

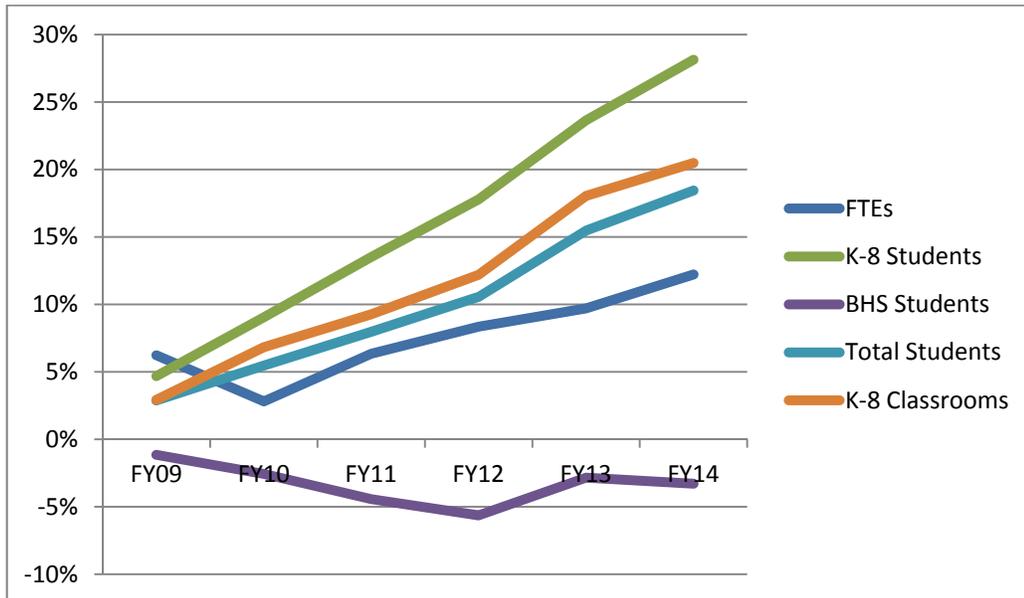
School Programs Task Force of the Schools Subcommittee  
 Report of Fact Base and Considerations  
 September 8, 2014

**I. OVERALL FACT BASE**

**1. Budget performance since the 2008 Override**

The rise in enrollment and greater budgetary pressure in the Public Schools of Brookline (PSB) have been particularly acute since the 2008 Override. The foremost driver of this budget pressure is a substantial increase in student enrollment. Overall K-8 enrollment has increased by 35% since fiscal year 2004 (FY04) and by almost 30% since FY08. New kindergarten classes have risen by 50% from 406 in FY04 to 630 in FY14. This increase has been met with a 20% increase in K-8 classrooms.<sup>1</sup>

*Exhibit:* PSB Growth, FY09-FY14



Even without the recent enrollment growth, however, the School budget is also faced with constant structural deficit pressure due to new educational mandates, special education costs and the increases in three components of personnel costs—collective bargaining salary increases, the “steps and lanes” pay structure, and healthcare costs. The 2008 OSC Report observed the difficult budget dynamic for schools and recommended annual increases to compensation and benefits to a level considered sustainable over time of 3.75%. Since the 2008 override, the PSB has largely lived within this sustainability target as it relates to health care costs and wage inflation. Also note that since 2008, the total general fund revenues available to the Town and School budgets have increased from \$198.9 million to \$236.1 million, a compound annual increase of 2.9%.

<sup>1</sup> In 1981 enrollment was approximately 6100 students overall and then declined to lows two decades later.

Of particular importance was implementing, after successfully negotiating with the town's unions, the recommendation to move to the State's Group Insurance Commission ("GIC"). Since the 2008 override, the town's subsequent negotiation to enter into the GIC with town employees provided dramatic savings. Remarkably, town-wide health care costs in FY14 are approximately equal to FY10, the year before entering the GIC. Indeed, the FY15 inflation figure from the GIC is only 1%, the lowest in ten years. Given the fiscal blueprint laid out in 2008, health care costs can be said to have lived within the sustainability benchmark, and then some.

Personnel costs have grown significantly since the 2008 override. The PSB's personnel cost drivers can be broken down into two categories: salary-related growth (steps and lanes and collectively bargained increases) and staffing increases. The PSB has generally kept annual salary growth at or below the sustainability level identified by the 2008 OSC. According to the PSB, the last collective bargaining agreement provided for annualized salary increases of 2.1%, whereas the previous contract provided for 1.1% annually. Since contracts can be back-loaded (i.e., include higher percentage increases in later years of the contract and potentially extend into the first year of the next contract with a "tail"), reviewing the annual average growth is more appropriate when reviewing long-term fiscal sustainability. The cost of annual step and lane increases total approximately \$1.1 to \$1.2 million annually. On the other hand, retirements offset some of this increase as higher paid teachers are replaced by junior, lower-paid, ones. This retirement savings is significant representing annual savings of \$550k to \$750k over the past 3 – 4 years, generating a step and lane cost, net of retirement, of approximately \$650k annually. This represents an approximate 1% increase over the roughly \$60 million in personnel costs for the PSB.

In addition, active cost management (including implementing several efficiencies and cost cuts) and one-time infusions of funding, such as ARRA funding in 2009-2010, have enabled PSB to balance the budget in recent years. The Superintendent estimates over \$1.5 million in efficiencies over a 10-year period, which include freezing positions and eliminating others, ending the practice of hiring retirees, competitive contracting of custodial positions, consolidation of positions in the library and technology support, among others.

As a result, average per pupil inflation-adjusted spending (including CIP) has declined since the 2008 override. Adjusted for the consumer price index, spending was \$17.4k per student in FY 2006, \$17.9k per student in FY 2009 (increased following the override, which added the Elementary World Language Program and extended the school day), and fell to \$16.9k per student in FY 2014.

## **2. Budget projections**

PSB is forecasting a growing budget deficit in fiscal year 2016 (FY16) and beyond. These budget projections are subject to much uncertainty due to many of the same factors highlighted above, including:

- Kindergarten enrollment in FY15 and beyond (current projections assume Kindergarten enrollment of 630 students; each additional 20 students has an incremental short run cost of approximately \$220k)
- Collective Bargaining contract up for negotiation in FY15 (current projections assume 1% annual salary increase; the annual cost per additional 1% is \$740-900k)
- Healthcare cost increases (current projections assume 5% increase in healthcare costs; the annual cost per 1% is \$240k)
- Special Education costs (current projections assume 15.3% of PSB resident enrollment are special education students served in-district by PSB; if the percentage increased to 16.3% the annual cost change is approx. \$1 million)
- State Aid funding amounts (see also the OSC Revenue Subcommittee memo on the historic sensitivity of revenue projections)

Exhibit: PSB budget projections and estimated annual change in budget shortfall<sup>2</sup>:

|   | FY15                | FY16                 | FY17                 | FY18                 | FY19                 | FY20                 |
|---|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>GENERAL FUND</b>                             |                     |                      |                      |                      |                      |                      |
| TOWN APPROPRIATION INCREASE                     | \$3,970,217         | \$2,517,390          | \$2,678,839          | \$2,618,510          | \$2,649,517          | \$2,421,051          |
| CIRCUIT BREAKER GROWTH                          | \$120,000           |                      |                      |                      |                      |                      |
| MATERIALS FEE                                   | \$52,000            |                      |                      |                      |                      |                      |
| ONE-TIME FUNDING                                | \$850,000           |                      |                      |                      |                      |                      |
| NET REVENUE GROWTH                              | \$4,792,217         |                      |                      |                      |                      |                      |
| <b>BPS TOTAL APPROPRIATION</b>                  | <b>\$90,630,150</b> | <b>\$93,147,540</b>  | <b>\$95,824,379</b>  | <b>\$98,442,889</b>  | <b>\$101,092,408</b> | <b>\$103,513,457</b> |
| GROWTH  | 5.56%               | 2.78%                | 2.87%                | 2.73%                | 2.69%                | 2.39%                |
| <b>EXPENDITURE CHANGE</b>                       |                     |                      |                      |                      |                      |                      |
| SPECIAL EDUCATION                               | \$521,501           | \$750,000            | \$775,000            | \$800,000            | \$825,000            | \$850,000            |
| STEP INCREASES/NET RETIREMENT                   | \$850,000           | \$675,000            | \$700,000            | \$750,000            | \$775,000            | \$775,000            |
| PROGRAM CATCH-UP                                | \$472,000           | \$2,289,067          | \$0                  | \$0                  | \$0                  | \$0                  |
| GRANT CONTINGENCY                               | \$70,000            | \$180,000            | \$170,000            | \$190,000            | \$190,000            | \$190,000            |
| COLLECTIVE BARGAINING* @ 1% (Plus Tail in FY15) | \$1,467,469         | \$724,200            | \$738,684            | \$768,527            | \$783,898            | \$799,575            |
| TECHNOLOGY                                      | \$575,000           | \$803,808            | \$566,661            | \$600,000            | \$161,294            | \$99,242             |
| ENROLLMENT                                      | \$870,000           | \$ 682,263           | \$ 1,362,330         | \$ 1,424,785         | \$ 1,330,347         | \$ 473,631           |
| ENHANCEMENT                                     | \$358,750           | \$1,345,172          | \$895,919            | \$385,488            | \$125,495            | \$181,501            |
| CONTINGENCY/OTHER                               | \$0                 | \$250,000            | \$275,000            | \$300,000            | \$300,000            | \$300,000            |
| PLAN/OPEN OLS                                   | \$115,000           | \$679,637            |                      |                      | (\$794,637)          |                      |
| <b>EXPENDITURE CHANGE:</b>                      | <b>\$5,099,720</b>  | <b>\$8,358,947</b>   | <b>\$5,483,594</b>   | <b>\$5,218,798</b>   | <b>\$3,696,397</b>   | <b>\$3,668,949</b>   |
| <b>TOTAL REDUCTIONS</b>                         | <b>\$307,503</b>    |                      |                      |                      |                      |                      |
| <b>NET SURPLUS/SHORTFALL:</b>                   | <b>\$0</b>          | <b>(\$5,841,557)</b> | <b>(\$2,806,755)</b> | <b>(\$2,600,288)</b> | <b>(\$1,046,880)</b> | <b>(\$1,247,898)</b> |

The PBS budgeted approximately \$2.6 million over the next three years to staff new classroom teacher positions to address the expected enrollment growth at the K-8 schools and the high school. Maintaining small class sizes is among the highest priorities of the PSB and funding has generally been directed toward classroom instruction during the recent enrollment surge. While K-8 average class sizes have increased (from 19.87 students/section 10 years ago to 21.14 today), they have with few exceptions stayed within PSB class size policy limits. PSB budget projections maintain K-8 average class size at approximately 21 students and in the high school it maintains the ratio of 14.2 students per teacher FTE.

