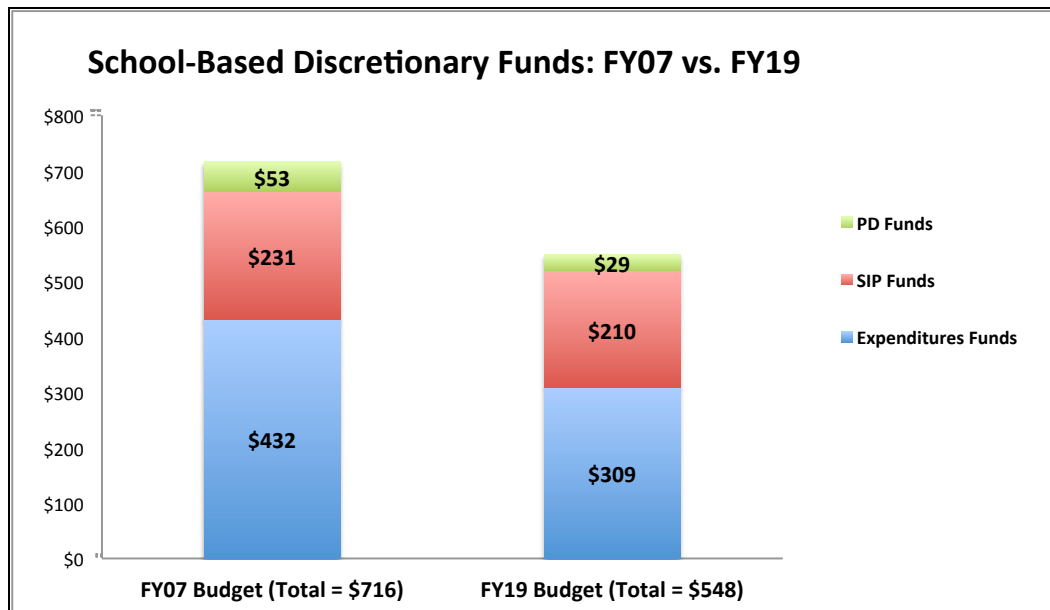
Table: Average class sizes at CRLS: 2010 and 2018

	English	History	Math	Sciences	World Language	Total
2009-2010	16.7	20.2	17.1	16.4	12.1	16.5
2017-2018	18.3	20.6	19.7	18.4	18.5	19.1

The graph below shows the gradual increase in math class sizes over a six-year period.



Schools had substantially more discretionary funds. In FY07, schools were given an average of \$715 per student (in 2007 dollars), vs. only \$548 per student in FY19 (in 2019 dollars). In 2007, a school of 300 students would have received \$214,800; in 2019, a school of 300 would receive only \$164,400. Adjusting for inflation, this constitutes a 40% reduction per pupil. (Some School Improvement costs, such as for the City Sprouts program and math coaches in some schools, have been shifted to the district level.)



CPS received more federal and state grant funds. In FY07, CPS was projected to receive \$14.3 million in federal and state grants (in 2007 dollars). In FY19, CPS was projected to receive only \$11.1 million (in 2019 dollars).

The preK-12 student-teacher ratio was lower. In 2007, CPS had 5,599 preK-12 students and 595 teachers, for a total student-teacher ratio of **9.4 students per teacher**, including Special Education, ELL, and career/technical teachers. In 2018, CPS had 6,914 students and 671 teachers, a ratio of **10.3 students per teacher**. **If CPS still had a 9.4-to-1 student-teacher ratio, we would have 65 more teachers than we do currently.**

At the recent roundtable on elementary staffing, teacher comments included:

- “It’s hard for teachers to improve the quality of their practice when they are too overwhelmed. We have more experience than most of our colleagues, and we’re really overwhelmed. So for a new teacher to improve their practice while just keeping up is a big ask.”
- “When half the class needs specialized instruction, it is impossible for the teacher to be able to give all the students what they need.”
- “There are students who need more small group instruction who do not receive it.”
- “I have three differentiated reading groups. If I’m going to be able to meet with all those kids and have a meaningful conversation, I need help to do that.”
- “The paraprofessional ratio has decreased at the same time the expectations on teachers have increased.”

2. Per pupil spending, per *school* spending, and student-teacher ratios: CPS vs. eight Comparison Districts

The table below compares CPS’s per pupil spending with that of eight Comparison Districts chosen by the following criteria: 1) district has 3,000-14,000 students (neither large nor small districts), 2) district spends at least \$17,000 per in-district pupil (i.e. eliminates districts with much less wealth than CPS), and 3) district is located within Route 495 (i.e. cost of living is comparable to Cambridge).¹

Table: Information about CPS and 8 other Comparison Districts.

District	Number of In-District Students	Number of Schools	Percent Economically Disadvantaged	Percent SWD	In-District PPE	Expenditures Per School	Number of Students Per GenEd Teacher	Number of Students Per Total Teachers
Cambridge	6,656	17	30%	22%	\$27,360	\$10,712,480	13.8	10.3
Brookline	7,663	12	11%	16%	\$19,101	\$12,198,205	15.4	12.5
Framingham	8,647	14	35%	22%	\$17,232	\$10,642,371	16.0	13.2
Lexington	7,070	10	6%	13%	\$17,343	\$12,260,887	15.4	12.3
Newton	12,752	22	9%	20%	\$18,121	\$10,503,279	15.8	11.9
Salem	3,761	11	49%	23%	\$18,759	\$6,414,050	13.9	10.3
Somerville	4,873	11	43%	21%	\$18,749	\$8,305,843	13.0	11.4
Waltham	5,456	10	35%	16%	\$19,840	\$10,824,687	14.0	11.1
Wellesley	4,964	9	6%	16%	\$18,585	\$10,251,219	13.8	12.8
Average of 8 Comparison Districts	6,898	12.4			\$18,466	\$10,175,068	14.7	11.9

¹ All per pupil spending information is from DESE. These eight Comparison Districts were chosen because they seemed the most valid comparisons in terms of costs of staffing within Rt. 495, spending capacity of districts, and district size (economies of scale), but the results are very similar when CPS per pupil expenditures are compared with the state average or with the 11 “Comparable Districts” chosen by DESE based on district size and student special populations.

Total per school spending: Since a small-school model like Cambridge's is expensive, it's useful to compare districts in terms of expenditures *per school*. Cambridge has 17 schools, as compared with an average of 12.4 schools for the Comparison Districts. **Cambridge's expenditure per school is \$10.7 million (school- and district-level), as compared with an average expenditure per school of \$10.2 million for the comparison schools. I.e. Cambridge spends only 5% more per school than the Comparison Districts.**

Total per pupil spending: The table above shows that Cambridge spends \$27,360 *per pupil in-district*. By contrast, the average PPE (per pupil expenditure) of the eight Comparison Districts is \$18,466, roughly \$9,000 per pupil less than Cambridge. Cambridge spends 48% more than the average of the Comparison Districts.

Student-teacher ratios: In terms of the student-teacher ratios, **Cambridge's ratios are not substantially lower than those of the Comparison Districts.** Cambridge has roughly 500 General Education teachers (who serve General Education, Special Education, ELL, and career/technical students), 124 Special Education teachers, 21 Career/Technical teachers, and 26 ELL teachers. CPS's student-teacher ratio for GenEd teachers is 13.8 students per GenEd teacher, roughly the same as Salem and Wellesley, and only slightly lower than the Comparison District average of 14.7. The CPS ratio of 10.3 students per *total* teachers is the same as in Salem and only slightly lower than Waltham, Somerville, and Newton.

