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# **An Independent Review of Maine's Essential Programs and Services Funding Act: Part 2**

Lawrence O. Picus  
Allan Odden  
Michael Goetz  
Anabel Aportela  
Michael Griffith

December 1, 2013  
(Revised 12-24-2013)



# **An Independent Review of Maine's Essential Programs and Services Funding Act: Part 2**

**Presented to the  
Maine Legislature's  
Joint Standing Committee on Education and Cultural Affairs**

**December 1, 2013  
(Revised 12-24-2013)**



**Prepared by Lawrence O. Picus and Associates**

**Lawrence O. Picus  
Allan Odden  
Michael Goetz  
Anabel Aportela  
Michael Griffith**

4949 Auckland Ave.  
North Hollywood, CA 91601  
[www.picusodden.com](http://www.picusodden.com)  
[lpicus@picusodden.com](mailto:lpicus@picusodden.com)



## Table of Contents

Executive Summary, Part 2.....	i
Summary of Part 1 Findings .....	ii
Overall Funding System .....	ii
Comparison With Other States .....	iii
Equity Analysis .....	iv
Tribal Funding .....	v
Comparison of EPS with EBM .....	vi
Teacher Compensation.....	vi
Summary of Part 2 Findings .....	vii
Alternative Measures of Fiscal Capacity .....	viii
Professional Judgment Panels .....	ix
Case Studies of Improving Schools .....	xi
Simulating Options to the EPS Funding System .....	xii
Regional Cost Adjustments.....	xx
Chapter 1: Introduction .....	1
Chapter 2: Alternative Measures of Fiscal Capacity .....	3
Policies that Address the Needs of High Property-Wealth SAUs with Low-income Per-Capit ....	7
Introduction.....	7
Maine’s Current Funding System .....	8
Issues Faced by HPW/LHI SAUs .....	8
The Impact of Excluding Income .....	8
Historical Context .....	9
State Remedies.....	10
Direct Aid to School Districts.....	10
Direct Aid to Property Tax Payers.....	18
Homestead Exemptions .....	19
Conclusion .....	20
Appendix I .....	21
State Circuit Breaker Programs .....	21

Appendix II .....	24
Homestead Property Tax Exemptions .....	24
Chapter 3: Stakeholder input .....	33
General Commentary on Maine School Funding .....	45
Recalibration of the Elements of the EPS .....	47
Class Size and Staffing Ratios .....	47
Chapter 4: Case Studies of Improving Schools .....	63
School Visits .....	64
Findings.....	64
Clear Focus on Instruction in Core Subject Areas .....	64
Research-Based Curriculum Used School Wide .....	65
Instructional Coaches and Ongoing Professional Development.....	65
Collaborative Time with Other Teachers.....	65
Multiple Assessments to Inform Instruction, Plan Interventions and Monitor Progress .....	66
Additional Instructional Time for Struggling Students .....	66
Small Class Sizes .....	66
Not Part of the EB Model, but Also Observed .....	66
Conclusion .....	67
Central Aroostook Jr.-Sr. High School Case Study .....	69
Etna-Dixmont Elementary School Case Study .....	81
Peninsula Elementary School Case Study .....	93
Phillips Elementary School Case Study.....	103
Windsor Elementary School Case Study .....	113
Chapter 5: Simulating Options to the EPS.....	123
Introduction.....	123
Simulating the Evidence Based Model .....	124
Simulation of the EB model.....	125
Simulation of the Committee’s EB Model.....	129
Simulating the 100% SPED Alternative .....	130
Chapter 6: Regional Cost Adjustments.....	133
Chapter 7: Conclusions .....	143

Summary of findings from Part 1 of the study .....	143
Comparison with Other States .....	143
Equity Analysis .....	144
Tribal Funding .....	145
Comparison of EPS with EBM .....	146
Teacher Compensation.....	147
Summary of Findings From Part 2 of the Study .....	148
Alternative Measures of Fiscal Capacity .....	149
Professional Judgment Panels.....	150
Case Studies of Improving Schools .....	152
Simulating Options to the EPS Funding System .....	153
Regional Cost Adjustments.....	154
Conclusions.....	155
References.....	157
Appendix A.....	159
Appendix B.....	181
Appendix C .....	201
Appendix D.....	203
Appendix E .....	227





# EXECUTIVE SUMMARY, PART 2<sup>1</sup>

This document reports the findings of Part 2 of *An Independent Review of Maine's Essential Programs and Services Funding Act* (EPS) conducted by Lawrence O. Picus and Associates under contract with the Maine Legislative Council, and submitted to the Joint Standing Committee on Education and Cultural Affairs. The study, in progress between October 1, 2012 and December 1, 2013 (with anticipated presentations to the Legislature during its 2014 session), examines multiple aspects of the EPS.