PSB also proposed additional expenditures of \$831k in FY15 non-classroom program supports. This amount is a substantial reduction from earlier proposals of \$3.24 million in FY15. Of that initial amount, \$1.47 million investments were intended to “catch up” on support and administrative staff positions that have been relatively underfunded as enrollment has increased (reduced to \$472k). It also proposed \$1.77 million in programmatic improvements (reduced to \$359k). PSB invested \$575k in technology in FY15, reduced from its previous FY15 spending proposal of \$1.15 million. It projects an additional increase of \$2.1 million ramped up over the next 5 years to fund further investments in technology.

### 3. OSC approach

Within this context of an operating deficit, the OSC Schools Subcommittee sought to analyze and understand the biggest cost drivers of the school budget and the cost implications of PSB’s operating choices. It is also critical to highlight that enrollment growth is outstripping the capacity of PSB’s facilities. While the planned capital investments in school expansion and renovation were reviewed by the OSC Capital Subcommittee, the reality that operating choices such as class size and programs that increase student population may also have substantial capital impacts drove this Subcommittee to review the cost implications of those choices.

<sup>2</sup> This forecast was published in the PSB FY15 Preliminary Budget. The Educational Technology plan and budget have been updated since this forecast was prepared, and the new technology estimates are reflected in Section 6 of this report.

To do this analysis, the Schools Subcommittee divided the work into two separate task forces:

- *School Programs Task Force* analyzed the overall school budget, including personnel costs and programmatic choices that affect the entire school population such as staffing decisions, class size and technology. Members included: Beth Jackson Stram (Chair), Lisa Serafin Sheehan, Jim Stergios, and Tim Sullivan.
- *Population and Special Education Task Force* analyzed two separate issues: programmatic choices that increase the size of the PSB population (such as Materials Fee, METCO, BEEP, and others), and PSB's approach to Special Education. Members included: Cliff Brown (Chair), Chad Ellis, Janet Gelbart, Michael Glover, Carol Kamin, and Lee Selwyn.

## II. SUMMARY OF FINDINGS AND OPTIONS FOR CONSIDERATION BY THE OSC

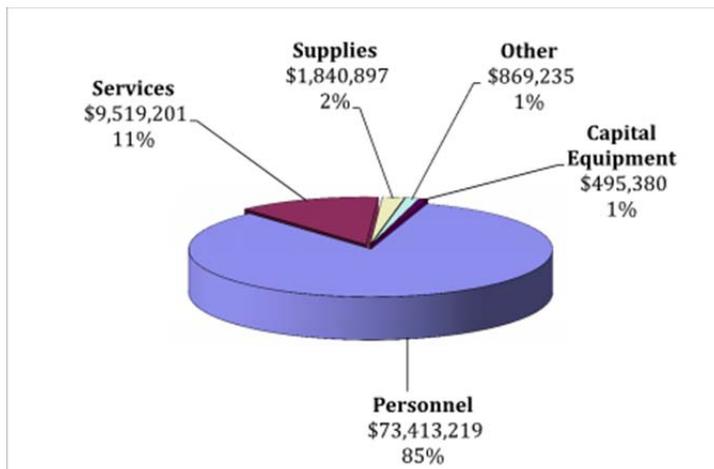
The School Programs Task Force identified seven areas for detailed review based on size relative to the School budget or on potential options for generating budget savings that could be implemented within the existing constraints of the collective bargaining agreement. A summary of each of these areas follows. It is not a set of recommendations, but rather a set of options and analyses designed to highlight for the School Committee and the public the cost implications of PSB's cost choices and priorities, and collective bargaining contracts. Each option ought to be considered not just in isolation but as part of a package, in terms of the potential combined effect on financial sustainability, educational impact, and impact on teacher recruitment/retention.

### 1. Manage Personnel Costs to Sustainable Levels

#### **Fact Base**

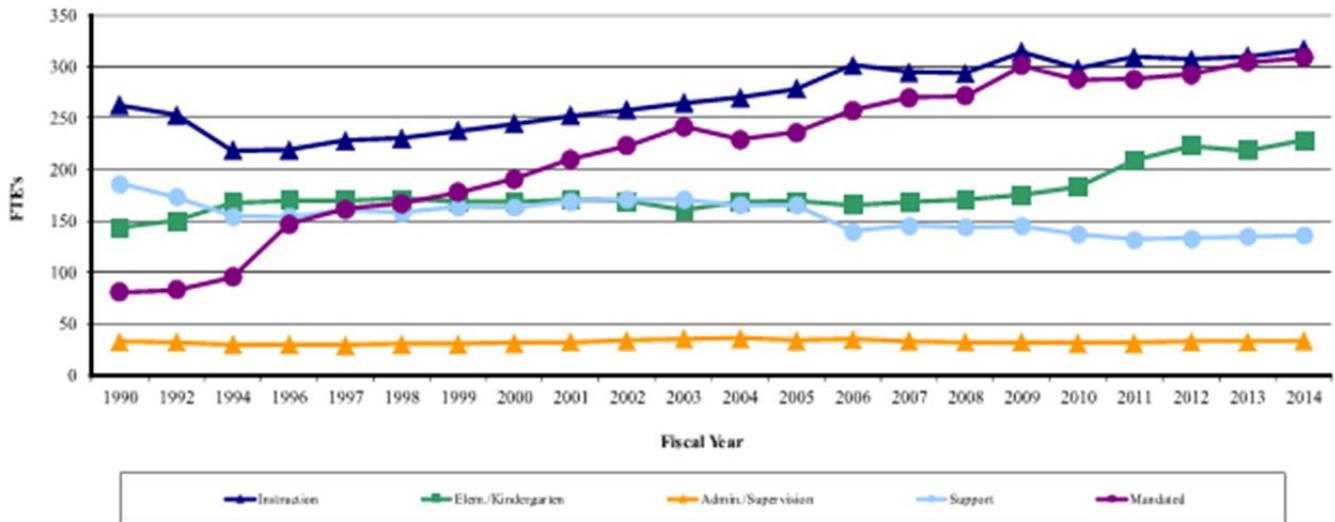
The personnel costs embedded in the collectively bargained teachers' contract represent the most significant portion of PSB's budget, and must be renegotiated in FY15. The personnel budget for FY14 is \$73.4 million, approximately 85% of the of \$86.1 million General Fund budget.

*Exhibit:* General Fund Budget, Total F14, by expense type



Personnel costs continue to be an increasing portion of the budget, reflective of increased enrollment. As student enrollment has increased the town has hired additional classroom teachers for the lower grades, instructional teachers for the upper grades and professionals associated with mandated programs. At the same time administration and support staff has stayed flat or decreased.

Exhibit: Number of PSB staff by category, FY09-FY14



As noted above, there are three primary components of personnel costs—collective bargaining salary increases, the “steps and lanes” pay structure, and healthcare costs and other benefits.

*Salary increases*

Most school personnel costs are subject to collective bargaining agreements and in Brookline are negotiated as part of three separate contracts. The largest agreement (Unit A) covers the classroom teachers and the two others (Unit B and Unit C) include support professionals. At \$55 million, the cost of salaries to support classroom teachers (Unit A) represents approximately 75% of the total personnel costs. The teachers’ contracts are negotiated every three years. FY14 is the final year covered under the current three year contract. Generally management, directors and some administrative jobs are not collectively bargained.

The current Unit A contract was back loaded in order to deal with past deficits. The latest FY15 projections from PSB assume a salary increase of 1% plus a tail from the prior contract for an annual increase of \$1.45 million. As noted above, future budget projections assume the next contract will include a 1% annual salary increase (cost of living adjustment), and the annual cost per additional 1% is \$740-900k.

*Steps and Lanes*

Step and lane increases are the mechanism by which teachers are recognized for increases in their professional education and length of service. National average length of tenure for teachers is 5-7 years. Brookline’s teacher tenure is in a similar range and currently there are 14 steps and five lanes.

Exhibit: Years of Service for PSB Unit A employees, FY05, FY09-11, FY13-14

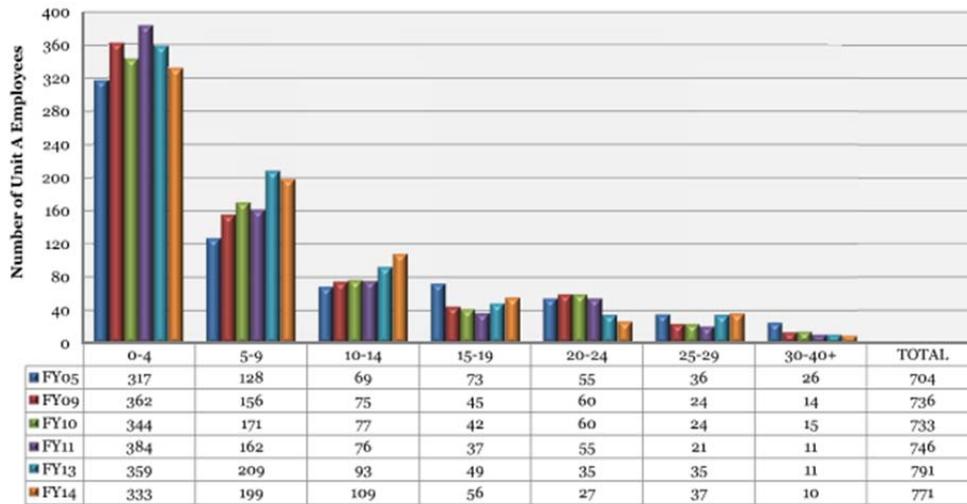


Exhibit: Number of FTE in each step and lane, Unit A, FY14

| STEP    | Bachelor's | Master's | Master's Plus | Master's +45 | Doctorate |                 |
|---------|------------|----------|---------------|--------------|-----------|-----------------|
| 1       | 10.15      | 38.15    | 2.00          | 1.20         | 0.00      |                 |
| 2       | 4.10       | 21.90    | 0.80          | 0.00         | 1.00      |                 |
| 3       | 5.50       | 26.95    | 5.70          | 0.80         | 1.00      |                 |
| 4       | 4.40       | 22.80    | 0.00          | 0.00         | 0.00      |                 |
| 5       | 16.00      | 32.20    | 5.00          | 2.00         | 0.00      |                 |
| 6       | 0.00       | 19.51    | 3.00          | 1.00         | 0.00      |                 |
| 7       | 0.00       | 21.40    | 4.70          | 0.00         | 0.00      |                 |
| 8       | 2.90       | 23.00    | 8.00          | 1.00         | 1.00      |                 |
| 9       | 0.00       | 24.70    | 9.00          | 7.80         | 2.00      |                 |
| 10      | 3.50       | 14.51    | 8.00          | 2.00         | 1.00      |                 |
| 11      | 3.00       | 24.90    | 5.25          | 7.80         | 0.00      |                 |
| 12      | 1.60       | 18.50    | 5.00          | 3.00         | 0.95      |                 |
| 13      | 1.00       | 12.80    | 4.25          | 5.00         | 2.00      |                 |
| 14      | 29.5       | 119.95   | 8.55          | 4.00         | 0.00      |                 |
| 15      |            |          | 41.20         | 53.40        | 0.60      |                 |
| 16      |            |          |               |              | 11.10     | 226.65 TOP STEP |
| TOTAL   | 81.65      | 421.27   | 110.45        | 89.00        | 20.65     | 723.02 TOTAL    |
| IN LANE | 52.15      | 301.32   | 69.25         | 35.60        | 9.55      | 467.87          |

