



Building an Education System that Works for Everyone: Funding Reforms to Help All Our Children Thrive



By Colin Jones, Noah Berger, and Roger Hatch, July 18, 2018

The final section of this report describes several models for updating the Massachusetts education funding formula. For a downloadable spreadsheet showing how increased foundation budgets and Chapter 70 aid would be distributed across school districts under these models click [HERE](#).

Overview

In the 25 years since The Education Reform Act of 1993 became law, we have seen real progress: greater educational opportunities for more of our children and the second highest performing education system in America, according to a recent state-by-state ranking.¹ Our Commonwealth has the best educated workforce in the nation (measured by the share of workers with a bachelor's degree) and that is a cornerstone of a vibrant economy, which has the highest median wages in the country.² This success is not reaching all of our children, and over the past decade, progress has stalled. Education funding reforms that could help children in all of our communities reach their full potential would expand opportunity now and play an important role in strengthening our economy in the long run.

Our education funding formula has not been systematically updated in twenty-five years, and it fails to provide the funding needed for school districts to fund core expenses – like teachers, materials and technology, and building maintenance – at the levels within the formula that estimate the full cost of an adequate education (called the “foundation budget”). In our wealthiest districts, local taxes have been able to fill gaps, allowing schools to provide the educational supports and opportunities students need to succeed. In our low-income and many of our middle-income districts, however, the amounts schools can spend on core expenses are well below what the foundation budget specifies. This means many of our schools don't have the resources they need to implement effective strategies that could help all children succeed (for detailed discussion of evidence-based education strategies see MassBudget's “Roadmap to Expanding Opportunity”).

The findings documented in this report echo those from MassBudget's 2011 report *Cutting Class: Underfunding the Foundation Budget's Core Education Program*. In the seven years since, the issues it raised have been examined in detail by the Foundation Budget Review Commission, a statewide body of educational leaders, which confirmed that the existing school finance system fails to reflect the actual costs of providing a quality education for Massachusetts students.³ While there has been a growing consensus about the shortcomings of the existing school funding system, progress on fixing it has been elusive. While our economy is now years into a recovery, with economic conditions as good as they have been in decades, we have not seen significant new investments in our schools that would help them provide all children in the Commonwealth with a real opportunity to succeed.

Because our existing school funding structure does not properly account for the actual costs faced by schools, low- and middle-income districts are often forced to operate with fewer teachers and materials than the foundation budget calls for. Higher-income districts are generally able to meet those targets only by contributing more from local resources than the formula requires. The amount schools can spend on regular education teachers is less than the target in the foundation budget in 40 percent of middle-income districts in the Commonwealth. Those that are able to hire the appropriate numbers of educators generally do so by spending more local resources than the system requires. In the lowest-wealth districts, the conditions are even worse: collectively, those districts spend 32 percent less on regular classroom teachers than dictated in the foundation budget, our state definition of adequate spending. That can mean significantly larger class sizes and fewer specialties like advanced coursework and the arts.

The Structure of Education Funding in Massachusetts

The basic structure of the Massachusetts school finance system is simple (although some of the details are complex). For further background on these issues, see *Demystifying the Chapter 70 Formula*.⁴

The education funding formula based on Chapter 70 of the Massachusetts General Laws sets a minimum budget required for each district to provide an adequate education for its students. This formula looks at the number of students, their grade levels,

demographics, and a few other factors, and determines what it should cost to provide those students with an adequate education. The formula includes factors for student to teacher ratios, costs for materials and supplies, benefits (such as health care for employees), costs for specific populations (such as students requiring special education services), and a number of other components of school budgets. It also includes adjustments for the regional differences in personnel costs across Massachusetts. Accounting for all of those factors, the formula determines a total minimum budget for each district.

The second step is that the formula determines how much each local community should be required to contribute to its schools. These requirements are based on total personal income and property values in each community. The formula aims to require a uniform contribution as a share of resources (income and property wealth) for all communities.

In the third step, the state provides education aid to fill the gap between the minimum budget for each district and the required local contribution. Finally, there is often a fourth step where many communities spend additional local resources above their requirements to provide supports and services for students. In 2016-2017 districts spent \$2.46 billion (23.3 percent) more than their requirement across the state, with the median district spending 29 percent more.⁵ This pattern provides clear evidence that district decision-makers find the current funding amounts in the foundation budget inadequate to meet the needs of their schools.

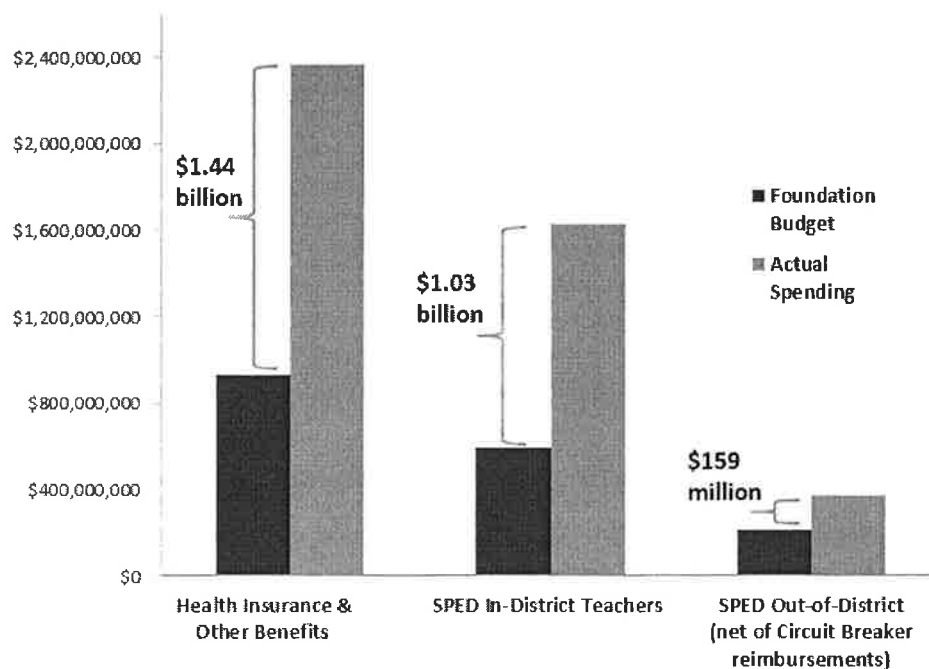
Revisiting Cutting Class - What Has Gone Wrong and the Negative Effects on Schools