Distribution of spending by DESE categories: The tables and graphs below provide information about per pupil spending across funding categories determined by DESE. The last two rows show, for each category of spending, the difference between Cambridge's spending and the average of the Comparison Districts both in terms of *dollars* and *percentages*.

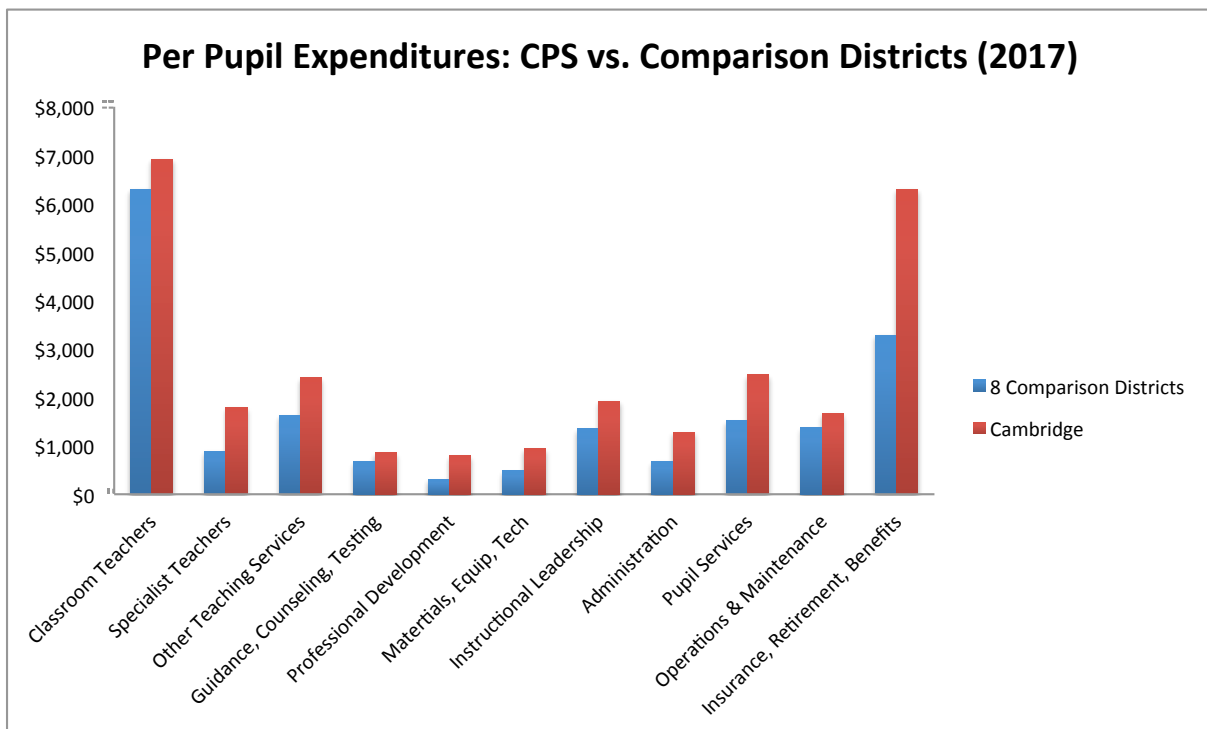
Table: Per pupil spending by DESE category for CPS and 8 Comparison Districts (2017 data)

District	Classroom Teachers	Specialist Teachers	Other Teaching Services *	Guidance, Counseling, Testing	Prof. Dev.	Materials, Equip, Tech	Instructional Leadership	Administration	Pupil Services *	Operations & Maintenance	Insurance, Retirement, Benefits	Total In-District PPE
Cambridge	\$6,917	\$1,801	\$2,407	\$864	\$801	\$935	\$1,919	\$1,279	\$2,470	\$1,673	\$6,295	\$27,360
Brookline	\$6,665	\$1,409	\$1,422	\$672	\$305	\$647	\$1,299	\$883	\$1,056	\$1,434	\$3,309	\$19,101
Framingham	\$4,090	\$2,656	\$1,542	\$507	\$122	\$243	\$1,276	\$800	\$1,738	\$1,064	\$3,194	\$17,232
Lexington	\$6,335	\$426	\$1,905	\$737	\$231	\$412	\$1,450	\$705	\$1,494	\$1,041	\$2,607	\$17,343
Newton	\$6,066	\$772	\$2,345	\$709	\$363	\$268	\$1,179	\$552	\$1,390	\$1,229	\$3,248	\$18,121
Salem	\$7,980	\$558	\$969	\$614	\$138	\$739	\$1,354	\$720	\$1,593	\$1,033	\$3,061	\$18,759
Somerville	\$5,400	\$1,009	\$1,375	\$754	\$463	\$463	\$1,653	\$617	\$1,913	\$2,154	\$2,948	\$18,749
Waltham	\$6,849	\$156	\$1,317	\$617	\$410	\$336	\$1,150	\$663	\$1,485	\$1,519	\$5,337	\$19,840
Wellesley	\$6,974	\$91	\$2,123	\$721	\$424	\$751	\$1,423	\$472	\$1,502	\$1,518	\$2,585	\$18,585
Average of Comparison Districts	\$6,295	\$885	\$1,625	\$666	\$307	\$482	\$1,348	\$677	\$1,521	\$1,374	\$3,286	\$18,466
Difference in dollars	+\$622	+\$916	+\$782	+\$198	+\$494	+\$453	+\$571	+\$602	+\$949	+\$299	+\$3,008	+\$8,894
Difference in percentage	+10%	+104%	+48%	+30%	+161%	+94%	+42%	+89%	+62%	+22%	+92%	+48%

* Other Teaching Services refers to non-teacher educators such as paraprofessionals, librarians, and substitute teachers. Pupil Services refers to non-academic services such as dining and transportation.

For example, though Cambridge spends \$622 more per pupil on classroom teachers than the comparison average, that amount constitutes only 10% more than the Comparison District average for Classroom Teachers. By contrast, CPS spends \$602 more per pupil on administration, but that constitutes 89% more than the Comparison District average for administration, i.e. almost double.

The graph below compares Cambridge's spending with the Comparison District average in dollars. As can be seen, CPS spends between \$200 and \$900 more on every category except staff benefits. **CPS spends roughly \$3,000 more per pupil on staff benefits than the average of the Comparison Districts.** This high expenditure probably results from CPS having a large number of total employees and retirees relative to the number of students, CPS offering more generous benefits packages than other districts, and/or Cambridge paying more aggressively into its employee retirement fund than other municipalities.