The cost of step increases each year averages \$2,500 per teacher for a gross total of \$1.1 million (or 1.5% of Unit A). The step increases are offset by retirees for a net cost of steps at approximately \$650k for FY15 and increasing to \$800k by FY18, about 1% of personnel costs<sup>3</sup>. Steps and lanes equate to an approximately 3.0-3.5% annual wage increase for any additional, future staff hires – steps at the high end of salary are 2-3% and steps at the low end are 3-4%.

**Benefits, Health Insurance and Pensions**

Health insurance premium increases and OPEBs continue to be significant costs in the budget and represent the most manageable portion of personnel costs in recent years. Health insurance premiums and other benefits represent a 25% premium over salary for teachers and are not part of their collective bargaining contract, although they are part of a separate negotiated process related to Brookline's participation in the Group

<sup>3</sup> PSB step and lane cost estimates for FY2016 and beyond do not include costs of new hires over that period, and therefore likely underestimate the budget impact of steps and lanes.

Insurance Commission (GIC). The town entered the GIC in 2011, which has contributed to managing both costs and predictability of premium increases.

However, health insurance premium costs for teachers and retirees continue to be a significant portion of the budget. This is primarily due to the fact that the town pays 83% of the premium while the employee pays 17%, and the share of premium borne by the town is high when compared to peer communities. In addition, the GIC provides employees with a number of plan options which range from less costly HMOs (approximately \$15k per employee) to more costly PPOs (approximately \$19k per employee). While certainly plan choices that meet the varied needs of a large employee population is necessary, it does not appear that there is a correlation between the specific needs of an employee/family and the choice of a less or more costly health plan. Employees may be choosing higher cost PPOs (over HMOs, which are generally more than adequate for individuals and families) simply because the PPOs' higher cost implies better service. The primary benefit of PPOs is the ability to use out of network doctors, yet most high-quality HMO's in eastern Massachusetts include most health care providers "in network". Reducing enrollment in high cost plans would shift money away from insurance companies and make it available to fund other school budget priorities.

### **Considerations**

This task force re-iterates the recommendations of the 2008 OSC that annual compensation and benefits increase at a rate considered sustainable over time, not exceeding revenue limitations imposed by proposition 2 ½ and State Aid. Within the restrictions associated with Proposition 2 ½, the ability to fund the collectively bargained teachers' salaries is unsustainable given the growth in the number of teachers required to serve the increasing student population. The biggest drivers of cost increases in the teachers' contract are the increasing number of teachers, cost of living (COLA) increases and steps and lane increases.

There are also several areas of the contract beyond compensation that impact the budget: e.g., length of school day and year, sick leave bank, and contractual elements that restrict PSB's flexibility in staffing (e.g., planning time). The highly prescribed requirements of teacher prep time limits the scheduling flexibility that is needed in this time of rapidly increasing enrollments, and greater flexibility for the administration in scheduling may become an increasingly important consideration. There may be an opportunity to leverage changes in or collectively bargain non-negotiated teacher benefits, such as the materials fee program and the High School 4+1 program, to gain financial savings or other non-monetary benefits to the system.

Separate from the school contracts, this task force also agrees with the findings of the OSC Pension and Benefits Subcommittee findings regarding the potential for significant cost savings from the following actions:

- Explore the potential for reducing the town's premium share for health insurance across the board and/or by plan type; each 1% reduction in total contribution results in a \$270k savings to the Town.
- Continue to educate employees about the relative cost/benefit of the various plans to promote savings; each 1% shift in participants from PPOs to HMOs saves the town approximately \$30k.
- Urge the Retirement Board to pro-rate the years of service for part-time employees to become benefits eligible, reducing future OPEB liabilities.

To maintain the quality of the schools and the teachers, PSB contracts must remain competitive and should be benchmarked against towns with similar high academic expectations. Difficulty of implementation for any of these considerations is high, as they need to be collectively bargained.

## **2. Increase in Class Size**

### **Fact Base**

The "Brookline School Committee's Budget Directives" as stated in the Superintendent's Preliminary FY 2011 Budget Message, at p. 321, are: "Ensure that current use of space and changes or plans for new or renovated facilities anticipate future (i.e., multi-year) PreK-12 space needs and support, whenever possible, historical class

size limits of 22-24 in grades K-3 and no more than 25 in grades 4-12.”<sup>4</sup>

*Historic class sizes and the school assignment process*

Currently average K-8 class size is 21.14 students/section (21.0 students/section for grades K-3, and 21.21 for grades 4-8), and increase from an overall average of 19.87 students/section in 2006. The recent increase is driven by enrollment increases, as well as proactive efforts by PSB to improve its own flexibility and thereby efficiency of student assignment to schools. PSB accomplished this greater efficiency by:

- Expanding buffer zones to encompass approximately 30% of entering kindergarteners (effective 2012)
- Delaying school assignments to May and orientations to June (effective 2014)<sup>5</sup>

*Exhibit: Current Kindergarten registration and school assignment process*

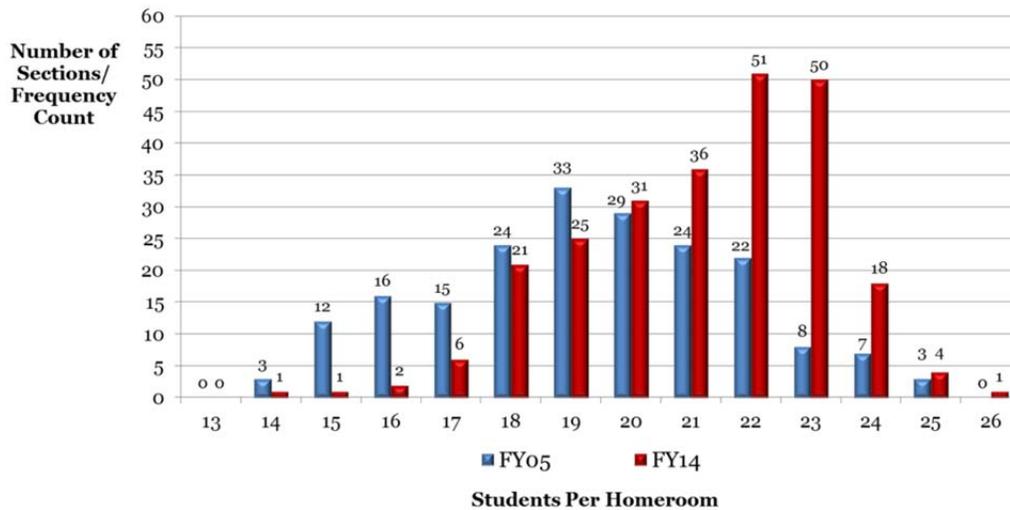
| MONTH    | RESIDENT PROCESS  | MATERIALS FEE PROCESS  | METCO PROCESS  |
|----------|---|--|--|
| January  | <ul style="list-style-type: none"> <li>• Share information on registration with parents</li> </ul>  | <ul style="list-style-type: none"> <li>• Make applications available to Unit A teachers</li> </ul>               |  |
| February | <ul style="list-style-type: none"> <li>• Open registration for non-residents (2 days; arrive in person at neighborhood school)</li> </ul>   | <ul style="list-style-type: none"> <li>• Make applications available to other school staff (late Feb)</li> </ul> | <ul style="list-style-type: none"> <li>• Admit students, closely tracking target program size of 300 and based on prior year graduating class</li> </ul> |
| March    | <ul style="list-style-type: none"> <li>• Begin language screenings</li> <li>• Continue registrations at each school</li> </ul>  | <ul style="list-style-type: none"> <li>• Make applications available to town employees (late Mar)</li> </ul>     |  |
| April    | <ul style="list-style-type: none"> <li>• Continue registrations at each school</li> </ul>   |  |  |
| May      | <ul style="list-style-type: none"> <li>• Make decisions on buffer placement (Mid-May, as late as possible but prior to Peek and Practice events)</li> <li>• Invite parents to guidance meeting with their child at neighborhood school</li> </ul> | <ul style="list-style-type: none"> <li>• Make school assignments (mid-May)</li> </ul>                            | <ul style="list-style-type: none"> <li>• Make school assignments (mid-May)</li> </ul>  |
| June     | <ul style="list-style-type: none"> <li>• Conduct pre-Kindergarten screening (state requirement)</li> <li>• Host Peek and Practice events</li> </ul>   |  |  |
| July     | <ul style="list-style-type: none"> <li>• Begin summer registration</li> <li>• Gather and monitor enrollment numbers on weekly basis throughout summer</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Invite METCO students to LAUNCH, a summer program for entering kindergartners at the Devotion site</li> </ul>   |
| August   | <ul style="list-style-type: none"> <li>• Notify families of classroom assignments; teachers send letters to children</li> <li>• Invite students to “drop in” days to meet teachers before school begins</li> </ul>                                |  |  |

The efficiency of the placement process drives PSB’s ability to increase class size on average, while avoiding placing students in classes that are larger than its stated limits. In 2014, PSB had significantly more class sizes of 22-24 students than it did 10 years ago. One class was above the stated limit of 25 students.