Part 1 of the study<sup>2</sup>, conducted between October 2012 and March 2013, included the following:

- A detailed description of the operation of the EPS
- Comparative analyses of school funding systems in other states
- An analysis of traditional school finance equity measures as applied to Maine
- A specific analysis of funding for Native American Tribal schools
- A comparison of resource capacity and use by SAUs compared to our Evidence-Based model (EB) of school finance – a model that relies on research based approaches to ensure schools have the capacity to improve student learning and reduce achievement gaps
- A discussion of alternative approaches to teacher compensation

Part 2 of the study, completed since April 1, 2013, includes the following:

- A discussion of alternative measures of fiscal capacity
- A summary of feedback we received from Professional Judgment Panels and Stakeholder Forums
- An analysis of the case studies we conducted in five schools identified as showing strong improvement in student performance
- A discussion of our simulation model which:
  - Estimates the SAU by SAU and total cost of the EB model as well as state-wide total costs
  - Offers an analysis of the impact of a multiplicative income index as part of the fiscal capacity measure in the funding distribution system
- A description of an alternative regional cost adjustment for Maine's funding system.

Before describing the Part 2 findings, we recap our findings from Part 1 of the study.

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<sup>1</sup> This document is the second and final of two reports submitted to the Maine Legislature's Joint Standing Committee on Education and Cultural Affairs evaluating the state's Essential Programs and Services Funding Act.

<sup>2</sup> An Independent Review of Maine's Essential Programs and Services Funding Act: Part 1. Available at: <http://www.maine.gov/legis/opla/EPSReviewPart1%28PicusandAssoc%20%294-1-2013.pdf> and at [http://picusodden.com/wp-content/uploads/2013/09/Review\\_of\\_Maines\\_Essential\\_Programs\\_and\\_Services\\_Program\\_-\\_Part\\_1.pdf](http://picusodden.com/wp-content/uploads/2013/09/Review_of_Maines_Essential_Programs_and_Services_Program_-_Part_1.pdf)

## SUMMARY OF PART 1 FINDINGS

*Overall, in our Part 1 analyses, we found that the Maine's per pupil expenditures for K-12 education are among the highest in the United States – although they are comparatively low among the six New England States. Moreover, the distribution of revenues to local districts (SAUs) meets accepted levels of equity based on current school finance literature. While expenditures have grown in recent years, student performance has been relatively flat. Test scores compared to the rest of the country are relatively strong but about average in comparison with the other states in New England. The system operates well, but we identified a number of issues the state may want to consider as it moves forward in its efforts to improve learning for all children in its public schools.*

Each major topic in Part 1 is summarized below.

### Overall Funding System

Maine's Essential Programs and Services Funding Act (EPS) controls the way SAUs receive their revenues. The program is based on an adequacy model – that is one that identifies the resources needed to provide educational services that will enable students to meet Maine's educational proficiency standards (the *Learning Results*), and then through a combination of state and local tax sources provides revenue to purchase those resources. SAUs are able to raise additional funds through property tax levies. The EPS has been used to distribute revenues to SAUs since the 2005-06 fiscal year. Details regarding the operation of the EPS are provided in chapter 2 of this report.

As part of our study, we identified the following issues of concern to state policy makers and education stakeholders:

- Is the EPS Adequate and Accurate? Perhaps the primary question addressed by this study is whether the EPS computations accurately estimate adequate funding levels to provide a comprehensive education system in Maine, and do the *Learning Results* meet the requirements of such a comprehensive system.
- Are the adjustments to the EPS computations fair? These include: the complexity of the special education adjustment; the regional cost adjustment and the reduction of Federal Title I receipts in computing each School Administrative Unit's (SAU)<sup>3</sup> total allocation. In addition, several individuals indicated that there are concerns with the adjustments for small schools in the model.

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<sup>3</sup> School Administrative Units (SAUs) are the district level unit of analysis in this document. Maine has six categories of school districts, the organization of which has much to do with the location and historical development of each district. However, for the purposes of funding the EPS, all can be identified as SAUs, so we have used that designation for the district level of analysis throughout this report.