The costs of specific components of the formula have not been properly kept up to date. There has been a general inflation adjustment to the formula each year, using a measure intended to reflect actual cost changes. But that is not what has happened. Most importantly, health care inflation since 1993 has been much more rapid than the inflation factor in the law. As a result, the allocation for health insurance and other benefits in the foundation budget in FY 2017 was \$1.44 billion below the actual costs borne by school districts, a gap of \$1,500 per-student across the state.⁶ Similarly, the foundation budget amount for special education services (both in districts and in specialized schools for kids with severe needs) was \$1.19 billion below actual spending in FY 2017, after accounting for the state's Special Education Circuit Breaker, which offsets some of these costs (see chart below). This works out to the foundation budget being almost \$1,300 less than actual special education spending for each student in Massachusetts. (For full details on how special education costs and total spending were calculated for this report, see Appendix I.)

This shortfall is partly because the original education reform law assumed fewer students would receive special education than was the case at that time. In addition, as is noted in the 2011 Cutting Class report, "medical advances have dramatically increased survival rates of babies born prematurely, with many more surviving children growing up through the grades with severe disabilities."⁷

Foundation Budget Undercounts Critical Costs by \$2.63 Billion

Statewide foundation budget & total spending, health insurance & other benefits, special education, FY 2017

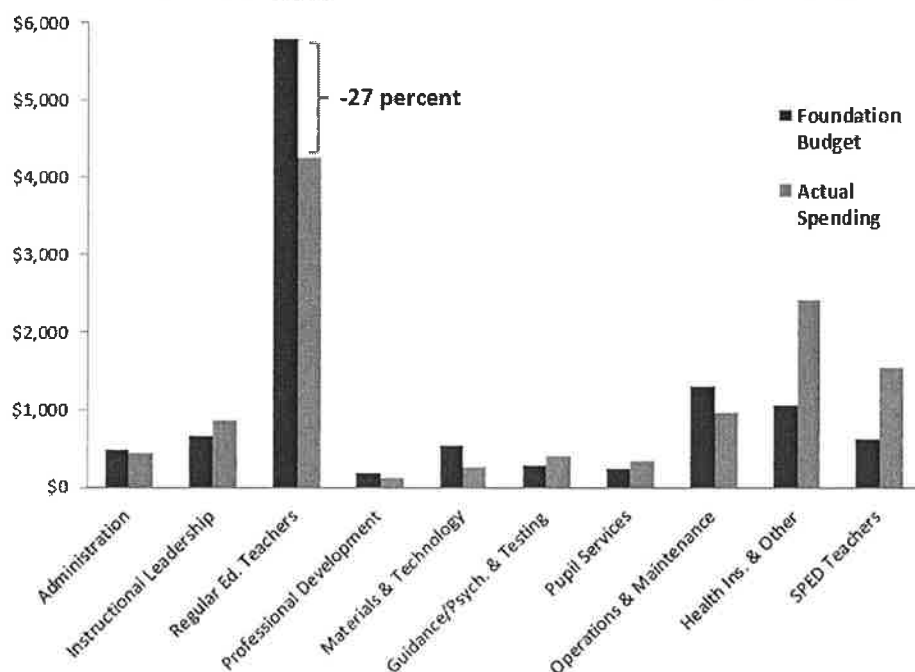


Because the foundation budget dramatically underestimates health insurance and special education costs, by \$2.63 billion in FY 2017, the funding amounts built on that foundation budget don't provide adequate aid (in combination with required local spending) to meet the costs of providing the educational program outlined in the Education Reform Act of 1993. Data from school districts on how much they can spend on each budget category shows that in many cases, districts lack the resources to hire the number of teachers the formula calls for. Among all 322 operating districts in the Commonwealth, 146 spend less on regular education teachers than the formula calls for and 284 districts spend less on materials and technology. When districts are able to hire the recommended number of teachers and have adequate resources for materials, it is generally because they are spending substantially more local resources than the state funding formula requires.

These funding problems affect all districts across the state and are most acute in lower-income communities. In those districts, local communities rarely have the resources to spend above their required amounts the way most other communities do to address shortfalls. As a result, when state aid and local contributions do not cover actual costs, districts are not able to hire the number of teachers called for in the formula, or adequately resource several other educational needs. In the lowest-income 20 percent of districts, spending on teachers per pupil is 27 percent below the amount called for in the formula and spending on materials and technology is 52 percent below the recommended amount (see chart below). This can directly affect the quality of education children receive.⁸ For example, there is strong evidence going back several decades that smaller class sizes, particularly in the lower grades, can have a significant positive effect on student performance.⁹

With Underfunding of SPED and Health Insurance Costs, Lowest-Wealth Districts Unable to Spend at Foundation on Regular Education Teachers

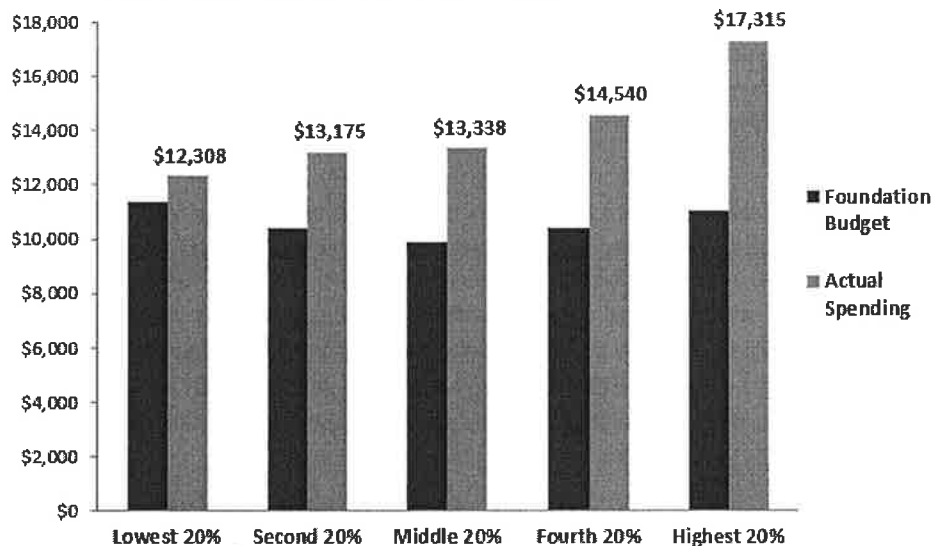
Per-pupil spending by category, lowest 20% of MA school districts in income and property wealth, FY 2017