<sup>4</sup> The PSB policy does not make adjustments for the addition of paraprofessionals in K-1 classrooms.

<sup>5</sup> Non-resident students are assigned to schools within a similar timeframe as resident buffer zone students.

Exhibit: Frequency of Students per Section, FY05 vs. FY14



*Additional teachers to support current average class-sizes (K-8)*

Based on its forecast of enrollment growth at the K-8 grades, the School Department's 11/13 Report to the OSC identifies the need for 23 classrooms to accommodate the expected increase of 451 students over the next six years. Over the next three years, this increase is expected to be 344 new students in grades K-8. Note that these estimates predate more recent data on FY15 kindergarten enrollments, which as of September 2014 was expected to be approximately 670 students.

Exhibit: PSB Projected K-8 Enrollment, FY14-22

|             | K   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | K-8 TOTAL |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| <b>FY14</b> | 628 | 675 | 620 | 538 | 653 | 562 | 520 | 535 | 491 | 5,222     |
| <b>FY15</b> | 630 | 628 | 675 | 620 | 538 | 653 | 562 | 520 | 535 | 5,361     |
| <b>FY16</b> | 630 | 630 | 628 | 675 | 620 | 538 | 653 | 562 | 520 | 5,456     |
| <b>FY17</b> | 630 | 630 | 630 | 628 | 675 | 620 | 538 | 653 | 562 | 5,566     |
| <b>FY18</b> | 630 | 630 | 630 | 630 | 628 | 675 | 620 | 538 | 653 | 5,634     |
| <b>FY19</b> | 630 | 630 | 630 | 630 | 630 | 628 | 675 | 620 | 538 | 5,611     |
| <b>FY20</b> | 600 | 630 | 630 | 630 | 630 | 630 | 628 | 675 | 620 | 5,673     |
| <b>FY21</b> | 600 | 600 | 630 | 630 | 630 | 630 | 630 | 628 | 675 | 5,653     |
| <b>FY22</b> | 600 | 600 | 600 | 630 | 630 | 630 | 630 | 630 | 628 | 5,578     |

The 11/13 Report assumes PSB will maintain the same average class-size of approximately 21 students, requiring 23 new classroom teachers over the next six years, of which 16 are needed over the next three years. It also projects the need for an additional .3 teachers per classroom to provide for programming staff for a total of 29.9 new teaching positions. The report identifies \$58k as the average salary for a new teacher hire and assumes a 25% benefit package. The 11/13 Report identifies the number of new K-8 classes, FTEs and budget costs as follows.

*Exhibit:* Projected new classroom and new teacher needs, FY15-20<sup>6</sup>

| Year         | New K-8 Classrooms | New Teacher FTEs | Cost        |
|--------------|--------------------|------------------|-------------|
| FY15         | 7                  | 9.1              | \$659,750   |
| FY16         | 4                  | 5.2              | \$377,000   |
| FY17         | 5                  | 6.5              | \$471,250   |
| FY18         | 3                  | 3.9              | \$282,750   |
| FY19         | 1                  | 1.3              | \$94,250    |
| FY20         | 3                  | 3.9              | \$282,750   |
| <b>Total</b> | 23                 | 29.9             | \$2,167,750 |

Note that PSB staffs both a teacher and a paraprofessional in all Kindergarten and 1st grade classrooms. It also proposes an enhancement to include paraprofessionals in 2nd grade classrooms (see also Section 3: Program Supports). According to PSB, many of the paraprofessionals are certified teachers and all are college graduates.

Finally, while there is a wide body of research on class size, the evidence base on effects of class size is mixed and highly debated. It is thereby difficult to draw direct conclusions from research for the specific question PSB currently faces of whether to allow further class size increases and how much. In light of this ambiguity, the OSC School Program Task Force chose to focus our findings primarily on PSB's own data, laying out the cost savings and the implications PSB highlights that would result from implementing such an increase.

### **Considerations**

Class size and efficiencies related to school assignment are two of the most significant cost drivers in the PSB budget. The Task force analyzed impacts of increasing the K-8 class size from a current average of 21.14 and further changes to assignments, thereby reducing the number of required classroom sections and corresponding capital costs to build additional classrooms.

Operating cost savings are high (long run \$1 million+ per year). In FY15 dollars, the incremental operating savings is estimated at \$98k-136k per classroom (higher cost in lower grades). Beyond the flexibility for efficient placement that currently exists within PSB's buffer zones<sup>7</sup>, there are two potential ways to implement further increases in average class sizes: 1) Increase class size across the board; 2) Change the school assignment process (potentially making buffer zone school assignments later and/or sending late registrants to a school other than their neighborhood school)<sup>8</sup>, or some combination of both.

*Exhibit:* FY 2018 operating cost savings from increasing class size, assuming incoming K of 630 students and 100% cohort retention

|   |         |
|---|---------|
| K-8 class size avg. to 22 (gradual implementation, start in K)    | \$0.43M |
| K-8 class size avg. to 22 (all grades, overall increase)          | \$1.08M |
| K-8 class size avg. to 22 (all grades, change assignment process) | \$0.85M |

<sup>6</sup> These projections from PSB do not include salary growth and step and lane increases for new hires. For FY16 hires, for example, salary increases would amount to \$12-13k annually representing a ~\$50k cumulative cost increase in FY20.

<sup>7</sup> Current buffer zones may provide some flexibility to increase average class sizes without violating class size policy, but to what degree is not yet known. FY15 is the second year PSB has utilized the expanded buffer zones.

<sup>8</sup> For modeling purposes, we used a conservative estimate that the additional cost of changing the assignment process was 1 additional bus (\$55k) for every 2 classrooms saved. If the assignment process changed such that neighborhood assignments were not disrupted, additional financial costs would be minimal.

|   |         |
|---|---------|
| 4-8 class size avg. to 22 (overall increase)                      | \$0.44M |
| 4-8 class size avg. to 22 (change assignment process)             | \$0.33M |
| K-8 class size avg. to 23 (gradual implementation, start in K)    | \$1.31M |
| K-8 class size avg. to 23 (all grades, overall increase)          | \$3.37M |
| K-8 class size avg. to 23 (all grades, change assignment process) | \$2.68M |
| 4-8 class size avg. to 23 (overall increase)                      | \$1.46M |
| 4-8 class size avg. to 23 (change assignment process)             | \$1.11M |

Difficulty of implementation is medium due to the importance PSB places on low class size in its overall educational approach, the potential resistance among school stakeholders, and difficulty in predicting/controlling distribution of students across the district and late enrollments.

PSB suggests potential challenges to further changes in the assignment process to increase its flexibility and efficiency in placing late enrollments. Regarding making buffer zone and non-resident assignments later in the summer, PSB notes that those families may be denied access to afterschool programs and unable to attend the summer LAUNCH program with their school-alike classmates. It also notes that orientation programs would be held in the summer, when some families are out of town. Regarding late registrants, after a specified date or target enrollment number, PSB could choose to assign students to the nearest available K-8 school (but not necessarily in the neighborhood K-8 school where they reside). This option would enable PSB to control class size in upper grades as well as kindergarten. The most significant implication of this approach is that PSB would no longer offer walkable, neighborhood schools for a certain number of families.

PSB also suggests potential negative impacts of higher class size on student outcomes, in particular for higher needs students. PSB notes that implementing larger class size in grades 4-8 is more consistent with research indicating relative importance of class size in younger grades and with PSB's own guidelines which allow for higher class sizes in grades 4-8. Finally, PSB suggests a potential additional need for Paraprofessionals beyond K-2 (current cost is \$27.5K per Paraprofessional, salary plus benefits) on a case-by-case basis where larger class sizes and special needs are too difficult for one teacher to manage alone

### 3. Program Supports

#### **Fact Base**

In addition to adding classroom staff, PSB also included in its projections additional non-classroom program staff and supports. It categorized these investments in two ways: "catch up" (positions that have been relatively underfunded as enrollment has increased) and "enhancements" (programmatic improvements). The total request for both catch up and enhancement investments represents approximately 1/3rd of the operating override request.

The request for catch up is \$2.3 million in FY16. PSB describes the catch up category as providing funding for areas that have fallen behind in staffing since the start of the enrollment growth. It includes increases to the following staff positions: Nurses, Psychologists, Guidance counselors, H.S. social workers, Elementary World Language (EWL) teachers, Evaluation team facilitators (ETF), Special education support staff (Occupational, Physical and Speech therapists, and Board certified behavior analysts (BCBA)), and Central and School-based Administration. PSB provided target ratios and benchmarks that are the School Department's rationale behind several of these investments. The OSC also analyzed PSB historic ratios as a point of comparison.

Exhibit: Catch up rationale, target and historic ratios (FTE per student)

| Category  | PSB Rationale / Explanation  | PSB target ratio | FY14 ratio | FY06 ratio  | FY02 ratio |
|---|--|------------------|------------|---|------------|
| Nurses  | Blended ratio of the guidelines established by the National Association of School Nurses for 750:1 for general population, 225:1 for students requiring daily nursing services, and 125:1 for students with complex health care needs; PSB suggests that an increasing number of students have complex and chronic health needs such as asthma, diabetes, food allergies, obesity, and mental and behavioral health issues | 500              | 579        | 540   | 664        |
| Psychologists   | National Association of School Psychologists standard is 1000:1; Massachusetts School Psychologist Association standard is 500:1 for general population, 250:1 for mainstream population (caseload includes students with disabilities)  | 500              | 579        | 703   | 748        |
| K-8 Guidance counselors   | American School Counselor Association sets a standard of 250:1 for Middle and High School  | 350              | 391        | 325   | 335        |
| HS Guidance counselors  | American School Counselor Association sets a standard of 250:1 for Middle and High School. HS ratio of 195:1 was set based on the average in comparable MetroWest communities  | 195              | 235        | 187   | 176        |
| HS Social workers   | Provides further support and connection for students and families with community-based resources for issues that can block academic progress such as poverty, substance abuse, community violence, early sexual activity and family conflicts  | 600              | 552        | n/a   | n/a        |
| Elementary World Language teachers  | Time allocations by grade level based on PSB Elementary World Language program design  | 11.7             | 13.4       | 0 (added after 2008 override)                       | 0          |
| Evaluation team facilitators (ETF)  | Manages all aspects of the IEP process; position recently added by PSB to relieve Special Education teachers, guidance counselors and other specialists from these responsibilities  | 590              | 608        | 0 (added in redesign of special education services) | 0          |
| Special education: Occupational, physical and speech therapists, and board certified behavior analysts (BCBA) | Blended ratio of: 20:1 for substantially separate students, 35:1 for Comprehensive Learning Center students, 50:1 for mainstream students; By law, ratios must comply with each student's Individualized Education Plan  | 34               | 34         | n/a statistics on 2006 special education population | n/a        |