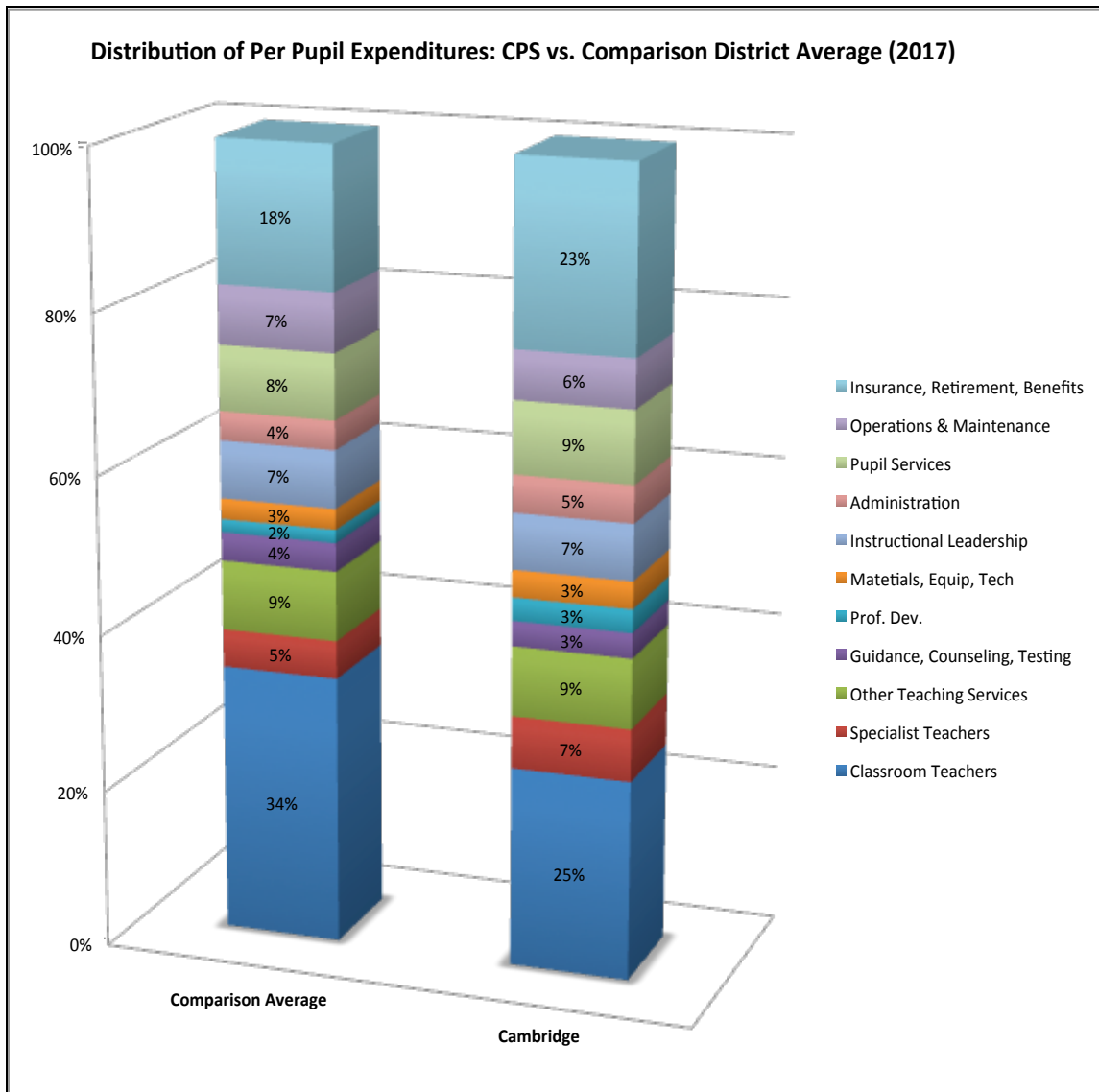


A more important question is: **What does Cambridge spend on each category of spending as a percentage of its total budget? How is Cambridge spending distributed?** The table and graph below both show the distribution of dollars as a *percentage* of the total spending for CPS and the Comparison Districts. For example, the table shows that **Cambridge spends only 32% of its budget on teachers** (25% on classroom teachers, 7% on specialist teachers), as compared with Brookline, which spends 42% of its budget on teachers (35% on classroom teachers, 7% on specialist teachers).

Table. Percent of total per pupil spending spent on each category for CPS and the average of the Comparison Districts.

District	Classroom Tchers	Specialist Tchers	Other Tching Services	Guidance Counseling, Testing	Prof. Dev.	Materials, Equip, Tech	Instructional Leadership	Administration	Pupil Services	Operations & Maintenance	Benefits	Total
Cambridge	25%	7%	9%	3%	3%	3%	7%	5%	9%	6%	23%	100%
Brookline	35%	7%	7%	4%	2%	3%	7%	5%	6%	8%	17%	100%
Framingham	24%	15%	9%	3%	1%	1%	7%	5%	10%	6%	19%	100%
Lexington	37%	2%	11%	4%	1%	2%	8%	4%	9%	6%	15%	100%
Newton	33%	4%	13%	4%	2%	1%	7%	3%	8%	7%	18%	100%
Salem	43%	3%	5%	3%	1%	4%	7%	4%	8%	6%	16%	100%
Somerville	29%	5%	7%	4%	2%	2%	9%	3%	10%	11%	16%	100%
Waltham	35%	1%	7%	3%	2%	2%	6%	3%	7%	8%	27%	100%
Wellesley	38%	0%	11%	4%	2%	4%	8%	3%	8%	8%	14%	100%
Comparison Average	34%	5%	9%	4%	2%	3%	7%	4%	8%	7%	18%	100%

The graph below compares CPS with the average of the Comparison Districts. As can be seen, **the Comparison Districts, on average, spend 52% of their budgets on direct service expenditures:** 34% on classroom teachers, 5% on specialist teachers, 9% on other teaching services, and 4% on guidance, counseling, and testing. **CPS spends only 44% of its budget on direct service categories:** 25% on classroom teachers, 7% on specialist teachers, 9% on other teaching services, and 3% on guidance, counseling, and testing.² **I.e. though Cambridge spends more per pupil, we spend less than other districts in terms of the proportion of the budget that goes toward direct services to students.**



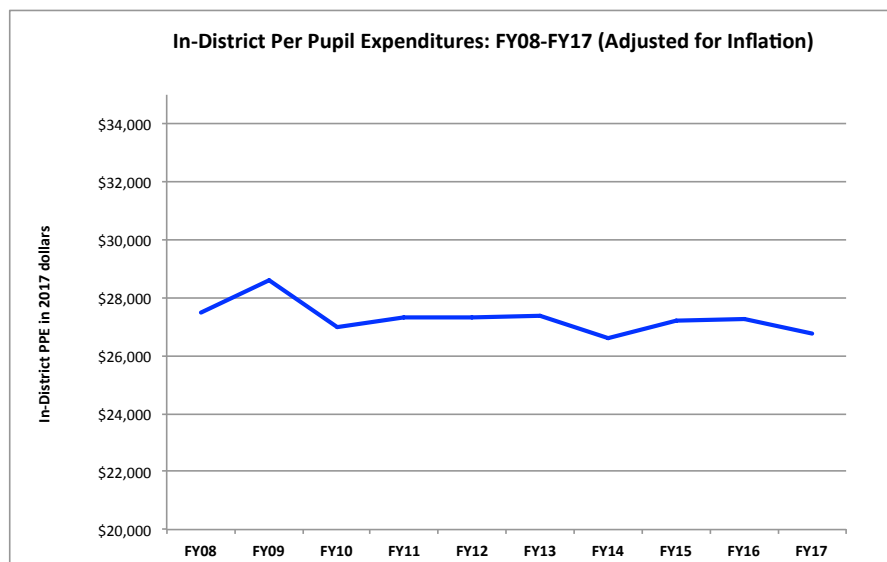
Note that since the CPS budget is almost \$200 million, each percentage point in the Cambridge budget represents approximately \$2 million dollars. **I.e. a reduction of only one percentage point in any spending category would equal a savings of roughly \$2 million.**

² Note that the above results are not just due to CPS's high benefits expenditures. If benefits are excluded from the total, CPS spends 57% of the remaining PPE on direct service categories, vs. an average of 62% for the Comparison Districts.