High-income districts are generally able to make up for inadequate state aid by going beyond the system and spending more from local sources, like property taxes. While these districts suffer from the same flaws in the state funding formula as other districts, the highest-income 20 percent of districts spend 48.5 percent more than their foundation budgets using local sources. In FY 2017, the wealthiest 20 percent of districts spent \$3.18 billion in total, \$1.04 billion above their foundation budget. This translates to \$17,300 per-student in actual spending compared to a foundation budget of \$11,000 per-student (see chart below). The lowest-income 20 percent of districts — despite having greater student needs, as reflected in higher foundation budgets — are unable to spend as much above their requirements to meet student needs and current costs.

Foundation Budget is Substantially Less Than What All Districts Need, Wealthier Communities Can Spend More to Compensate

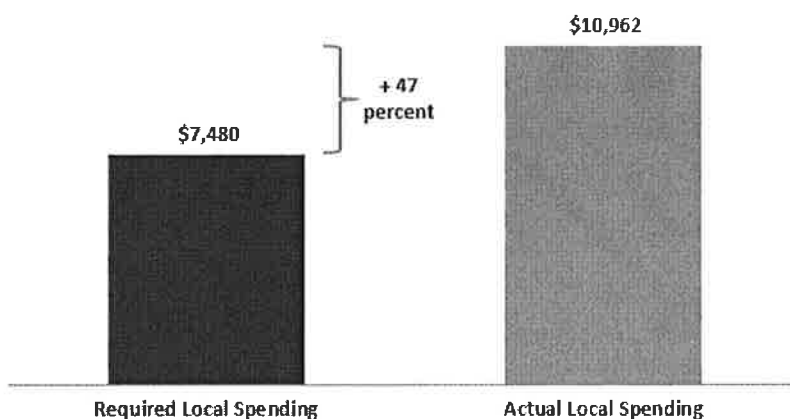
Districts clustered by community property wealth and income. Total district spending per pupil, FY 2017



In middle-income communities, we see both problems. In 40 percent of middle-income districts, the amount schools spend on regular education teachers is less than the foundation budget's target. Middle-income districts that can meet their targets do so by spending more local resources than the formula calls for. On average, middle-income districts that spend the recommended amount on teachers do so by contributing nearly half above their local spending requirement using local resources (see chart below). Even with some capacity to spend above their requirement, middle-income districts as a whole do not provide resources up to foundation budget targets in several areas, including developing the skills of teachers, maintaining buildings, and providing materials and technology for kids.

Middle Wealth Districts With Adequate Teacher Staffing Spend Almost 50% More Than Required From Local Resources

Total and required local school spending per pupil, middle-income 60% of MA school districts at or above foundation on regular education teachers, FY 2017



Source: Massachusetts Department of Elementary and Secondary Education

Over the past 15 years, there has been a significant shift in the balance of state and local funding for our public schools: the state is covering a smaller share of total costs and local cities and towns are covering a larger share. Since FY 2002, local support has increased from 59 percent of net school spending to 65 percent.¹⁰ At a time when our state and national economies are strong, when we should be able to make up lost ground in funding our schools, state aid has been stagnant in recent years and is down from historical levels. Chapter 70 aid declined by \$378 million (7.2 percent) between FY 2002 and FY 2018 (when you adjust for the inflation factor in state law).¹¹ In districts that can't afford to spend additional local resources, budget conditions have grown increasingly

strained. Districts that have contributed more from local resources have been able to make progress towards adequate education funding, but it is not clear how sustainable that will be in the next economic downturn.

Reforming School Funding and Better Supporting Students

When looking at the history of school funding in Massachusetts and the present conditions of school finance, we see clearly that there are serious problems. But in seeking solutions it may make sense to think less about the past, and more about the present and future: what are the best practices that could help our schools best serve all our children and the long term economic needs of our state? What is the best evidence about how we can help students develop the skills, knowledge and sense of purpose that they need to succeed? How do we empower students to be engaged, curious, and purposeful learners, in school and throughout their lives? How do we give teachers the tools, training, and latitude to meet the needs of their students? How do we support parents and communities to help children succeed in school and in life? What supports do students need outside of the classroom to thrive?

Being able to answer those questions effectively – and implement real solutions – requires examining what has worked in our state and across the country and listening to students, parents, teachers and school leaders. It also requires resources to fund what works. Fixing the flaws in the school funding formula could deliver significant new resources to local schools to implement effective strategies.

The Chapter 70 school funding formula determines how much state aid each district receives, but not how the money is spent by local districts. That means the elements of the formula that are adjusted are not necessarily where new funds are spent. For example, if the special education allotment increased to match actual costs that would mean the foundation budget would increase by \$1.2 billion and districts would get additional state aid. Therefore, special education costs would be properly funded in the formula and money diverted to cover special education would be available to make improvements facilitated by spending closer to foundation levels in other key areas.

This section will examine the mechanics of improving school funding in Massachusetts. We will discuss two sets of issues: different methods of providing state funding, (grant programs, the Chapter 70 formula, or a hybrid of the two) and how different changes to the formula would affect different types of districts.

Massachusetts has historically provided support for education in two ways: through the Chapter 70 formula and with grants and reimbursements for specific programs. The advantages of Chapter 70 funding are that it tends to be more stable over time and that it provides maximum flexibility to local districts to meet their needs. Grant funding, in contrast, allows the state to support policies and strategies that state leaders believe will be most effective. Grant programs can also require specific planning at the local level to develop strategies to use new resources effectively. For example, grant programs have supported efforts to expand learning time and to provide additional supports for students at risk of not passing the Massachusetts Comprehensive Assessment System (MCAS) exam.