|   |  |     |     |     |     |
|---|--|-----|-----|-----|-----|
| Regular education: Occupational, physical and speech therapists, and board certified behavior analysts (BCBA) | Guidelines from American Occupational Therapy Association, Massachusetts Association for Occupational Therapy, the American Speech-Language Hearing Association, and Mass. Speech Language Hearing Association; Response to Intervention regulations outlined in the Individuals and Disabilities Education Act (IDEA) also requires targeted interventions all children's areas of specific need as soon as those needs become apparent | 500 | 0   | 0   | 0   |
| K-8 Administration  | Higher ratio primarily adds Vice Principals to address schools' increasing administrative needs driven by enrollment growth and recent addition of Educator Evaluation regulations   | 245 | 293 | 258 | n/a |
| HS Administration   | (see above; also relates to HS Administration)   | 185 | 285 | 178 | n/a |
| Central administration  | Higher ratio supports growing student population and staff, and may include restoring positions cut in earlier budget cycles (e.g., Director of Research and Accountability, Director of Professional Development) and new positions (e.g., Centralized Registrar, Out-of-School Time Coordinator)   | 345 | 395 | n/a | n/a |

*Exhibit: Catch up FTE projections*

| <b>Regular Education Support Staff FTE's</b> |      |       |        |              |              |                    |             |
|--|------|-------|--------|--------------|--------------|--------------------|-------------|
| Fiscal Year                                  | EWL  | Nurse | Psych. | Guidance K-8 | Guidance BHS | Social Workers BHS | Total       |
|  |      | 500   | 500    | 350          | 195          | 600                |             |
| FY14   | 14.6 | 11    | 9      | 12.2         | 8.0          | 3.0                | 57.8        |
| FY15   | 15.3 | 12.2  | 10.5   | 13.7         | 8.0          | 3.0                | 62.7        |
| FY16   | 17.5 | 14.8  | 14.8   | 15.6         | 9.9          | 4.0                | 76.6        |
| FY17   | 17.6 | 15.2  | 15.2   | 15.9         | 10.3         | 4.4                | 78.5        |
| FY18   | 18   | 15.5  | 15.5   | 16.1         | 10.8         | 4.5                | 80.4        |
| FY19   | 18.1 | 15.8  | 15.8   | 16.0         | 11.6         | 4.8                | 82.1        |
| FY20   | 18.1 | 15.9  | 15.9   | 16.2         | 11.7         | 4.8                | 82.5        |
| FY21   | 18.1 | 16.1  | 16.1   | 16.2         | 12.2         | 5.0                | 83.5        |
| FY22   | 18.1 | 16.1  | 16.1   | 15.9         | 12.7         | 5.1                | 84.2        |
| <b>Total Growth</b>                          |      |       |        |              |              |                    | <b>26.4</b> |

| <b>Special Education Support Staff FTE's</b> |                       |            |             |
|--|-----------------------|------------|-------------|
| Fiscal Year                                  | OT/PT/<br>Speech/BCBA | ETF        | Grand Total |
| FY14   | 34.3                  | 11.9       | 46.2        |
| FY15   | 36.2                  | 11.9       | 48.1        |
| FY16   | 47.3                  | 12.5       | 59.8        |
| FY17   | 48.5                  | 12.8       | 61.3        |
| FY18   | 49.5                  | 13.1       | 62.6        |
| FY19   | 50.4                  | 13.3       | 63.8        |
| FY20   | 50.8                  | 13.4       | 64.3        |
| FY21   | 51.4                  | 13.6       | 64.9        |
| FY22   | 51.6                  | 13.6       | 65.2        |
| <b>Total Growth</b>                          | <b>17.3</b>           | <b>1.7</b> | <b>19.0</b> |

| <b>Administration Support FTE's</b> |          |                   |          |             |
|-------------------------------------|----------|-------------------|----------|-------------|
| Fiscal Year                         | Central  | School Based      |          | Grand Total |
|                                     |          | K-8<br>Elementary | BHS      |             |
| FY14                                | 17.72    | 17.7              | 6.53     | 41.95       |
| FY15                                | 18.72    | 18.7              | 6.53     | 43.95       |
| FY16                                | 20.72    | 19.7              | 8.05     | 48.47       |
| FY17                                | 21.72    | 20.7              | 8.53     | 50.95       |
| FY18                                | 22.72    | 21.7              | 10.53    | 54.95       |
| FY19                                | 22.72    | 22.7              | 11.53    | 56.95       |
| FY20                                | 22.72    | 22.7              | 12.53    | 57.95       |
| FY21                                | 22.72    | 22.7              | 12.53    | 57.95       |
| FY22                                | 22.72    | 22.7              | 13.53    | 58.95       |
| <b>Total Growth</b>                 | <b>5</b> | <b>5</b>          | <b>7</b> | <b>17</b>   |

The request for enhancements is \$1.3 million in FY16, \$896k in FY17, and \$385k in FY18. PSB describes the enhancement category as including investments in:

- Steps to Success staff (program intended to enhance educational outcomes for students from low-income families, most living in Brookline public housing)
- Enrichment Challenge and Support (ECS) staff (assist classroom teachers with curricular extensions, with particular attention to students who seek even greater challenge)
- Literacy specialists and contract (instructional coaches and interventionists for K-8 students who need formal literacy interventions)
- Math specialists (instructional coaches and interventionists for K-8 students who need formal math interventions)
- 2nd grade paraprofessionals (provide in-classroom support to all second grade classrooms; note: request is for 50% of projected need assuming that paraprofessionals currently in 1:1 situation can be repurposed; PSB currently provides paraprofessionals in K-1 classrooms)
- Professional learning/innovation (targeted toward improving educators' skills to better differentiate and individualize learning, learning for teachers new to the system, and testing of promising practices in teaching; note: technology-based professional development was included in the technology budget)

- Custodial (contracted cleaning services and building repair and maintenance increased due to expanding square footage)
- Student supplies (instructional materials and supplies which have not kept pace with increased enrollment and overall costs, and to support improvements in curriculum)

*Exhibit:* Enhancement projections

| Program and Building Support Growth |                        |             |             |            |             |                           |                                  |               |              |                        |
|-------------------------------------|------------------------|-------------|-------------|------------|-------------|---------------------------|----------------------------------|---------------|--------------|------------------------|
| Fiscal Year                         | Steps to Success (FTE) | ECS (FTE)   | Literacy    |            | Math (FTE)  | Second Grade Para's (FTE) | Professional Learning/Innovation | Custodial/R&M | Supplies     | Grand Total (FTE only) |
|                                     |                        |             | FTE         | Contract   |             |                           |                                  |               |              |                        |
| FY14                                | 5                      | 4.25        | 20.9        | \$ 99,000  | 12.20       | 0.0                       | \$ -                             | \$ 492,000    | \$ 1,678,592 | 42.35                  |
| FY15                                | 5                      | 4.25        | 21.5        | \$ 144,250 | 12.40       | 0.0                       | \$ -                             | \$ 492,000    | \$ 1,790,092 | 43.15                  |
| FY16                                | 6                      | 5.65        | 24.8        | \$ 269,000 | 14.90       | 6.8                       | \$ 220,000                       | \$ 572,000    | \$ 1,938,774 | 58.10                  |
| FY17                                | 6                      | 5.65        | 28.3        | \$ 173,000 | 18.00       | 13.5                      | \$ 242,000                       | \$ 612,000    | \$ 2,035,713 | 71.45                  |
| FY18                                | 7                      | 5.65        | 29.5        | \$ 78,000  | 20.00       | 13.5                      | \$ 266,200                       | \$ 662,000    | \$ 2,137,498 | 75.65                  |
| FY19                                | 7                      | 5.65        | 29.5        | \$ -       | 20.00       | 13.5                      | \$ 292,820                       | \$ 732,000    | \$ 2,244,373 | 75.65                  |
| FY20                                | 7                      | 5.65        | 29.5        | \$ -       | 20.00       | 13.5                      | \$ 322,102                       | \$ 772,000    | \$ 2,356,592 | 75.65                  |
| FY21                                | 7                      | 5.65        | 29.5        | \$ -       | 20.00       | 13.5                      | \$ 354,312                       | \$ 802,000    | \$ 2,474,422 | 75.65                  |
| FY22                                | 7                      | 5.65        | 29.5        | \$ -       | 20.00       | 13.5                      | \$ 389,743                       | \$ 852,000    | \$ 2,598,143 | 75.65                  |
| <b>Total Growth</b>                 | <b>2.00</b>            | <b>1.40</b> | <b>8.60</b> |            | <b>7.80</b> | <b>13.5</b>               |                                  |               |              | <b>33.304</b>          |

Based on analysis of historical PSB data and our understanding of which areas of the budget are driven by enrollment growth, the OSC does not necessarily agree with the characterization of certain items as catch up or enhancement. Some of these requests re-establish staffing and programs consistent with pre-enrollment surge levels: guidance counselors, EWL teachers, and school-based administration to some extent. In other cases the increase represents targeted program growth from the PSB.

For instance, the catch up category includes BCBA's for the regular education population, a new investment of \$800k. Yet currently, BCBA's only serve special education students. The rationale PSB provided was that BCBA's for regular education may help to prevent additional special education referrals and is also part of PSB's strategy to comply with recent Response to Intervention legislation.<sup>9</sup> On the other hand, the enhancement category includes increases to the custodial contract, which is growing to serve increasing numbers of classrooms. Growing the contract is in lieu of increasing custodial FTE (which have declined in the last 10 years). The enhancement category also includes literacy specialists, which are staffed 20% lower than might be suggested by a historical analysis looking at 2006, and is also part of PSB's strategy to comply with Response to Intervention legislation.

Ratio analyses using Brookline history, professional association recommendations and peer communities are useful in determining whether investments are catch up or are enhancements. However, there is no hard and fast rule as to where Brookline should be on a student to support staff ratio.