Flat per pupil spending, 2008-2017, adjusted for inflation: Cambridge's pupil data are available from DESE for 2008 to 2017. According to DESE data on CPS's in-district spending, adjusting for inflation, CPS spent more per pupil ten years ago (in 2008) than currently (in 2017).³ **I.e. at best, in-district per pupil spending has been flat, taking into account the annual inflation that reduces the spending power of dollars.** This flat spending explains why staff positions have been cut (such as paraprofessionals in 2011), or class sizes increased as some costs have increased at rates higher than the rest of the budget. For example, within just the last four years, transportation costs have increased by \$2.9 million, a 48% increase; out-of-district Special Education tuitions have increased by \$3.4 million, a 57% increase. The new middle schools, which opened in 2012-2013, added several million dollars in non-teacher staff salaries and benefits alone (for new principals, vice-principals, clerks, librarians, etc.). It's no surprise, then, that student-teacher ratios and class sizes have increased, given the essentially flat per pupil spending.

Table. In-district per pupil spending in actual and inflation-adjusted dollars.

	Actual Dollars	2017 Dollars
FY08	\$23,895	\$27,490
FY09	\$24,865	\$28,598
FY10	\$24,093	\$27,001
FY11	\$24,780	\$27,325
FY12	\$25,495	\$27,314
FY13	\$25,953	\$27,368
FY14	\$25,627	\$26,605
FY15	\$26,183	\$27,206
FY16	\$26,583	\$27,248
FY17	\$26,778	\$26,778



³ Inflation-adjusted spending was calculated using the U.S. Bureau of Labor Inflation Calculator for the Consumer Price Index for Urban Consumers. According to their calculations, \$100 in 2008 had the buying power of \$115 in 2017.

3. Increase in district-level positions:

Between FY11 and FY19, CPS appears to have added 12.7 district-level positions to the General Fund budget under the categories of: Academic Coordinators & Directors (+5.0), and Managers & Professional Support Staff (+7.7), for a 32% increase in FTEs in these two job categories combined. (These do not include the school-level positions added as a result of the Innovation Agenda.) Of these 12.7 positions added to the General Fund, 5.6 appear to have been grant-funded in FY11; i.e. were originally funded by grants but were then moved to the General Fund sometime between FY11 and FY19. The other 7.1 additional positions appear to have been funded via the General Fund from their inception. CPS also added, in FY19, a 0.40 FTE Family and Community Engagement Coordinator, which is currently grant-funded. (This position is not included in the table below, since it is not funded in the General Fund.) The cost of 12.7 additional positions, with benefits, would be roughly \$1.3 million or more.

Table. Number of FTEs in district-level administration positions funded by General Funds, FY11 vs. FY19.

General Fund	FY11*	FY19*	Increase
Academic Coordinators/Directors	10.0	15.0	+ 5.0
Managers/Professional Support Staff	29.8	37.5	+ 7.7
Total	39.8	52.5	+ 12.7
*FY11 information from FY12 budget, pg. 38. FY19 information from FY19 budget, pg. 87.			

4. The need for and cost of small schools

Cambridge is unusual in having many small elementary and middle schools (n=16). The average size of Cambridge's 12 elementary schools is only 321 students, as compared with a statewide average of 430 students per elementary school. The four middle schools, all adjoined to elementary buildings, average less than 300 students each, as compared with a state average of 600 students per middle school. Even our largest elementary schools, such as Baldwin (370 students) and Cambridgeport (350 students), are below average in a statewide comparison. **Having small schools is not by choice.** Most of Cambridge's school buildings are located in dense residential areas where there is no room for expansion. Most of the larger schools, Tobin, ML King, Peabody, and King Open, have two schools sharing one building. All schools are currently at capacity. **Having many small schools, however, is expensive, particularly in a high-cost district such as Cambridge.** Each building has its own maintenance, custodial, security, utilities, and transportation costs, and many staff positions are assigned on a one-per-school basis, such as principals, librarians, school nurses, art teachers, instructional coaches, and clerks. CPS does, in some cases, have staff who work in two schools, but this staffing model does not work well because of the lack of continuity both for the staff person and for the schools.

A good cost comparison can be made between the Cambridgeport School, one of the largest JK-5 schools, and the Haggerty School, one of the smallest. The two schools have almost identical demographics, but very different per pupil costs.

Table. Per pupil expenditures at the school-level for the Haggerty and Cambridgeport schools.

	Enrollment	% Special Education	% ELL	% FR Lunch	Total School-Budget	Per Pupil Expenditures
Haggerty	257	19%	10%	36%	\$5,234,416	\$20,367
Cambridgeport	342	18%	5%	37%	\$5,409,258	\$15,455

As can be seen, it costs almost the same amount of money, total, to run the Cambridgeport School with 342 students as to run the Haggerty with only 257 students—slightly more than \$5 million at the school level. (These expenditures do not include district-level costs or transportation.) ***For this reason, there is almost a \$5,000 difference in the per pupil cost of Haggerty vs. Cambridgeport.***

Comparing costs at the Morse School and King Open shows that even an enrollment difference of fewer than 50 students can make a difference in per pupil costs.

Table. Per pupil expenditures at the school-level for the Morse and King Open schools.

	Enrollment	% Special Education	% ELL	% FR Lunch	Total School-Budget	Per Pupil Expenditures
Morse School	300	27%	9%	46%	\$7,028,822	\$23,429
King Open	337	26%	8%	45%	\$7,062,532	\$20,957

Again, both schools cost roughly \$7 million at the school level (higher than Haggerty and Cambridgeport because of the higher number of Special Education and FR Lunch students), but Morse costs almost \$2,500 more per pupil than King Open because it has fewer students.

As noted earlier, looking at school- and district-level costs, CPS spends about the same *per school* as the average of the Comparison Districts.

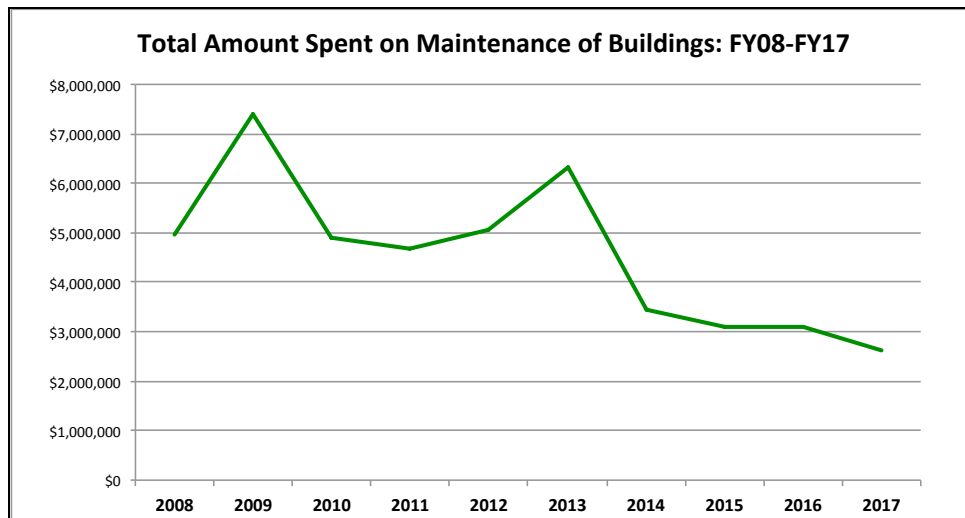
5. Expenditures on building maintenance

CPS school buildings, which are used by the school department and, to some extent, by the rest of the city, vary in age and condition. In the 1990s, renovations or rebuildings were conducted for the Morse, Baldwin, Haggerty, and Peabody. **There were then no major renovations or rebuildings for roughly a decade between the completion of the Peabody renovation in 2001 and the beginning of the CRLS renovation in 2010.**