- Do SAUs rely too heavily on local property taxes for revenues above the EPS funding level? A concern frequently expressed was the amount of total K-12 education expenditures that are outside of the EPS system and currently funded completely through local property taxes.
- Should the state fully fund its share of 55% of the EPS, and what is the appropriate split between state and local revenue sources in Maine? A voter-approved initiative requires the state to fund 55% of the costs of the EPS system. To date, state funding has not reached that goal, and to some extent the state share has declined in recent years. Regardless of whether the state share is fully funded, the relative share of state (generally sales and income tax funded) and local (generally property tax funded) contributions to education funding is of utmost importance. The question includes both the policy issue of appropriate shares, as well as the relative distribution – and hence funding equity – across individual SAUs. The analyses in Chapters 3 and 4 of this report provide national and New England based comparisons showing how other states address this issue along with an analysis of the school finance equity of the current system.
- What is the appropriate measure of SAU fiscal capacity? A common concern across the state has been about areas of the state that are property wealthy but have low per capita incomes creating high property taxes for year round residents of these areas. To assess this issue we measure the fiscal neutrality and equity of the funding system through a school finance lens and consider alternative measures of fiscal capacity to address this issue.

As we anticipated additional concerns emerged as the study progressed and we addressed them as appropriate – and as prioritized by the Committee.

## **Comparison With Other States**

Maine's K-12 education system has witnessed a steady increase in spending over the past several years. However, this additional funding appears to have only resulted in modest improvements in the academic performance of the state's students. The findings from our interstate comparison can be summarized as follows:

### *Educational Expenditures*

- From 1999-2000 to 2009-2010 state and local revenue for public K-12 education in Maine grew from \$1.62 billion to \$2.35 billion - an increase of just over \$728.6 million or 45%. During the same time period, state and local revenue for K-12 education in all 50 states increased by 49.4% (\$171.6 billion). (U.S. Census, 2012).
- Between 1999-2000 and 2009-2010 Maine's per pupil expenditures grew from \$7,595 to \$12,259 an increase of 61.4%. Average per pupil expenditures on a national level increased from \$6,836 to \$10,600, a 55.1% increase during this same time period. (U.S. Census, 2012).

### *Student Population*

- Maine has experienced a decrease in student population of 20,533 (10%) over the past decade (2001-2002 to 2011-2012).
- Average SAU size has declined to 808 students – making the state’s school districts the 4<sup>th</sup> smallest in the nation with an average enrollment that is 25.4% the size of the average school district in the United States.

### *Staffing*

- Maine has seen an increase in the number of new teachers and a slight reduction in the number of administrators in the past decade.
- When combined with the decline in student enrollments Maine has one of the lowest student-teacher ratios in the country.
- The reduced student-teacher ratios are a major cause of the state’s increases in per pupil expenditures.

### *Student Achievement*

- In 2011, Maine’s student test results on the National Assessment of Educational Progress (NAEP) in math and reading were mixed when compared to other states.
- Maine has a four-year high school graduation rate of 79.9% which is 4.4% above the national average, but trails many comparable states.
- Maine’s New England Common Assessment Program (NECAP) test results have been flat over the past two years and trail the scores of students in New Hampshire and Vermont in math and writing in all grades and reading in all but the 3<sup>rd</sup> grade.

### **Equity Analysis**

Overall, Maine has designed a school funding system that provides SAUs with an equitable resource distribution, as revenues are computed by the system. Within the EPS component our analysis shows Maine’s equity to generally meet the strict equity standards established in the school finance literature. When all education funds are included, the system remains quite equitable compared to other states although it does not always meet the strict standards found in the literature. The funding disparities we identified appear to be based more on wealth than student need.

- We found no relationship between EPS per pupil funding and SAU property wealth. The Maine system, as designed, met (or very nearly) met all of the strict benchmarks established by Odden and Picus (2014) for fiscal neutrality and equity. In other words, the level of spending was not strongly related to the wealth of the SAU (measured in terms of property wealth per pupil and in terms of per-capita income), and overall per pupil spending levels were generally equitable across all students. When adjusted for student characteristics, per pupil spending remained equitable, providing roughly the same level of revenue for students with similar characteristics.

- When we included local revenue raised through property taxes above the level of EPS funding, we found that SAUs with greater wealth – measured on the basis of property wealth per pupil or per capita income – had a slightly higher level of per pupil expenditures than lower wealth SAUs. While of concern, overall equity statistics suggested greater equity than found in most other states.
- The equity of the system worsens slightly when student needs are taken into account. This implies that some of the funding disparities found are not attributable to meeting the special needs of at risk students. We recommend the state consider new ways of providing funds to SAUs in order to help them meet the needs of their neediest students.

### **Tribal Funding**

Our primary finding from an assessment of Tribal funding in Maine and across the United States is that each state has its own approach for funding schools for Native American children. These approaches rely on a combination of state and Federal sources and are hard to compare across states. If Maine wants to provide more funds for indigenous students, the state could encourage SAUs to take advantage of available Title VII funds, as a number of eligible SAUs do not.