**Considerations**

This task force analyzed reducing or continuing to phase in these investments more slowly to make a smaller impact on the annual budget increase. Each 10% reduction in the overall catch up and enhancement budget would reduce the operating override request by approximately \$650k by FY18, and maintaining the current level of service<sup>10</sup> on all catch up and enhancement items would reduce the operating override request by

<sup>9</sup> Response to Intervention legislation does not prescribe specific staff positions required to be in compliance, and peer communities have applied different approaches.

<sup>10</sup> In the OSC financial model, maintaining the current level of service applies the current FTE per student or dollar per student ratio and maintains that ratio for future enrollment growth, if the investment area is driven by a per student ratio. If it is not an area sensitive to enrollment growth, maintaining current service levels implies no further cost growth.

approximately \$5.2 million by FY18<sup>11</sup>.

*Exhibit: OSC financial model savings estimates of reductions to program supports (\$ million)*

| Category                       |                                  | 10% reduction | maintain current ratio |
|--------------------------------|----------------------------------|---------------|------------------------|
| Catch up                       | Nurse                            | \$ (0.023)    | \$ (0.167)             |
|                                | Psych                            | \$ (0.036)    | \$ (0.167)             |
|                                | Guidance K-8                     | \$ (0.019)    | \$ (0.134)             |
|                                | Guidance HS                      | \$ (0.022)    | \$ (0.144)             |
|                                | HS Social Workers                | \$ (0.009)    | \$ (0.054)             |
|                                | Elementary World Language        | \$ (0.022)    | \$ (0.175)             |
|                                | Evaluation Team Facilitators     | \$ (0.009)    | \$ (0.031)             |
|                                | OT/PT/Speech BCBA: Special Ed.   | \$ (0.018)    | \$ -                   |
|                                | OT/PT/Speech BCBA: Regular Ed.   | \$ (0.087)    | \$ (0.869)             |
|                                | K-8 Administration               | \$ (0.038)    | \$ (0.279)             |
|                                | HS Administration                | \$ (0.044)    | \$ (0.353)             |
|                                | Central Administration           | \$ (0.047)    | \$ (0.329)             |
|                                | Enhancement: personnel           | ECS           | \$ (0.011)             |
| Literacy specialists           |                                  | \$ (0.062)    | \$ (0.620)             |
| Math specialists               |                                  | \$ (0.059)    | \$ (0.586)             |
| Steps to Success               |                                  | \$ (0.015)    | \$ (0.154)             |
| Second Grade Paraprofessionals |                                  | \$ (0.051)    | \$ (0.511)             |
| Enhancement: Non-personnel     | Supplies                         | \$ (0.037)    | \$ (0.141)             |
|                                | Literacy contract                | \$ (0.008)    | \$ (0.078)             |
|                                | Professional Learning/Innovation | \$ (0.027)    | \$ (0.266)             |
|                                | Custodial contract               | \$ (0.017)    | \$ (0.106)             |

This task force acknowledges that some level of increased staffing is needed to address the effective service decreases occurring through enrollment growth. Due to the interrelationships between disciplines and specialized staff, there are causes and effects of various staffing decisions.

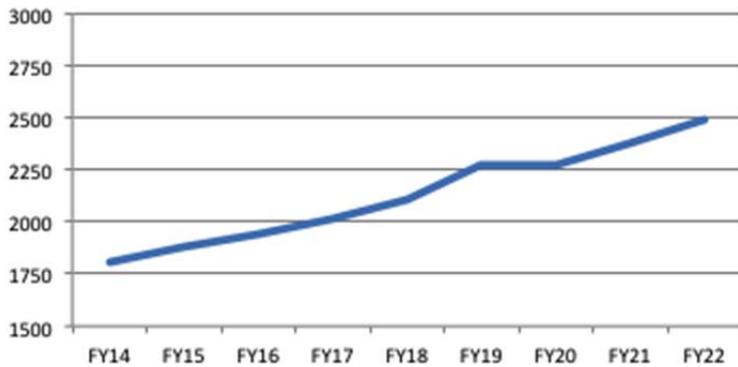
#### 4. High School Tutorial Program and Student to Teacher Ratio

##### **Fact Base**

Based on the same enrollment patterns identified above and the assumption that new kindergarten classes remain at the same attendance level as they age through the system, BHS enrollment is expected to grow to its largest population ever of almost 2,500 by FY22.

<sup>11</sup> These figures are higher than PSB's budget projections because the OSC financial model included additional adjustments for future enrollment increases, COLA, and step and lane increases in new hire positions.

*Exhibit: BHS projected enrollment*



Keeping the current student to teacher ratios (approx. 14.25:1), the BHS enrollment surge would require an additional 48 positions by FY22. Applying the same \$58k per position standard with a 25% benefit package, the BHS teacher needs identified in the School Department’s 11/13 Report to the OSC are as follows:

*Exhibit: BHS new teachers hires, based on enrollment growth and flat student to teacher ratios, FY15-22*

| Year  | Enrollment Growth | New Positions | Cost        |
|-------|-------------------|---------------|-------------|
| FY15  | 74                | 5.2           | \$376,491   |
| FY16  | 60                | 4.2           | \$305,263   |
| FY17  | 76                | 5.3           | \$386,667   |
| FY18  | 96                | 6.7           | \$488,421   |
| FY19  | 162               | 11.4          | \$824,211   |
| FY20  | 3                 | 0.2           | \$15,263    |
| FY21  | 100               | 7.0           | \$508,772   |
| FY22  | 113               | 7.9           | \$574,912   |
| Total | 684               | 48            | \$3,480,000 |

To maintain its student to teacher ratio, the PSB indicated that it conducts a review of class enrollment at the high school each year, and considers whether or not to cancel certain offerings if enrollment is low. The task force also reviewed this data and did not identify specific class offerings that merited deeper consideration by the OSC.

The other driver of the student to teacher ratio is what PSB calls the 4+1 model, which enables it to provide certain students with more intensive instruction in the Tutorial Program. It is a non-mandated, non-negotiated program utilizing 14.6 FTEs at BHS. The collective bargaining contract allows for carrying a five-class teaching load at BHS. In 2002 the high school moved away from a teaching load of five classes in the core academic subjects to four classes with a fifth additional responsibility to teach in a smaller tutorial environment with 5:1 student to teacher ratio. Some districts, such as Newton, require only four classes in their contract, so the Tutorial Program essentially provides for direct teaching services with a fifth class that may not be required in other districts.

Teaching 4 classes of 20 students versus 5 classes makes a difference in the overall time teachers are able to provide individual attention/feedback to students. Teachers can provide for more intensive instruction in their subject area, as well as provide for enhanced executive functioning assistance that the high school can demand (typically for freshmen and sophomores). Currently about 15% of BHS students use the Tutorial Program.

## **Considerations**

Reducing or changing student to teacher ratios or the Tutorial program might be more difficult in a stable or declining enrollment environment since it might require layoffs to implement. In Brookline's case, however, some scaling back of the Tutorial program, in addition to continued review and elimination of low enrollment classes, could be implemented in lieu of some of the 30 new teachers at BHS the PSB forecast over the next six years.

Several options for implementation include:

- Increasing the overall student to teacher ratio by 1 student (from 14.25 to 15.25 students) would save approximately \$860k by FY18. While this task force did not identify immediate opportunities to reduce low enrollment classes, we encourage PSB to continue its critical review of such classes on annual basis.
- Scaling back the Tutorial program and requiring teachers to carry a fifth full class, instead of a Tutorial class, would essentially operate as a "new" .2 FTE. Each 10% reduction in the Tutorial program would save approximately \$120k per year. Possible modes of implementation include:
  - Alternate teachers between carrying the current 4+1 load one year and a full 5-class load the next (or spread out between 2-3 years, depending on desired size of the program).
  - Increase the ratio of Tutorial Students from 5:1 to a higher number.
  - Implement a five-class load in areas where teacher attraction and retention are the least difficult or where the need for tutorial support may be needed least.

Full scale implementation is medium-term, as PSB would seek to retain staff and implement as BHS enrollments grow. Barriers to implementation are relatively low, as it is outside of collective bargaining. However, it is important to note that the Tutorial program generated significant support as evidenced by parental support letters and may help reduce special education referrals. Demand for the Tutorial program may indeed increase if the high school grows to 2,500 students. Finally, reducing or eliminating the 4+1 model may also lead to a less competitive package for teacher recruitment purposes.

## **5. Elementary World Language**

### **Fact Base**

In the 2000's, Brookline received a grant to teach mandarin in the grammar schools. When this three-year grant ran out, the PSB could not continue to fund the program. The Town organized a task force to review program and make recommendations for future world language instruction in the elementary schools. The Task Force report resulted in an override vote passed by voters in 2008 to fund Elementary World Language (EWL) in the schools, grades K-6. The Task Force recommended the FLES model, where the classroom teacher participated in the language instruction in relatively short classes.

The K-6 World Language Program is based on current pedagogical research about effective approaches to language acquisition. It meets the rigorous expectations of the Massachusetts Foreign Languages Curriculum Framework as well as the nationally established standards for foreign language education. The overall goals are:

- To acquire proficiency in speaking, listening, reading and writing the target language;
- To acquire an understanding of and appreciation for other cultures;
- To reinforce learning of the general curriculum content through the study of a world language; and
- To develop students as language learners

The 2008 override vote provided for \$800k for world language instruction. For grades K-6 in FY14, PSB has 14.6 FTE instructional EWL staff at a cost of \$939k. The current cost estimate for the program is approximately \$1.1 – 1.2 million based on enrollment growth and inflation.

## **Considerations**

As it is at its five year mark, the consensus of this task force was to recommend that PSB review the effectiveness of the program.

Beyond that recommendation, the task force also considered options for cost savings. EWL is not administered to provide classroom teachers with a break for prep time (as other “specials” such as P.E. and music do). The program model was built on the classroom teacher remaining with students during language instruction. Considering program adjustments to replace one special with World Language for grades 4-5 might provide some small efficiency of \$100k. The implication is that students would lose one day of either music or P.E. specials.

Barriers to implementation are low as it is outside of collective bargaining. However, the PSB has previously considered reductions to specials and met substantial community resistance. And, PSB expressed that it would want to conduct a program review prior to considering changes such as the above.

Given the \$1.1–1.2 million cost of the program, some OSC members also suggest that the results of the program review be shared widely with the public. Should the program prove to be achieving less than expected, program adjustments or a move to have voters re-endorse the program are potential responses.