The state could increase funding by providing grants to districts that adopt policies such as smaller class sizes in the early grades; wraparound services to help kids enter the classroom ready to learn; new school governance methods that empower teachers, students, and parents; or more personalized learning. There are many other policy ideas that have a track record of improving the student achievement.¹² Alternatively, the state could fix the Chapter 70 foundation budget so school districts receive adequate resources and are able to allocate those resources in the ways they believe will be most effective.

The state could also implement reforms that have elements of both approaches. For example, the state could increase the funding available through the Chapter 70 formula and require that districts present plans for how they would use added resources to increase achievement, particularly for disadvantaged students. The state could give districts latitude to design their plans or it could present a menu of school improvement options for districts to choose. The state could also create guidelines about who needs to be involved in developing the improvement plans: district leadership, principals, teachers, students, parents, and other members of the community. Rather than mandating this type of planning, the state could increase the capacity of our state education agencies to provide technical assistance, both on the substance of implementing various school improvement models, and on processes for doing so that include all members of the school community. In any of these models, the state could also fund targeted professional development to support school improvement.

How Different Reforms of Chapter 70 Would Affect Districts

There are several ways to adjust the Chapter 70 formula: fixing elements that are part of the formula and underfunded in all districts; addressing specific issues related to the cost of educating disadvantaged students; and increasing various types of minimum aid that primarily support higher-income districts and those with declining enrollment, to ensure all districts share in the benefit of reforms to some degree.

The core of significant Chapter 70 reform would likely address the issues identified by the Commonwealth's 2015 Foundation Budget Review Commission (FBRC), an official panel of state education leaders. The commission's recommendations included the failure of the formula to account for actual costs of health care and special education, as well as updates to better serve English Language Learners (ELL) and low-income students. Making these changes would provide additional aid across Massachusetts and would give districts significant resources to improve their schools. It would also be the first large-scale reform of the foundation budget (despite the intent in state law for regular review). Even so, implementing the FBRC recommendations would still be short of undertaking a review of all aspects of the formula.

Because of the costs associated with Chapter 70 reforms, major changes would need to be phased-in over multiple years. In the section below, we spread out implementation of reform options over five years, between FY 2019 and FY 2023. This presumes reforms would be 20 percent implemented each year until fully implemented in FY 2023. We compared the resulting changes in the foundation budget and Chapter 70 aid for four reform options to a baseline assumption for FY 2023 without the changes. Both the baseline assumption and the four reform options include the same expectations for changes in enrollment, inflation, and local wealth capacity to support schools, with differences solely attributable to the reforms. We held several other parameters relatively constant with current practices. For full explanation of the details of the FY 2019 to FY 2023 phase-in, see Appendix II.

Model 1 – Partially Implementing the FBRC with Health Insurance, Special Education and ELL Increases

The FBRC issued several key recommendations for updating the Chapter 70 formula. The group found that current inadequate health care rates should be replaced with those used within the Group Insurance Commission (GIC), the health payer of state employees.¹³ Because GIC rates are higher than current amounts in the foundation budget, and somewhat closer to what districts spend on health care, this change would better account for current costs. Roughly half the gap between actual spending on health care and foundation budget assumptions would be closed by using the GIC rates. This would still leave significant challenges with adequately resourcing health care in school budgets.

On special education, the FBRC found that the Chapter 70 formula should account for greater enrollment of special education students in districts and the rising cost of enhanced services for students with severe special education needs outside of regular districts. To do this, the commission proposed increasing our assumption of the share of full-time special education students from 3.75 to 4 percent, and from 4.75 to 5 percent in vocational schools.¹⁴ For students served through out-of-district placements, the FBRC recommended increasing the rate within the foundation budget to roughly four times the statewide per-pupil average. This is also equal to the amount of spending that must occur before districts can receive reimbursements from our state's separate Circuit Breaker formula, which is specifically designed to help districts cover these high costs.¹⁵

Finally, the FBRC also outlined problems with the rates associated with ELL students. Specifically, the commission highlighted that there is currently a lower increment of additional funding for high school and elementary ELL students relative to kids in the middle grades. This is despite the need to get elementary ELL students caught up with peers from the outset, and the significant challenges of teaching teens who are long-term ELL or those who arrive in Massachusetts schools in the upper grades without English skills.

The FBRC proposed converting funding for ELL students in the formula from its current separate rate of roughly \$9,450 for all ELL students, which has different implications across grades, to a standard extra amount above the regular rates (e.g. elementary) equal to roughly \$2,300 per student (the current difference between the ELL rate of \$9,450 and the regular middle school rate of \$7,130 per student).

This FBRC proposal for ELL students would involve changing the structure of the Chapter 70 formula. To facilitate more straightforward calculations using the existing structure, this report estimates the cost of increasing the entire ELL rate for all students by roughly 7 percent, to \$10,140. This would have a similar effect on total ELL rates compared to what the FBRC proposed, but would spread additional funding among ELL students of all ages. Because districts serve ELL students across grades K-12, the practical difference of our methodology compared to the FBRC proposal is likely not a major concern.

If the Commonwealth implemented the FBRC proposals on health care and special education, along with our slightly modified ELL option, over five years through FY 2023, the statewide foundation budget would be \$802 million (7.0 percent) higher than without the changes, and statewide Chapter 70 aid would increase by \$308 million (5.9 percent). Additionally, the contributions of local cities and towns would also increase under this reform scenario. However, because many districts already spend above their required contribution, an increased requirement would not necessarily require additional local spending. In the vast majority of cases, existing local spending would be counted towards the higher requirement. The spreadsheet at this link shows how that increased funding would be distributed across all districts.

Model 2 – Partially Implementing the FBRC with Health Insurance, Special Education, ELL and Minimum Aid Increases

Under the first approach to updating the Chapter 70 formula, 167 districts across the state would see an additional \$1.8 million each on average in new state aid in FY 2023. However, 155 districts would not gain additional aid.