Data from DESE show that Cambridge’s spending on school building maintenance declined from a high of \$5-7 million in 2008 and 2009 to a low of \$2.6-3.0 million in 2016 and 2017, even without taking inflation into account. (Data is not yet available for 2018.)

Table. CPS annual maintenance expenditures, 2008-2017 (not adjusted for inflation)

	Maintenance of Buildings Total	Maintenance of Buildings Per Pupil
2008	\$4,970,107	\$879
2009	\$7,396,453	\$1,288
2010	\$4,906,772	\$828
2011	\$4,675,912	\$783
2012	\$5,072,830	\$832
2013	\$6,320,763	\$1,022
2014	\$3,441,458	\$541
2015	\$3,088,932	\$481
2016	\$3,094,510	\$475
2017	\$2,616,065	\$393



Last year, the CPS Operations Department estimated that the schools need \$132 million in basic repairs over the next 5 years, not including the rebuilding of the Tobin School. One teacher testified at last year’s budget hearing:

“In our five oldest school buildings and sometimes even in the newer ones, we have too many spaces which, at times at least, are not fit for human habitation, and yet are used daily for instructional spaces. I’m talking about classrooms, libraries, specialists rooms, gyms, where students often sweat in the 90-degree heat, trying, often in vain, to concentrate on academics....The damage being done is potentially immense.”

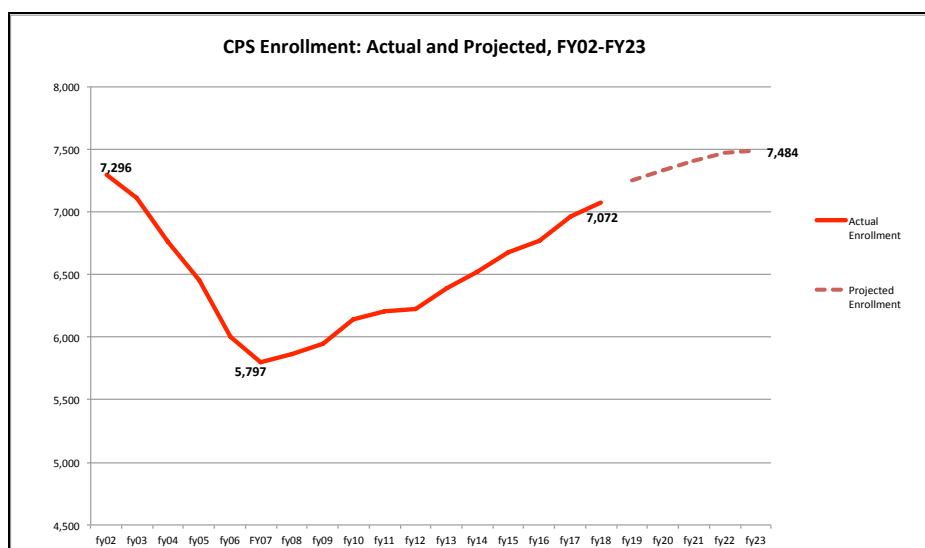
Fortunately, air conditions have been installed in some or all of the older buildings. Other maintenance needs have not been met. This deferred maintenance has implications for student learning and well-being. When DESE conducted a district review of CPS in 2014, they wrote in their report:

Some of the district's schools are not as bright, clean, accessible, well maintained, and quiet as others, and **are less conducive to student attention and serious learning** as a result. The long timeline for renovating these buildings will require ten or more years for them to be brought up to expected standards, and **this will require the attendance of almost a generation of Cambridge's children in spaces that are not equitable or supportive of the excellent education to which the district aspires.** (My emphases.)

Some of the problems noted by DESE have been fixed, but some have not. This fall, for example, a window fell out at the Cambridgeport School and landed on a child who, fortunately, was not injured.

6. Budget history: per pupil and total increases in the CPS budget

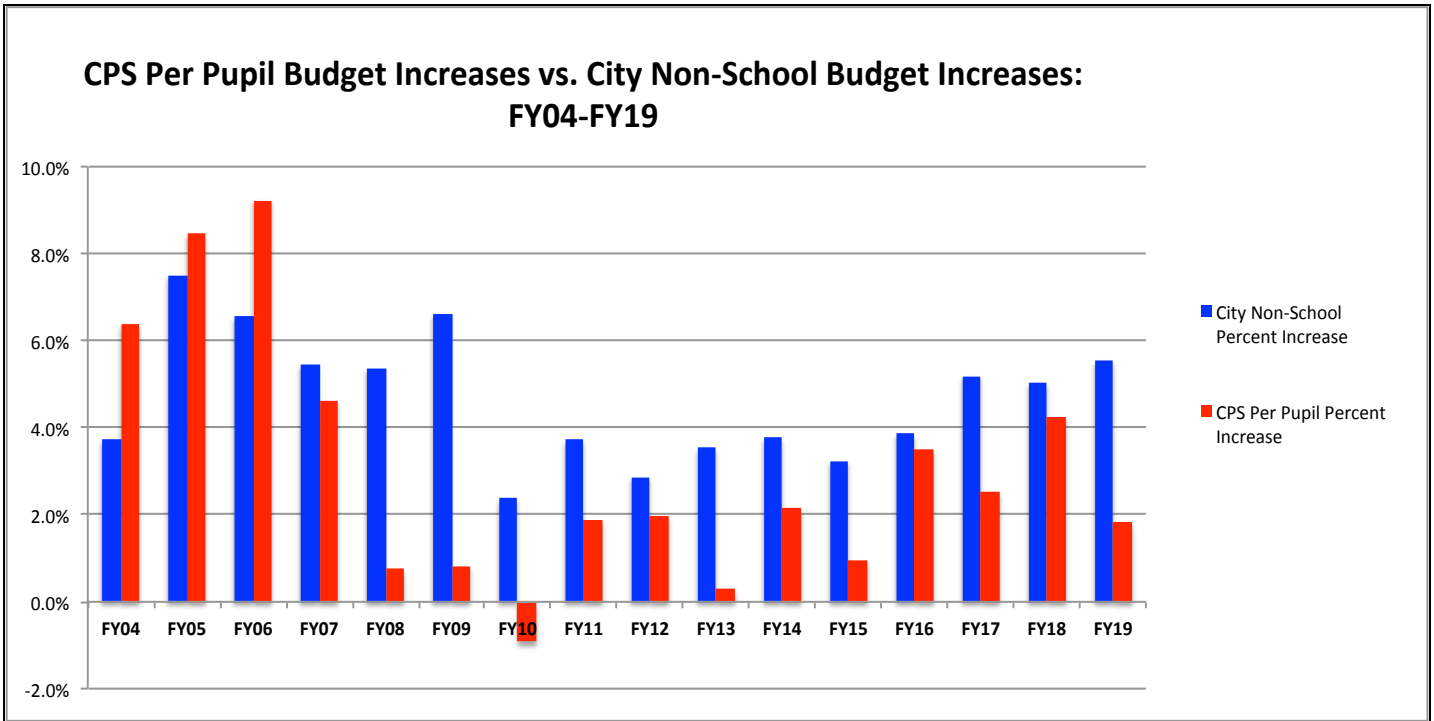
Enrollment fluctuations: In order to understand CPS's budget changes over time, it's important to understand our enrollment changes, which have been dramatic. Between 2002 and 2007, enrollment decreased by 20% (a reduction of 1,500 students in only 5 years). Then, between 2007 and 2018, enrollment *increased* by 22% (an increase of 1,275 students in 11 years). Enrollment is projected to increase by another 400 students by FY23.