## **6. Technology**

### **Fact Base**

Technology is the fourth major component of the override, after enrollment-driven hiring, program enhancements and capital related costs.

#### *Rationale presented for the technology plan*

The PSB’s rationale for new technology investments was based on equity in the distribution of devices, increased ability to prepare students for the workplace, enhanced attraction for teachers who feel the district is behind other districts, and needs associated with the administration of the PARCC assessments. The PSB noted that they were not seeking cost savings or teaching personnel changes as part of the technology plan.

#### *PSB’s current technology staffing*

The School’s Department of Education Technology (DET) is composed of

- Ed Tech and Library Department, which consists of 1 FTE Director, 9 FTE Educational Technology Specialists (1 per school) who provide coaching and job-embedded professional development, and 12 FTE Librarians
- The Help Desk, which consists of 1 FTE Help Desk Manager and 4 FTE Technicians
- The Data Team, which consists of 3 FTE Data Support specialists
- On an ongoing basis, the DET engages IT contractors as needed.

To coordinate on governance-related issues, the Town Information Technology Department (ITD) and PSB have a memorandum of understanding (MOU) developed after the 2002 Strategic Plan for Information Technology, which established the Chief Information Officer of ITD as the Town and PSB hub for strategy, technology alignment, implementation planning and other significant governance roles. ITD supports DET’s networking and infrastructure needs, while Help Desk is PSB’s most direct operational technology collaboration with the Town.

#### *Elements and cost of the proposal*

The annual budget increases associated with the technology plan are provided in the chart below, decomposed

into the four major cost categories: devices, applications, infrastructure/mounted projection, and staffing.<sup>12</sup>

*Exhibit: Education Technology Plan FY15-19: Annual Increases*

|                               | FY14              | FY15              | FY16              | FY17              | FY18              | FY19              | Total               | Total FY16-19       |
|-------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|
| Devices: Equity               | \$ -              | \$ 200,000        | \$ 245,000        | \$ 245,000        | \$ 43,000         | \$ -              | \$ 733,000          | \$ 533,000          |
| Devices: Lifecycle            | \$ 356,000        | \$ 244,000        |                   |                   |                   |                   | \$ 600,000          | \$ -                |
| Applications: T&L Tools       | \$ 32,000         | \$ 10,650         | \$ 20,750         | \$ 10,000         | \$ 83,750         | \$ 11,500         | \$ 168,650          | \$ 126,000          |
| Applications: Digital Content | \$ 13,000         | \$ 32,000         | \$ 46,000         | \$ 30,000         | \$ 30,000         | \$ 30,000         | \$ 181,000          | \$ 136,000          |
| Applications: Admin. Tools    | \$ 72,000         | \$ 38,400         | \$ 74,400         | \$ 58,000         | \$ 50,000         | \$ 14,600         | \$ 307,400          | \$ 197,000          |
| Infrastructure: Network       | \$ -              | \$ 75,000         | \$ -              | \$ -              | \$ -              | \$ -              | \$ 75,000           | \$ -                |
| Mounted Projection            | \$ -              | \$ -              | \$ 135,000        | \$ 25,000         | \$ 20,000         | \$ 20,000         | \$ 200,000          | \$ 200,000          |
| Innovation                    | \$ -              | \$ -              | \$ 50,000         | \$ 25,000         | \$ 50,000         | \$ 25,000         | \$ 150,000          | \$ 150,000          |
| Professional Development      | \$ 20,000         | \$ 50,000         | \$ -              | \$ -              | \$ -              | \$ -              | \$ 70,000           | \$ -                |
| Staffing                      | \$ -              | \$ -              | \$ 175,000        | \$ 175,000        | \$ 175,000        | \$ 125,000        | \$ 650,000          | \$ 650,000          |
| <b>Total</b>                  | <b>\$ 493,000</b> | <b>\$ 650,050</b> | <b>\$ 746,150</b> | <b>\$ 568,000</b> | <b>\$ 451,750</b> | <b>\$ 226,100</b> | <b>\$ 3,135,050</b> | <b>\$ 1,992,000</b> |

*Exhibit: Capital Improvement Plan*

|                                | FY14             | FY15             | FY16             | FY17             | FY18             | FY19             | Total            | Total FY15-19    |
|--------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Infrastructure: School Network | \$ 94,900        | \$ 80,000        | \$ 80,000        | \$ 80,000        | \$ 80,000        | \$ 80,000        | \$494,900        | \$400,000        |
| Applications: Admin. Tools     | \$ 40,000        |                  |                  |                  |                  |                  | \$ 40,000        | \$ -             |
| Mounted Projection             |                  | \$256,000        |                  |                  |                  |                  | \$256,000        | \$256,000        |
| Mobile Carts                   | \$ -             | \$ 63,000        | \$ 40,000        | \$ 40,000        |                  |                  | \$143,000        | \$143,000        |
| <b>Total</b>                   | <b>\$134,900</b> | <b>\$399,000</b> | <b>\$120,000</b> | <b>\$120,000</b> | <b>\$ 80,000</b> | <b>\$ 80,000</b> | <b>\$933,900</b> | <b>\$799,000</b> |

Reductions from the original technology plan presented to the OSC in 2013 were due to movements in category expenses (including shifting with Town IT budgets) and longer phasing of desired annual increases.

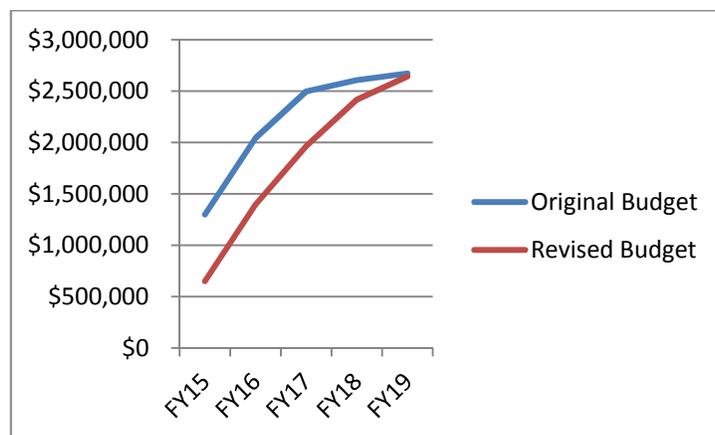
- *Devices:* The budget foresees an increase in inventory of 2400 mobile computers and additional classroom instructional tablets. Investment to ensure a 4-year lifecycle replacement on current technology ensures that professional staff has professional-level devices. The goal of shortening the lifecycle to 4 years is in line with the Town’s practice.
- *Applications:* The cumulative budget has been modified from \$2.126 million to \$1.647 million. Investments are for numerous tools; for example, seven (7) teaching and learning tools, and nine (9) administrative tools. The revised plan has slowed the pace of application investments but envisions the same number.
- *Infrastructure/network:* The revised budget substantially moves investments to the CIP; mounted projection, originally to be funded through the CIP, is included in the revised operating budget.
- *Staffing:* The three budget lines (Innovation, Professional Development, and Staffing) have been modified from a cumulative \$3.5 million to \$2.35 million.
  - The original plan budgeted “Innovation” at \$100k in FY2015, growing to \$146k by FY19, with funds disbursed through an internal application process. The revised budget slows the pace of funding but by FY19 rise to a higher level. More information is needed to understand the request.
  - The original plan defined “Staffing” as a project manager, online learning specialist, assistive technology specialist, systems administrator, Help-Desk Senior Technician and a Building-based Technical Support professional. More information is needed to understand the planning, deployment, qualifications of existing staff (including the Help Desk), and the relationship of the new hires and existing staff.

<sup>12</sup> The PSB provided budgets to the OSC also on a cumulative basis. The original technology plan covering FY15-19 period amounted to \$11.1 million on a cumulative basis; the revised plan to \$9.068 million. For the three-year FY16-18 period of the override, PSB sought \$7.149 million originally, and \$5.776 million in the revised plan. The PSB originally sought \$1.407 million in cumulative technology capital investments over the period; in the revised budget, \$799k.

- “Professional Development” is a new line item in the budget. PSB has not yet provided a description regarding those served by the professional development (teachers, administrators, educational technology specialists (ETS), librarians, others, or all of the above).
- PSB did not communicate any staffing description changes or reductions as part of the plan. All proposed hires are accretive.

By FY19, the revised plan calls for a cumulative annual increase of \$2.642 million above current spending FY15 spending levels (virtually the same amount as in the original technology proposal).

*Exhibit: Original & revised technology plans, cumulative annual increase post-FY14*



### **Considerations**

The task force supports advancing the use of technology in Brookline’s classrooms, especially when tied to a coherent plan driven by curricular goals and equitable access to high-quality digital learning resources. The task force underscores the value of clear and measurable goals, and good governance to the success of the technology plan. This is especially true given the paucity of examples of schools and districts that can demonstrate a meaningful improvement in student achievement resulting from technology investments.

### *Devices*

Over the FY16-18 term of the override there is broad task force support for most, if not all, of the Superintendent’s request for devices, to provide equity of access across the schools and to reduce replacement frequency). The task force discussed the experience in other districts, where there was more targeting of devices from grades 4 through 12, as well as a more staged rollout by grade spans (6-8, then 4-5 and finally 9-12). The Superintendent underscored the need for broader access across lower grades due to the implementation of the PARCC assessments.

### *Applications*

During earlier iterations of the technology plan, the task force expressed concern about the number of new applications being funded and the ability, even on the administrative side, to use them effectively in such a short time span. The task force agrees with the revised plan’s slower pace of application investments, given the need to engage and train central office, administrative and professional staff. Even slower ramp-up in digital content for students could be considered given the learning curve for a number of professional staff, whether on the content opportunities themselves, teaching approaches, or assessment-related activities.

### *Staffing*

The technology staffing plan was not yet finalized by the end of the OSC process. The task force recommends that the Board of Selectmen request further detail behind the staffing plan and its rationale, in addition to further clarity on IT governance as noted below. As the Schools further articulate their staffing proposal, the task force makes the following suggestions:

- Compare qualifications needed to implement the technology plan with current staff qualifications for an understanding of gaps and needs
- Consider additional training for current ETS and librarians, so that they can perform more of the functions associated with, and lessen or alleviate the need for, new proposed hires
- Consider non-FTE resources for proposed staff functions (e.g., collaborations with Brookline Access Television regarding support, training, and curriculum organization)
- Consider improvements to the operations of the Help Desk, as recommended in the 2002 Strategic Plan for IT and the 2009 Efficiency Initiative Committee report, creating a uniform support model, with greater outsourcing of PSB user support<sup>13</sup>
- Develop an organizational chart that clearly articulates the relationship of proposed to existing staff
- Raise the minimum qualifications for ETS, librarians and other existing DET positions with the needs of the technology plan in mind

One member of the task force expressed reservations around the proposed staffing increases, concerned that they may be duplicative, mask existing organizational inefficiencies, and/or raise collective bargaining issues (as indicated by the Superintendent).