To support all districts, the formula could be revised in a manner that provides a minimum floor for new aid across the state. Our second option includes two components to specifically help districts that would not see major aid increases with the baseline option.

First, all districts could be provided more minimum aid, the typical per-student increase that all districts are guaranteed each year regardless of other factors in the formula. In the current 2017-2018 school year, the minimum increase amount is \$30. Our second model raises that amount to \$50 for each student each year through FY 2023.

The other component of minimum aid included in our second model addresses a specific issue for districts that pay significant tuition to charter schools. When students leave districts to attend charter schools, districts pay tuition roughly equal to their district per-pupil spending.¹⁶ State reimbursements offset some of this through a specific formula, however it is currently only about half funded, with a more than \$74 million shortfall.¹⁷

While districts are supposed to get at least 17.5 percent of their foundation budgets in Chapter 70 aid, districts that pay tuition to charter schools are only guaranteed that their gross Chapter 70 aid is 17.5 percent of their foundation budgets, even if the amount of Chapter 70 aid they keep after paying charter tuition is less.¹⁸ The second part of our minimum aid option would ensure all districts get at least 17.5 percent of their foundation budget in Chapter 70 aid after accounting for charter tuition not reimbursed through the formula.

Collectively, this minimum aid approach would provide extra aid for the 155 districts that otherwise did not see gains in the prior scenario. An additional 63 districts that received some new aid in the first model would see a further increase under the second one. Together these 218 districts would receive \$1.0 million in new aid on average. Large urban districts that serve large numbers of low-income students but also have relatively high levels of wealth (and therefore don't receive significant new aid in the first model) would gain the majority of this additional aid. It would also be possible to deal with charter tuition issues apart from the Chapter 70 formula, through the Charter School Reimbursement line item in the state budget. That approach would not be established in Chapter 70 each year, but could help all districts with charter costs, regardless of whether a district drops below the 17.5 percent aid threshold.

Under this second model, Chapter 70 aid would be \$530 million higher at the statewide level in FY 2023 compared to the baseline. This is along with the aforementioned \$802 million increase in the statewide foundation budget. This combines implementing the FBRC with a specific minimum aid approach. Its added cost over the first model is \$221 million. The spreadsheet at this link also shows how this increased funding would be distributed across districts.

In the table below, we list one sample district at each wealth level (districts are split into five groups from the least wealthy 20 percent of cities and towns, in terms of property values and income, to the wealthiest 20 percent). These five districts are Fitchburg, Fairhaven, Easthampton, Swampscott, and Concord (for full details on these districts, see the links to the Department of Elementary and Secondary Education district profiles). In addition to being economically diverse, this group includes districts from many regions of the state and varying enrollment levels (from roughly 1,700 students in Easthampton to 6,200 in Fitchburg). For each district, the table below lists the financial impact of the changes to the education funding formula outlined in Model 1 and Model 2 on the foundation budget and Chapter 70 aid for FY 2023, compared to the baseline for that year without the reforms.

Effects of Model 1 and 2 on Chapter 70 Aid and Foundation Budget – 5 sample districts						
District (FY 2023 enrollment projection)	Wealth Quintile	FY 2023 Baseline Foundation Budget	FY 2023 Baseline Chapter 70 Aid	FY 2023 Increase in Foundation Budget with Model 1 and 2	FY 2023 Increase in Chapter 70 Aid with Model 1	FY 2023 Increase in Chapter 70 Aid with Model 2
Fitchburg (6,233)	Bottom 20% of Wealth	\$78,884,699	\$62,358,891	+ \$5,117,074	+ \$4,033,410	+ \$4,033,410
Fairhaven (1,776)	Second 20%	\$20,130,480	\$8,579,746	+ \$1,481,922	+ \$685,999	+ \$685,999
Easthampton (1,736)	Middle 20%	\$19,790,860	\$7,926,222	+ \$1,447,348	+ \$319,849	+ \$437,500
Swampscott (2,089)	Fourth 20%	\$22,166,752	\$3,782,708	+ \$1,767,965	+ \$353,729	+ \$706,680
Concord (2,059)	Top 20% of Wealth	\$20,795,632	\$3,572,185	+ \$1,724,717	+ \$342,031	+ \$386,875

Model 3 – Fully Implementing the FBRC with Health Insurance, Special Education, ELL and Low-Income Increases

The districts in our Commonwealth that face the greatest challenges in preparing kids to succeed are those that educate the largest share of low-income students. These are also the communities that tend to have the least capacity to raise local funds for education and accordingly some of the largest shortfalls in critical areas of the foundation budget. To increase the chances that kids in all communities have the opportunity to reach their full potential, the state could increase the allotments for low-income students in the foundation budget. This would primarily affect lower-income districts but would also help many middle- and upper-income districts that also serve some low-income students.

The FBRC proposed increasing the funding rates in our formula for low-income students. It found a range of 50 to 100 percent in extra funding, in national literature and state practice, a reasonable range to consider.¹⁹ This increased weighting in school funding formulas is provided to facilitate multiple concurring supports within schools. Together these supports, such as extra tutoring, after school and summer learning opportunities, social services, and improved professional development for educators, have the potential to help raise the performance of kids in poverty who often face multiple barriers to success in education. However, despite this guidance, the FBRC did not estimate the cost of a specific change to the low-income components of Chapter 70. The Commission noted that the recent change in the poverty measure across the state and other factors would have to be considered, leaving the specifics to further legislation.²⁰

In our third model for updating Chapter 70, we take this guidance and translate it to a specific change to the low-income component of the foundation budget and resulting Chapter 70 aid. Specifically, this option increases the low-income student allotment by 70 percent to between roughly \$6,500 - \$7,100, depending on the concentration of poverty in a district. This is compared to the current rates of between roughly \$3,800 - \$4,200 in the 2017-2018 school year. This rate would also rise with the standard inflation factor in the formula in the future. This proposed increase is within the upper end of the range suggested by the FBRC, but is less pronounced than bringing it up to 100 percent, the largest change the commission discussed.