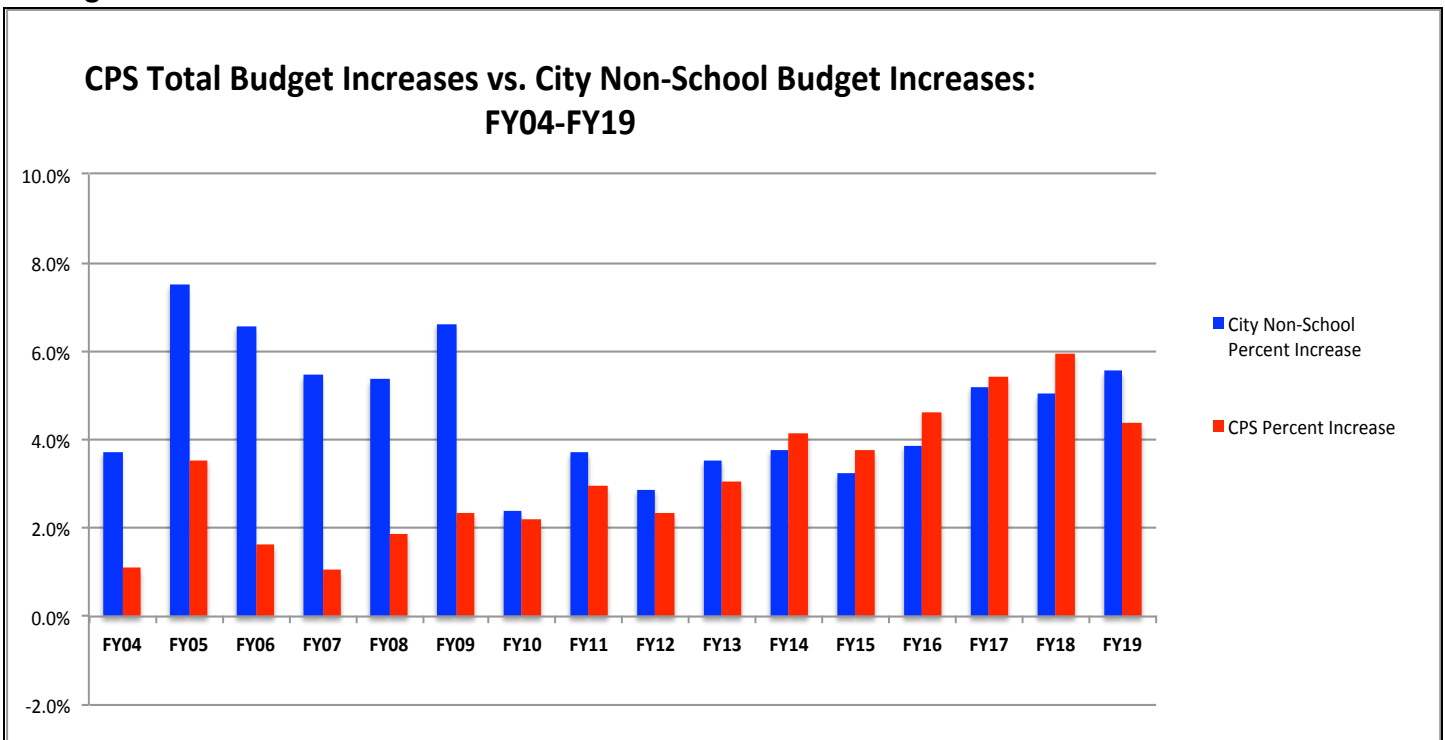
Annual percent increases: The graphs below shows the percentage increase in the CPS budget from FY04 to FY19 as compared with the City's non-school budget.⁴ Graph 1 shows the increase in the *per pupil* budget; Graph 2 shows the increase in the *total* budget. I.e. Graph 1 takes into account increases and decreases in enrollment relative to the increase in budget.

⁴ All City-CPS budget comparisons are based on data from CPS and City Adopted Budgets.

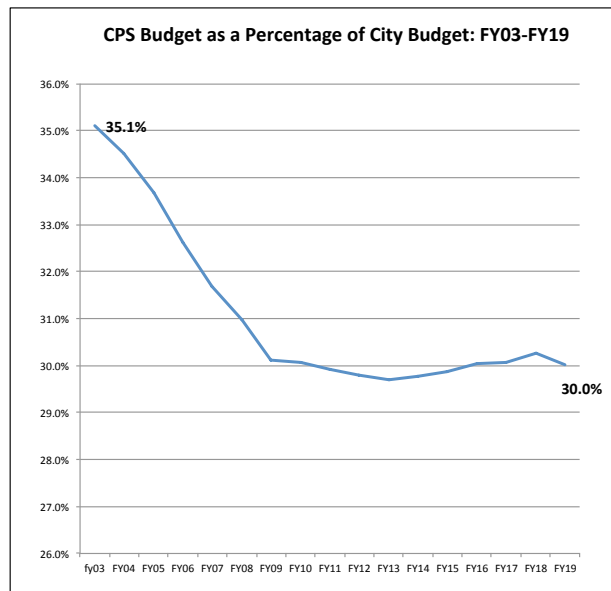
Per pupil budget increases: For the past 13 years, CPS's per pupil budget increases have been smaller than budget increases for the rest of the city. Last year's per pupil increase of 1.8% was the second smallest per pupil increase in the past six years.



Total budget increases: CPS's total budget increases have been smaller than the rest of the city's budget increases for 11 of the past 16 years. CPS's total budget increases were particularly small from FY04-FY09, when they averaged only 1.9% vs. a non-school city average of 5.9%.



CPS as a percentage of the City's total budget: As a percentage of the total City budget, the CPS budget has decreased from 35% in 2003 to only 30% in 2019. This decrease occurred primarily between 2003 and 2009.



7. Alternative classroom staffing/class size models

As CPS examines research on the achievement effects of reducing class sizes or student-educator ratios, it's instructive to consider staffing models used in three of Cambridge's private schools, which serve predominantly advantaged populations. Increasingly, students who attend private schools in Cambridge from grades K-8 have been enrolling in CPS for high school, where they are essentially in competition with CPS's K-8 graduates for some of the more popular extracurricular opportunities and for acceptances to selective colleges.