#### *New Town-School MOU on technology governance*

The current level of coordination across Town ITD and School DET is not consistent with the policies Brookline adopted in its 2002 Strategic Plan for IT. The benefits of ITD-DET coordination are clear: During the OSC's deliberations, renewed coordination led to the achievement of greater internet connection for the schools without additional cost to the PSB. The task force believes that clarity around the governance of the Town-School partnership on technology is critical; planning and decision-making processes directly affect the management of investments and effectiveness of programs, whether in school technology or other areas of serve.

The task force suggests that a new Town-School MOU be developed on technology governance, including:

1. Strategy: Strategy development in IT includes prioritization, sequencing, engagement with end users, and policies and procedures:
  - Prioritization of investments will allow sequencing and adequate training so that staff can focus on results, build expertise in the teaching corps and adjust course before expanding the investments across the spectrum of grades.
  - Development, with teachers, of policies and procedures to guide implementation of technology (see appendix A) is critical. ITD does not have the expertise to make policy for the Schools, but its objective view and insistence on best practices will improve policy development.
  - PSB will need to define impacts on textbook purchasing budgets and online program licenses.
2. Technology alignment: Defining technology device alignment to ensure that components can “talk to each other” and provide useful achievement data to inform the teacher’s craft and useful administrative input. In addition to Macs, which have been the mainstay of education technology, there are more devices such as Chromebooks, Kindles, etc., as well as programs that will need support.
3. Rollout/ Implementation and Staffing: Coordination with ITD to develop a detailed plan addressing staffing (audit of current and desired qualifications and needs, training, outsourcing, and recruitment) will help avoid inefficiencies and duplication of effort.

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<sup>13</sup> The greatest demand for Mac Help Desk support is during equipment switchovers. With increased technology device purchases under consideration by the Town and the PSB, switchover timing will be even more intensive (and require more summertime help). Although the PSB run thousands of Mac devices, the new technology plan aims to be device neutral. The Town tends to use PC equipment but its mobile devices increasingly vary. For these reasons PSB may consider putting the Mac Help Desk and break/fix support staff out for bid as it was after the 2009 EIC report. Revisiting the bid process with more tightly defined specifications may produce a more cost effective response and the potential to eliminate one or two positions under an outsourcing model.

Associated with governance and a high-quality implementation plan, the task force also suggests the PSB establish benchmarks relating to the deployment and usage of technology after the purchase of new devices and applications.

#### *Other potential savings and the elimination of computer labs*

The PSB did not present potential cost offsets achievable due to the introduction of new technology into the classrooms and administration of our schools. Select national models for district implementation of technology, such as Mooresville, NC, which was also cited in the PSB's original December technology proposal, have matched improving student performance with budgetary offsets.

There are, however, other areas where new and substantial investments in technology create options for operating and capital savings. As the PSB invests more in e-book and online materials, it could seek prudent reductions in traditional classroom and library materials budgets. Investments in administrative applications have led to savings in other districts.<sup>14</sup> As regards the capital budget, full implementation of PSB's technology device purchases could free up several classrooms across the K-8 system, potentially reducing the level of capital investment needed to create additional classroom space. Floor plans suggest the potential to repurpose computer labs for classroom space at the Devotion, Driscoll, Heath, Pierce and Runkle schools.<sup>15</sup>

## **7. Benchmarking**

### ***Fact Base***

The schools make up the largest single category of expenditure in Brookline's governmental expenditures. With new investments due to increased student enrollment, there will continue to be budgetary pressures on the schools and therefore on the Town-School Partnership. Sustaining thoughtful investments in the public schools will require informed residents.

There are opportunities to build a set of usable benchmarking tools to use as helpful reference points for Town and School professionals and for the public. Yet the district does not currently have the resources to do this work more broadly. The School's resources have been used for benchmarking and analysis of certain issues where it is an immediate and obvious need (for instance, it is currently conducting an analysis of administration costs). This task force also acknowledges that PSB eliminated a data analyst position in prior a budget cycle, and has requested to reinstate a Director of Research and Accountability.

### ***Considerations***

This task force suggests that:

- The PSB should focus in the immediate term on the two issues of greatest immediate interest to the override: a ratio analysis for those positions included in the catch-up and enhancement categories (see section 3 above entitled "Program Supports") and technology. (These are included in the list below as numbers 1 and 2).
- The Town may also consider creating a School Benchmarking Committee (possibly in conjunction with a Town-wide benchmarking effort), seeking the assistance of an independent consultant or an area university, to create an ongoing benchmarking tool that can be posted online and used by the Town, Schools and the resident population.

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<sup>14</sup> In Oregon and California, districts achieved budget savings by expanding Cloud Computing, the adoption of Google Apps, and the use of open-source digital textbooks (<http://www.edweek.org/ew/articles/2011/01/13/16technology.h30.html>).

<sup>15</sup> "Room 229A" (labeled as such in PSB documents) at Devotion is only slightly smaller than other classrooms in use at the school. "Room 214" at Driscoll is a regular size classroom. "Computer Lab" at Heath is approximately the size of a regular classroom, but has a small jog. The room labeled "Math" (on p.6 of PSB documents) at Pierce is a normal sized classroom with a slightly odd shape. "Room 202" at Runkle is a full size classroom, intended to be integrated with the Library (Media Center) and built for this purpose. It could easily be adapted for classroom space.

The categories of benchmarking that might be useful (explored below) include: School spending (per pupil), School enrollment, Staffing over time and per pupil, Performance, Workload, Miscellaneous cost, Collective bargaining, Efficiency, and Technology.

1. *Staffing over time and per pupil:* Administration, classroom support staff, other support staff (including guidance counselors, nurses, etc.), staff related to mandated categories of service, teachers, etc.
2. *Technology:* Access to computers and devices; age of devices; administrative, teaching and learning and digital content tools used in districts; expenditures (overall and per category of expense), staffing and effectiveness.
3. *School spending per pupil:* Categorical spending (including administration, institutional leadership, classroom and specialist teaches), other teacher services, professional development, institutional materials, guidance counselors and testing, pupil services, operations and maintenance, and insurance and retirement.
4. *School enrollments:* Overall enrollment growth, growth by categories, students tuitioned outside the district, etc.
5. *Performance:* Attendance rates; graduation rates; attrition; scores on metrics (SAT scores, with participation rates; ACT scores, with participation rates; MCAS advanced and proficient, MCAS advanced; participation rates and scores on AP tests) broken down by ethnicity, socio-economic status, METCO and materials fee programs; college enrollment; college completion,
6. *Workload:* Length of schools day by school type, teacher load, class size, etc.
7. *Miscellaneous cost:* Fees for school lunches, field trips, sports programs, extended day programs, etc.
8. *Collective bargaining:* It may be helpful to cover the major elements in other collective bargaining agreements, as well as additional items that have an impact of collective bargaining in Brookline such as salary distribution, work load (sections and students taught daily), length of school day, length of school year, sick leave bank, materials fee program (charges and availability).
9. *Efficiency:* Monthly expenditures, including specific patterns on items; longitudinal trends in percentages of the budget spent on various personnel categories (including per employee category such as teachers, paraprofessionals, administrators), benefits, and non-personnel services (including utilities, training, and other costs); staffing ratios.

**Appendix A: Policies/procedures used to implement the Mooresville, NC Graded School District Technology Plan**

| (1) Policies, Procedures, & Guidelines  | LEA Policy Code or Procedure |
|---|------------------------------|
| <b>Policies Required</b>  |                              |
| A. Materials Selection Policy including internet resources ( <a href="#">GS §115c-98(b)</a> )   | BP 3200                      |
| B. Disposal or Replacement of Obsolete Equipment ( <a href="#">GS §115c-518</a> )   | BP 6560                      |
| C. Hardware and Software Procurement ( <a href="#">GS § 115c-522</a> , <a href="#">115c-522.1</a> )   | BP 6400 6450                 |
| D. Copyright and Plagiarism Policy ( <a href="#">PL §94-553</a> , <a href="#">90 Stat. 2541</a> ),  | BP 3230/7330                 |
| E. Acceptable Use Policy ( <a href="#">PL §106-554</a> )  | BP 3225/7330                 |
| F. Equipment/Materials Donation Policy ( <a href="#">GS §115C-518</a> )   | BP 6523                      |
| G. Data Privacy Policy ( <a href="#">20 U.S.C. § 1232g</a> ; <a href="#">34 CFR Part 99 (FERPA)</a> )   | BP 4700                      |
| H. Inventory Control Policy ( <a href="#">GS §115c-539</a> , <a href="#">115c-102.6A-C(5)</a> )   | BP 6500 6510                 |
| I. Access to Services Policy ( <a href="#">GS §115c-106.2</a> )   | BP 3520                      |
| J. Online Assessment and Instruction Policy   | BP 3220 3225                 |
| K. Advertising and Commercialism Policy ( <a href="#">GS §115c-98</a> )   | BP 5210 5250                 |
| L. Internet Safety and Ethical Use incl. Cyberbullying, Harassment<br>( <a href="#">Protecting Children in the 21<sup>st</sup> Century Act</a> , <a href="#">CIPA</a> , <a href="#">FERPA</a> , <a href="#">GS 115C-407</a> ) | BP 3225/7330                 |
| <b>Procedures</b>   |                              |
| A. Hardware and Software Deployment   | Guide                        |
| B. Equipment maintenance and repairs  | Guide                        |
| C. Outdated Resources and Equipment Replacement   | Guide                        |
| D. Disaster Recovery of Data and Hardware   | Guide                        |
| E. Administration of Online Courses   | Guide                        |
| F. Administration of Online Assessment  | Guide                        |
| <b>Guidelines</b>   |                              |
| A. Policy Translation   | Personnel Guide              |
| B. Use of Digital Media and Resources   | BP 3000 3230 7330            |
| C. Instructional Use of Videos  | BP 3000 3230 7330            |
| D. Development of Online Resources  | Guide                        |