The impact of increasing the low-income rate by this amount to complete the recommendations of the FBRC is very significant. Under this larger reform, combined with changes to health insurance, special education, and ELL, the foundation budget would be \$1.79 billion (15.6 percent) above baseline by FY 2023. More than half of the difference, \$987 million, is attributable to increasing the low-income rate. The total increase is heavily influenced by our largest urban districts with large numbers of low-income kids, such as Boston (\$191 million), Springfield (\$95 million), Worcester (\$79 million), as well as Lawrence and Brockton (which see \$49 million increases in each of their foundation budgets under Model 3). Chapter 70 aid would be \$888 million (16.9 percent) higher than baseline under this scenario in FY 2023, making it 11 percent costlier than Model 1.

As mentioned above, the required contributions of local cities and towns would rise under the reforms. Because many districts already spend above their required contribution, in the vast majority of cases, existing local spending would simply be counted towards a higher requirement. The spreadsheet at this link shows the additional effects across the Commonwealth of this third option.

Model 4 – Fully Implementing the FBRC with Health Insurance, Special Education, ELL, Low-Income and Minimum Aid Increases

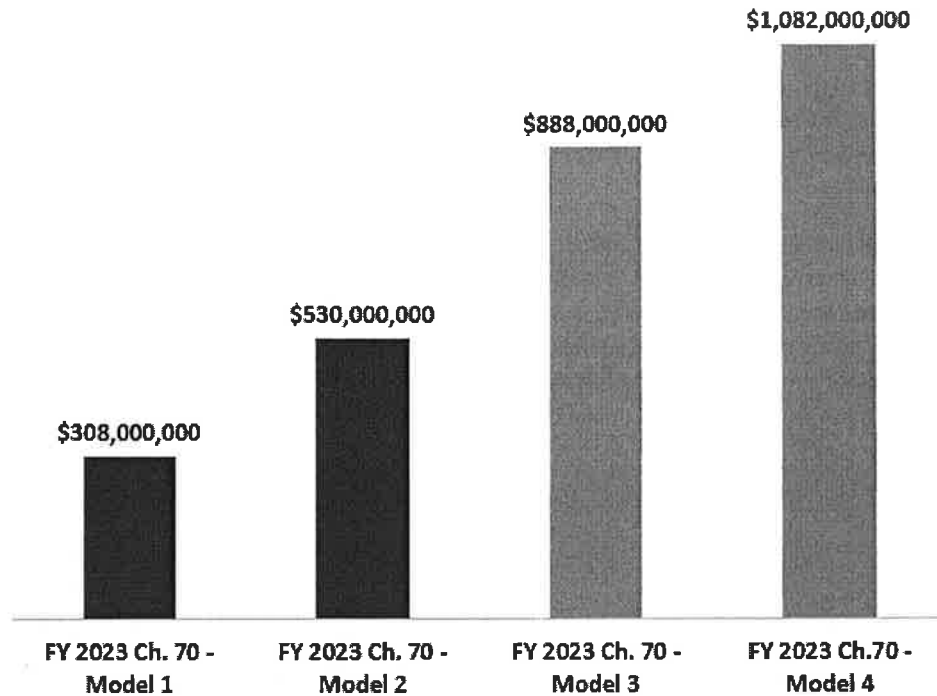
The final model we present for reforming Chapter 70 combines all elements of the prior scenarios, including implementing the FBRC recommendations, adding a 70 percent increase to the rate for low-income students, as well as the minimum aid option discussed above that addresses districts that would not otherwise receive aid, and those whose aid amounts drop below 17.5 percent after accounting for tuition paid to charter schools.

The impact of combining these options would, like Model 3, increase the foundation budget by \$1.79 billion over baseline in FY 2023. By adding minimum aid, however, total Chapter 70 funding under Model 4 would increase by a total of \$1.08 billion (20.6 percent over baseline) by FY 2023 (see chart below). The table below shows the impact of our third and fourth models on the five sample districts discussed above, from various parts of the state and with varying enrollment and wealth levels. The spreadsheet at this link also shows the additional effects across the Commonwealth of this fourth model.

Effect of Model 3 and 4 on Chapter 70 Aid and Foundation Budget – 5 sample districts						
District (FY 2023 enrollment projection)	Wealth Quintile	FY 2023 Baseline Foundation Budget	FY 2023 Baseline Chapter 70 Aid	FY 2023 Increase in Foundation Budget with Model 3 and 4	FY 2023 Increase in Chapter 70 Aid with Model 3	FY 2023 Increase in Chapter 70 Aid with Model 4
Fitchburg (6,233)	Bottom 20% of Wealth	\$78,884,699	\$62,358,891	+ \$15,950,349	+ \$12,776,426	+ \$12,776,426
Fairhaven (1,776)	Second 20%	\$20,130,480	\$8,579,746	+ \$3,424,906	+ \$1,558,614	+ \$1,558,614
Easthampton (1,736)	Middle 20%	\$19,790,860	\$7,926,222	+ \$2,991,630	+ \$717,346	+ \$717,346
Swampscott (2,089)	Fourth 20%	\$22,166,752	\$3,782,708	+ \$2,817,045	+ \$563,925	+ \$890,269
Concord (2,059)	Top 20% of Wealth	\$20,795,632	\$3,572,185	+ \$2,136,933	+ \$424,606	+ \$459,013

Fully Implementing FBRC Recommendations Would Provide Significantly More Aid to Help All Schools Provide a High-Quality Education

Additional statewide Chapter 70 Aid over baseline in FY 2023, by implementing each reform model



Conclusion

When all children have access to high quality education, they have a greater opportunity to lead successful, fulfilling and productive lives. Our economy will be stronger, and our democracy, as our founders taught us, more secure.²¹ That education serves not only to expand opportunity and strengthen our economy, but also to create a more vibrant and stable democracy may be more important now than ever.

This paper aims to provide data and analysis that can support a broad debate about how we as a Commonwealth can create great public schools in every community. The importance of meeting that challenge was described by our state Supreme Court in its interpretation of our state Constitution 25 years ago: "What emerges also is that the Commonwealth has a duty to provide an education for all its children, rich and poor, in every city and town of the Commonwealth at the public school level, and that this duty is designed not only to serve the interests of the children, but, more fundamentally, to prepare them to participate as free citizens in a free State to meet the needs and interests of a republican government, namely the Commonwealth of Massachusetts."²²

MassBudget thanks the Nellie Mae Foundation for their generous support that helped to make this research possible.