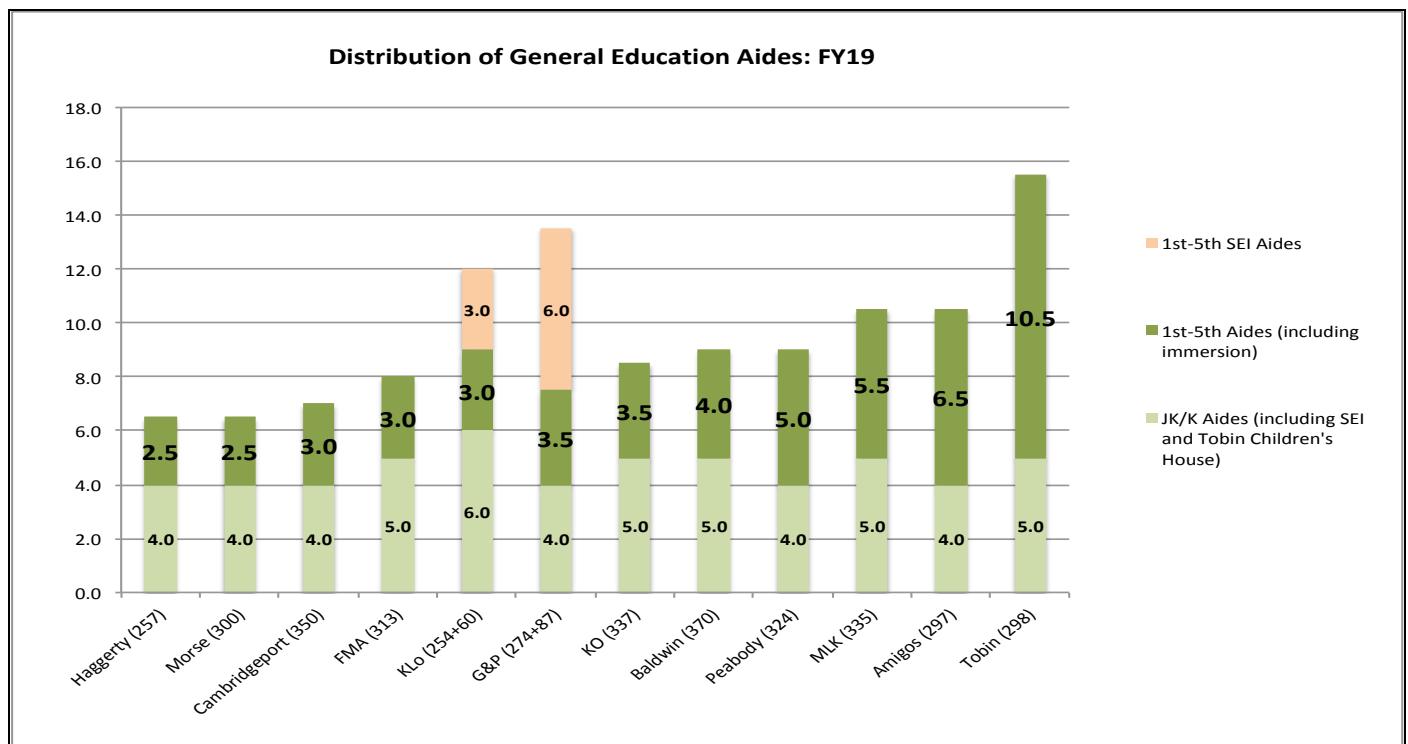
Table. Staffing models at three Cambridge private schools

	K-2 nd	3-5 th	Middle School	High School
BB&N	20 students per homeroom. 10 students per Math, ELA, and specialty courses (art, computer, etc.)		Average class size = 13 students	Average class size = 11.7 students
Shady Hill	22 student per class with 2 teachers	16 student per class with one teacher	16-18 students per class with one teacher	
Friends School	Average class size, K-8 = 12-13 students			

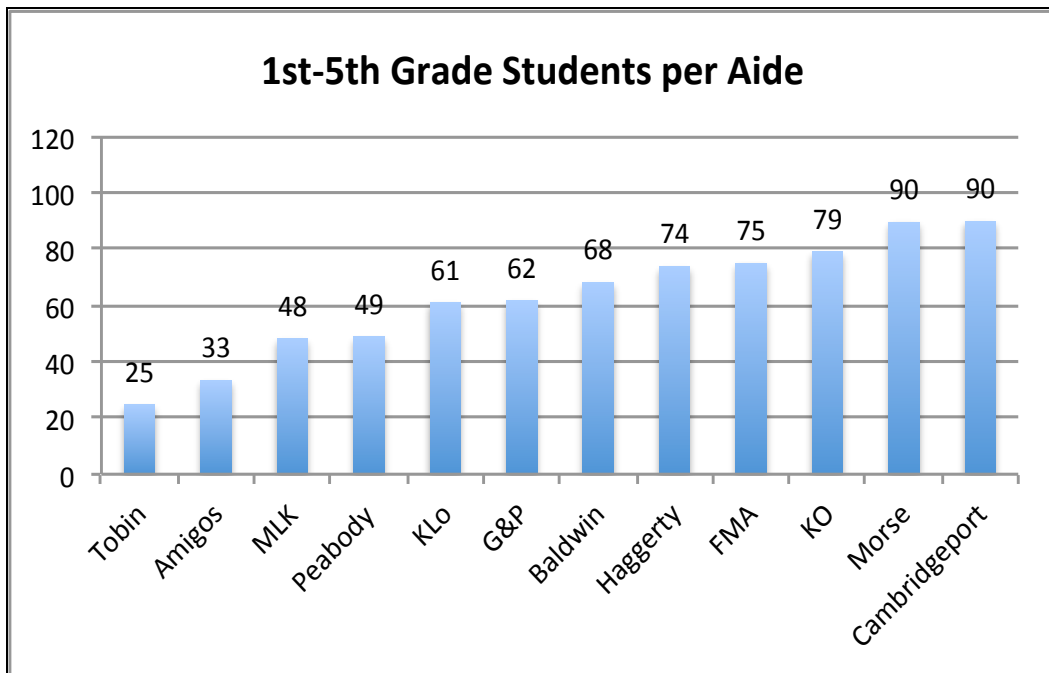
8. Staffing equity across schools: Paraprofessionals and Interventionists

General Education Aides: General Education aides, available to assist students and the teacher in the classroom, are apportioned by a formula: 1 aide per JK/K classroom plus one hour of aide time per 13 students (the equivalent of 1 aide FTE per 78 students) and 1 aide per SEI 1st-5th grade classroom. Extra aides are provided for Montessori (1 aide per classroom) and Amigos (3 extra FTE aides), even though these are otherwise considered General Education classrooms. Additionally, any school with a 1st grade cohort of 46 students or more receives an extra aide. The graph below shows, for the FY19 budget, the number of General Education aides per school for grades 1-5 (immersion and non-immersion), JK/K, and SEI. (Tobin Children’s House aides are included as JK/K aides.)

As can be seen, the 12 schools receive 4-6 aides for their JK/K classrooms (including SEI JK/Ks), and G&P and KLo receive extra aides for their 1st-5th grade SEI classrooms. Beyond that, schools receive between 2.5 and 6.5 aides for General Education classrooms, grades 1-5, except Tobin, which receives 10.5 aides for grades 1-5.