Our specific findings related to tribal funding include:

- The three Maine Indian Education schools appear to receive total per pupil revenues that are substantially higher than the state average funding level.
- The mix of state and federal funding for the tribal schools in Maine is set by the Maine Indian Claims Settlement Act of 1980. It would require tribal and federal agreement to modify the Act.
- Most Maine SAUs that are eligible for Title VII funds (districts serving 10 or more American Indian/Alaska Native students) do not receive the funds. SAUs could apply for these moneys, generally about \$300 per student, which are supplemental and can be used for a broad array of approaches to support indigenous students.
- The state of Maine should decide whether or not to provide a different set of options for secondary students exiting the tribal schools, depending on the availability of evidence about whether these students are succeeding in high school.
- The Committee may want to study spending patterns in the tribal school more closely to determine if there are more effective ways to use existing resources to improve student learning.

## Comparison of EPS with EBM

The report also provides a side-by-side comparison of the elements of Maine's EPS with the elements of the Evidence Based Model (EB) that we have developed for use in other states. We also provide the research basis surrounding each individual issue.<sup>4</sup>

The EB model uses a similar structure and approach to that used by the EPS in Maine. The EB model provides resources to meet all seven *Learning Results* categories and provides additional resources that, in our view, would establish a comprehensive education system as called for in the Resolve establishing this study. It is our view that the EB model provides sufficient resources for all schools to offer a full liberal arts curriculum that offers an education program designed to meet college and career-ready standards for all students. The EB approach is also sufficient to allow schools in Maine to dramatically increase student achievement on standardized performance tests such as the NECAP.

The comparisons between EPS and EB result in a number of differences in the specific staffing ratios for different grade levels, educational programs and support services, as well as differences in per pupil funding levels for certain resources. In some instances the cost of EPS exceeds the EB and in others the reverse is true. We have quantified those differences by specific program area.

In Part 2 of the study we worked with the Committee to assess the similarities and differences between the EB and the EPS, including an assessment of the cost differences between the two models. We look forward to ongoing discussions with the Committee as it decides whether to modify the current EPS approach, shift to the EB model's ratios and formulas, or establish a funding model that includes a combination of both approaches.

## Teacher Compensation

In Part 1 of this study, we reviewed the current teacher compensation system in Maine and reviewed state and SAU level teacher compensation reforms focused on improving teacher effectiveness. Unfortunately, many of these initiatives have not been carefully studied so the strengths and weaknesses of each are hard to discern. With that in mind, we reached the following conclusions about teacher compensation issues in Maine:

- Maine's goal of providing regional adjustments for teacher salary differences is appropriate but the index currently in use does not correctly control for teacher quality. It provides more resources for SAUs that have chosen to pay higher salaries in the past and fewer resources to SAUs that paid lower salaries in the past. As a result, SAUs do not have an equal chance at recruiting and retaining effective teachers.

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<sup>4</sup> Readers interested in more detail on the EB are referred to our textbook, *School Finance: A Policy Analysis*, 5<sup>th</sup> Edition. (Odden & Picus, 2014).

- Following a comprehensive review of other states’ efforts to reform teacher compensation, based on the often disappointing findings from these efforts and based on Maine’s own experiences, we offer the following recommendations:
  1. Maine should replace its approach to providing regional adjustments to teacher salary levels and shift to either a Comparable Wage Index or a Hedonic Wage Index.
  2. To determine if current teacher salaries are at the appropriate market level, Maine should benchmark teacher salaries to salaries in Maine for jobs that are comparable to teaching, not to other states or the national average.
  3. Maine should be more strategic in recruiting and retaining effective teachers by shifting its teacher salary structure from the current system based on years of experience and education – which is not strongly linked to effectiveness. The new structure should provide major salary increases when a teacher’s instructional effectiveness improves.
  4. If, after making these changes, some SAUs continue to have difficulty staffing schools or subject areas, the state could consider provision of additional incentives for hard to staff subjects or hard to staff schools.
  5. If Maine decides to create any of these compensation incentives, the key features should be developed at the state level. Nearly all other states that have devolved the design of performance pay incentives to local districts have not been satisfied with the results.
  6. The state should fund ongoing analyses of the implementation and impact of the incentive programs to determine whether they are working to move effective teachers into hard to staff schools and subjects and to retain them at those sites.

We presented these findings and recommendations to the Joint Standing Committee on Education and Cultural Affairs on April 10, 2013, and participated in a public forum the following morning. Following that, we met with the Committee and developed a strategy and work plan for our work on Part 2 of this study, which is contained herein.