Appendix I – Derivation of Actual and Special Education Spending

The foundation budget is a measure that connects to the general fund expenditures of school districts. However, the Department of Elementary and Secondary Education (DESE) published per-pupil expenditures show spending from all funds, including federal, state, and private grants; revolving funds, athletic funds, school lunch funds; and other local receipts for specific purposes. The published data do allow the general fund spending to be isolated separately, which we did here.

To analyze the distinct issues of regular education and special education, consistent with the 2011 Cutting Class report, a separate special education teaching category was needed. We obtained the necessary data from DESE. The regular education category also included the vocational and "undistributed" programs (so called because they cannot be specifically assigned to any particular program). Also, for consistency, these "other teaching" functions were included in teaching:

- Medical/therapeutic services,
- Substitute teachers,
- Non-clerical paraprofessional/instructional assistants, and
- Librarians and media center directors.

To compare to the FY 2017 foundation budget, a similar disaggregation was done. This was a matter of setting special education rate lines to zero for the "teaching" and "other teaching" categories to determine their impact on the foundation budget. Tuition for special education also needed to be separated into special education so it could be compared just to that specific component of the foundation budget

The FY 2017 expenditure data were missing eight mostly small districts whose data had not yet been approved. For these, we used their FY 2016 data for both spending and foundation.

Appendix II – Five-Year Chapter 70 Projections

There has never been a five-year projection of the current Chapter 70 formula. One reason for this is that to project a certain number of years forward, one must run each intervening year, which greatly complicates the analysis. The formula is cumulative; each year it builds upon factors calculated in the previous year. Each year's change in foundation, contribution, and aid resets the base for the next year's calculations.

Although the formula itself has a lot of moving parts, the underlying data that needs to be projected is limited to just a handful of variables. Here are those measures, and a brief description of the underlying assumptions used to arrive at them.

Enrollment uses a five-year historical average of each district's annual change in enrollment, with the latest year being weighted five times more heavily than the first.

Inflation is a federal measure of goods and services purchased by state and local governments. Chapter 70 uses the third calendar quarter (July through September) to arrive at an annual rate to apply to the foundation budget. The third quarter for 2017 is already published and stands at 2.64 percent — considerably higher than previous years. Because the first year of the baseline projection is FY 2019, it incorporates this figure. For later years, a rough weighted average of 1.5 percent was computed and applied to each subsequent year.

Foundation budgets for each district are the sum of a particular year's annual percentage increase in enrollment, plus the uniform inflation rate used for all districts in a particular year.

The municipal revenue growth factor is calculated annually by the Massachusetts Division of Local Services, and measures how much local revenue growth will be available to be spent upon schools and other municipal services. These projections use five-year weighted averages specific to each city and town.

Local property values (equalized valuations) are calculated biennially by the Division of Local Services. In this case a three-point weighted average was used, measuring the change between 2010 to 2012, 2012 to 2014, and 2014 to 2016.

Residential income for each city and town is calculated by the Massachusetts Department of Revenue annually, based upon personal income tax reporting. A five-year weighted average was used.

Baseline Projections

Aside from these data sources, a few additional assumptions about the formula calculations needed to be made. For the baseline projection, minimum aid was set to zero, even though past practice has been to include some measure of new per-pupil minimum aid.

The target effort reduction percentage was held at the same 85 percent level where it had stood for FY 2017 and FY 2018. The only aid increases are those required to keep districts at their foundation budgets—the basic core of the formula known as foundation aid.

The Four Proposals Based on FBRC Recommendations

Health Insurance: In FY 2018, there was progress toward implementing the FBRC recommendation adding 15 percent (\$100 million of the suggested \$667 million increase) to the final foundation budget. These projections are phased using one-fifth of the remaining \$567 million each year through FY 2023.

Special Education: The FBRC recommended increasing the assumed enrollment percentage from 3.75 percent to 4 percent of foundation enrollment (assuming 25 percent of the child's time is spent in special education instruction, equating to 16 percent of total headcount). The cost in these projections was roughly \$61 million. Also, the FBRC recommended raising the out-of-district rate assumption. This would have resulted in a rise in the rate from \$26,696 to \$34,309 in FY 2018 which would have added \$67 million to that year's foundation budget.

English Language Learners: As an approximation of the cost of implementing the FBRC, FY 2018 ELL rates were raised 7.2 percent (see explanation in text).

Low-Income Students: The FBRC recommended increased rates of between 50 to 100 percent. In two of our options we chose 70 percent, again, to roughly approximate the impact.

Inflation: All of these options are inflated by the 2.64% inflation rate for FY 2019, the first year of the projection. Because these amounts are built into the base foundation budget for future years' projections, they are automatically raised each year by the estimated 1.5% inflation rate.

Charter School Tuition Minimum Aid in Models 2 and 4: The goal of this option is to ensure that districts would have 17.5 percent of their foundation budgets available for net school spending, after removing their net costs for Commonwealth charter schools. The net cost was calculated based upon preliminary FY 2018 charter calculations from December 2017, and equaled foundation charter tuition minus charter reimbursement.

For example, Boston's tuition was \$164.5 million. Its net cost after its preliminary charter reimbursement of \$15.0 million was \$149.5 million. With a projected FY19 foundation budget of \$871.3 million it would need \$152.5 million in Chapter 70 aid to retain 17.5 percent after net charter costs. With the \$50 per pupil minimum aid increase, its initial FY 2019 aid computation was \$221.3 million. But after subtracting the \$149.5 million net charter cost, its remaining aid was only \$71.8 million, short of its 17.5 percent goal by \$80.7 million—the amount needed to bring it back to the \$152.5 million figure.

To fully project this proposal would have required projecting each year's charter tuition through FY 2023—a task more daunting than projecting Chapter 70 itself. For years FY 2020 through FY 2023, the FY 2018 net charter cost was used each year, but compared to each year's updated aid calculation to determine charter minimum aid.