The graph below shows the ratio of General Education aides per 1st-5th grade non-SEI student. Because of the additional aides given to some schools but not others (i.e. some schools follow the 1-aide-hour-per-13-students formula, some do not), **the ratio of students per General Education aide for 1st-5th grade ranges from a low of 25 students per aide to a high of 90 students per aide. (Including immersion but not SEI),**



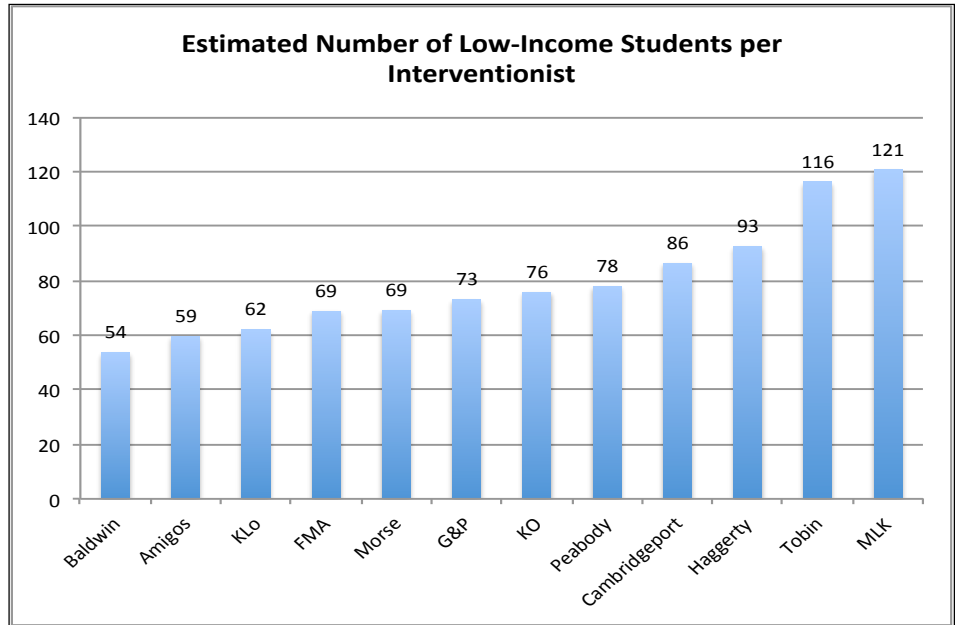
Intervention teachers per low-income student: Interventionists are assigned one per school. Title 1 teachers also serve as interventionists and are assigned to the Title 1 schools, which are determined, primarily, by the percentage of FR Lunch students in each school. In addition, there are extra interventionists assigned to schools based on need.⁵ The number of interventionists per school ranges from 1 to 3. The table and graph below show the number of interventionists/Title 1 teachers per school and the estimated number of low-income (non-SEI) students per interventionist at each school.⁶ (Amigos is assigned 2.5 interventionists, but it is assumed that 1.0 interventionist is for the Amigos middle school program.)

⁵ Typically, students who are not on IEPs (i.e. not in Special Ed.) receive supplementary services through an intervention teacher, while students on IEPs may receive supplementary services through a Special Education teacher. Special Education teachers are not included in this analysis.

⁶ Obviously, many Free/Reduced Lunch students do *not* require intervention service, and some Paid Lunch students *do* require reading intervention. But 62% of FRL students, 3rd-8th, scored below Meets Expectations in ELA and 71% in Math, vs. only 28% and 33% of Paid Lunch students, so income is a good proxy for academic need and the primary rationale for apportioning extra Title 1 resources to lower-income schools.

Table: Number of low-income non-SEI students and interventionists per school, FY19.

	Estimated Number of Low-Income Non-SEI Students	Number of Interventionists
Amigos	89	1.5
Baldwin	107	2.0
Cambridgeport	130	1.5
FMA	207	3.0
G&P	110	1.5
Haggerty	93	1.0
KLo	155	2.5
KO	152	2.0
MLK	121	1.0
Morse	138	2.0
Peabody	117	1.5
Tobin	116	1.0



As can be seen above, the ratio of low-income students per interventionist ranges from an estimated low of 54 low-income students per interventionist at Baldwin to more than an estimated 100 low-income students per interventionist at Tobin and MLK.

9. Summary

- Data for Black/African American CPS students are distressing if not devastating. There has been little increase in 3rd grade ELA scores or 8th grade Math scores (CPS’s two Key Indicators for academic achievement) for Black students over the past 12 years; current MCAS scores show that more than half of all Black students in 3rd-8th grade are considered below expectations in ELA and/or Math; and a large number of Black 9th graders fail at least one class every year. Almost one-third of Black students are enrolled in Special Education; almost one-third of Black high school students are chronically absent; and a high percentage of Black middle and high school students report that they do not have a trusted adult in their school. A high percentage of college-going Black CRLS graduates attend 2-year colleges rather than 4-year colleges; and a high percentage of black students who enroll in public Massachusetts colleges are required to take one or more remedial courses.
- CPS schools are more poorly staffed than in the past. Class sizes in the elementary, middle, and high school grades are larger than in the past; there are higher student-teacher ratios; and fewer paraprofessionals per student. CPS schools currently have less discretionary funding, and CPS receives fewer federal and state grant funds than in the past.

- By necessity, CPS elementary and middle schools are substantially smaller than schools in other Massachusetts districts, which accounts for some of the high per pupil costs. CPS spends roughly the same amount *per school* as Comparison Districts, but far more *per pupil*.
- Though CPS spends 48% more per pupil than the average of eight Comparison Districts, it only spends 10% more on classroom teachers. CPS spends far more on employee benefits than most of the Comparison Districts. Cambridge spends less of its budget on direct services to students (teaching, guidance, counseling) than do Comparison Districts: 44% for Cambridge vs. 52% for Comparison Districts.
- Adjusting for inflation, the CPS per pupil expenditure has been roughly the same since 2008.
- CPS's student-teacher ratio is not substantially lower than similar districts within Route 495, particularly its ratio of students per General Education teacher. Its overall student-teacher ratio is the same as the Salem Public Schools and only slightly lower than in Waltham and Somerville.
- CPS has added 13 district-level professional positions since 2011, not including school-level additions associated with the Innovation Agenda.
- CPS did not renovate or rebuild any schools between 2001 and 2010. Cambridge's expenditure on school building maintenance has declined over the past decade.
- CPS enrollment decreased by 20% between 2002 and 2007, and increased by 22% between 2007 and 2018. It is projected that CPS will have gain 400 more students by 2023.
- The CPS per pupil budget increases have been smaller than the non-school city budget increases for the past 13 years. Last year's 1.8% per pupil increase was the second smallest in the past six years.
- The CPS budget has decreased from 34% of the City's budget in the early 2000s to only 30% in 2019.
- At least three of the private schools in Cambridge have substantially smaller class sizes and/or student-teacher ratios than CPS schools.
- There is wide variation across the elementary schools in the ratio of students per General Education paraprofessional, ranging from only 25 students per paraprofessional at Tobin to 90 students per paraprofessional at Morse and Cambridgeport.
- There is wide variation across the elementary schools in the ratio of low-income students per intervention teacher, ranging from a low of 54 low-income students per interventionist at the Baldwin to a high of 121 students per interventionist at the King School.