In both Models 2 and 4, FY 2019 showed large increases due to this component. But those were built into each district's base aid, so in the remaining years, the cost was much lower.

Charter Aid Component, Projected Cost FY 2019 through FY 2023 (millions)

<u>Year</u>	<u>Model 2</u>	<u>Model 4</u>
FY19	\$115.9	\$116.9
FY20	\$3.5	\$9.4
FY21	\$3.7	\$9.9
FY22	\$4.1	\$10.6
FY23	\$4.4	\$11.0

¹ The Annie E. Casey Foundation. "2018 Kids Count Data Book: State Trends in Child Well-Being. 2018. pg 32-33
<http://www.aecf.org/m/resourcedoc/aecf-2018kidscountdatabook-2018.pdf#page=32>

² Jeremy Thompson. "State of Working Massachusetts 2017." MassBudget. 2017. pg. 5. <http://massbudget.org/reports/swma/education-economy.php>

³ General Court of the Commonwealth of Massachusetts. "Foundation Budget Review Commission Final Report." 2015. pg. 7.
<http://www.doe.mass.edu/finance/chapter70/FBRC-Report.pdf>

⁴For a detailed description of the system, see "Demystifying the Chapter 70 Formula: How the Massachusetts Education Funding System Works." http://www.massbudget.org/report_window.php?loc=Facts_10_22_10.html

⁵Massachusetts Department of Elementary and Secondary Education, Office of School Finance. "Chapter 70 District Profiles." 2018. <http://www.doe.mass.edu/finance/chapter70/>

⁶Total spending figures presented here are limited to traditional district spending and do not include students who attend charter schools or students who enroll in districts outside of their city or town of residence through school choice. However, Foundation Budget totals for these students are included in the district totals for the district of residence. This has the effect of somewhat understating the gap between foundation budget levels and total spending on health insurance and special education.

⁷Luc Schuster. "Cutting Class: Underfunding the Foundation Budget's Core Education Program. MassBudget. 2011. pg. 17. http://www.massbudget.org/report_window.php?loc=Cutting_Class.html

⁸James Vaznis. "Struggling Brockton Schools May Sue the State." Boston Globe. March 17, 2018. <https://www.bostonglobe.com/metro/2018/03/17/with-schools-struggling-brockton-considers-suing-state/dX0AKkDZS2nEZWly13PFOI/story.html>

⁹Colin Jones. "The Right Size for Learning." MassBudget. 2015. pgs. 1-2. http://massbudget.org/report_window.php?loc=The%20Right%20Size%20for%20Learning.html

¹⁰Massachusetts Department of Elementary and Secondary Education. "Chapter 70 Program School Finance: Chapter 70 District Profiles." <http://www.doe.mass.edu/finance/chapter70/>

¹¹ MassBudget Budget Browser. "K-12: Chapter 70 Aid (Comparisons Adjusted by Inflation – Government Purchases)." 2018. <http://massbudget.org/browser/subcat.php?c1=2&c2=18&id=K-12%3A+Chapter+70+Aid&inflation=ipd&budgets=519b18b17b16b15b14b13b12b11b10b9b8b7b6b5b4b3b2b1#comparisons>

¹²"Roadmap to Expanding Opportunity: Evidence on What Works in Education." MassBudget and the Rennie Center. 2014-2017. www.expandingopportunity.org

¹³General Court of the Commonwealth of Massachusetts. "Foundation Budget Review Commission Final Report." 2015. pg. 7. <http://www.doe.mass.edu/finance/chapter70/FBRC-Report.pdf>

¹⁴General Court of the Commonwealth of Massachusetts. "Foundation Budget Review Commission Final Report." 2015. pg. 8. <http://www.doe.mass.edu/finance/chapter70/FBRC-Report.pdf>

¹⁵MassBudget's Children's Budget. "Special Education Circuit Breaker." MassBudget. 2016. <http://children.massbudget.org/special-education-circuit-breaker>

¹⁶Luc Schuster. "Charter School Funding, Explained." MassBudget. 2016. pgs. 1-4 http://massbudget.org/report_window.php?loc=Charter-School-Funding,-Explained.html

¹⁷MassBudget. "Analyzing the Senate Ways and Means Committee Budget for FY 2019." 2018. pg. 7. http://www.massbudget.org/report_window.php?loc=Analyzing-the-Senate-Ways-and-Means-Budget.html#K-12-Ed

¹⁸Noah Berger and Jeff McLynch. "Public School Funding in Massachusetts Where We Are, What Has Changed, and Options Ahead. MassBudget. 2006. pg. 11 http://www.massbudget.org/reports/pdf/Public_School_Funding-Where_We_Are_What_Has_Changed_-_FINAL.pdf

¹⁹General Court of the Commonwealth of Massachusetts. "Foundation Budget Review Commission Final Report." 2015. pg. 11. <http://www.doe.mass.edu/finance/chapter70/FBRC-Report.pdf>

²⁰General Court of the Commonwealth of Massachusetts. "Foundation Budget Review Commission Final Report." 2015. pg. 11. <http://www.doe.mass.edu/finance/chapter70/FBRC-Report.pdf>

²¹Noah Berger and Peter Fisher. "A Well-Educated Workforce is Key to State Prosperity." Economic Policy Institute. 2013. <http://www.epi.org/publication/states-education-productivity-growth-foundations/>
General Court of the Commonwealth of Massachusetts. "Massachusetts Constitution. Chapter V Section II." 1780 <https://malegislature.gov/Laws/Constitution#chapterVSectionII>

²²Massachusetts Department of Elementary and Secondary Education. "McDuffy Case Reports." pgs. 3-4
http://www.doe.mass.edu/finance/chapter70/McDuffy_report.doc

This research was funded in part by the Annie E. Casey Foundation. We thank them for their support but acknowledge that the findings and conclusions presented in this report are those of MassBudget alone, and do not necessarily reflect the opinions of the Foundation.



MASSACHUSETTS BUDGET AND POLICY CENTER

15 COURT SQUARE, SUITE 700 | BOSTON, MA 02108 | (617) 426-1228

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