## **SUMMARY OF PART 2 FINDINGS**

Part 1 of our study was an analysis of Maine’s current EPS funding system. In Part 2 we focused on alternatives the State may want to consider as it reviews the EPS system and seeks to ensure adequate funding so all Maine Pre-K to 12 students can meet the Common Core Curriculum Standards. We considered a number of issues as requested by the Committee, including:

- An analysis of alternative measures of fiscal capacity (Chapter 2)
- Stakeholder feedback on EPS and our EB model through Professional Judgment Panels and Stakeholder Forums (Chapter 3)
- Case studies of improving schools (Chapter 4)
- Development of a simulation model that allows policy makers to understand:
  - The total and SAU by SAU cost of alternative EB models



- The distributional effects of alternative measures of state valuation
- The state cost and property tax implications of alternative state percentage shares of EB funding (Chapter 5)
- The policy issues and cost implications of alternative regional cost adjustments in the funding model (Chapter 6).

Each issue is summarized below.

## Alternative Measures of Fiscal Capacity

A major concern in Maine revolves around the distribution of the tax burden for paying for schools. Specifically, there are a number of SAUs with very high state valuation (property value) per pupil due to their location along Maine's coast, or near Moosehead Lake. Moreover there are many who argue that the year-round residents of many of these communities have relatively low incomes and as a result have excessive property tax burdens. We were asked to identify possible solutions to the problems of these SAUs, which we identified as High Property Wealth/Low Per-capita Income (HPW/LHI) SAUs. The question we sought to answer was whether or not there was a way to accommodate the concerns of such SAUs in the design of the distribution formula to fund either the EB or the EPS.

We found that there are four common approaches to dealing with this issue, two focused on assistance to SAUs and two providing direct assistance to property tax payers. They can be described as follows:

- Assistance to SAUs
  - **Establish minimum school funding payments** – Minimum payments allow for schools regardless of their wealth to receive some funding from the state
  - **Use income as a wealth measure** – States can use some form of income as a measure to better define an SAU's ability to pay.
- Provide direct assistance to property taxpayers
  - **Property tax “circuit breakers”** – these are designed to reduce the property tax liability for individuals whose property tax payments represent a large portion of their household income by providing them with an income tax credit
  - **Homestead exemptions** – this program allows for homeowners to exempt a certain portion of their home's value from property tax levies.

Maine currently uses the first of these methods, offering SAUs with high state valuation per pupil minimum payments through the EPS system. These “minimum receivers” receive funding equal to the highest of the following:

- 3% of total EPS funding
- 30% of special education costs
- 98% of the funding level for economically disadvantaged students.

As part of the distribution model we developed (and describe in detail in Chapter 5), we programmed the capacity to include per capita income in the measure of state valuation per pupil used to distribute state and local funds to SAUs. Specifically, we developed a multiplicative index that multiplies the ratio of a SAU's per capita income to the state average income times the per pupil state valuation of that SAU. The result of this computation is SAUs with above average per capita income have a higher per pupil state valuation for computation of state and local funding shares, while SAUs with below average per capita income have a lower state valuation per pupil for the purpose of computing state and local funding shares.

We simulated the distribution effects of our base EB model using the income index as part of the measure of state valuation and found a number of changes in the shares of state and local funds in the SAUs, though little change in statewide figures. Even if HPW/LHI SAUs receive more state revenues, the issue is whether the additional revenues are used to increase school spending or to reduce school property taxes. Even if the latter occurs, however, all households in the SAU experience modestly lower property taxes, not just the low-income households. This led us to conclude that trying to solve the problems of HPW/LHI SAUs through the school funding formula would be difficult and likely very expensive. In discussions with the Committee, we recommended that they consider a circuit breaker approach to focus the assistance more directly on low-income households.

### **Professional Judgment Panels**

An important component of the study was gathering stakeholder input to the design of Maine's school funding model, including critique of the EB model. We accomplished this through a weeklong series of Professional Judgment Panels (PJP) and a series of evening Stakeholder Forums. On July 16, 17 and 18, 2013, our firm conducted five PJP sessions and four Stakeholder Forums. We conducted a PJP and a forum in Presque Isle (July 16), Farmington (July 17) and Bangor (July 17) and two PJPs and a forum in Portland (July 18). The task for the PJPs was to provide input and commentary on the details of the EPS and EB approaches for the purpose of recalibrating the EPS formula. The purpose of the Forums was to gather commentary on any issues related to Maine's school funding system. We believe that the PJPs and Stakeholder Forums provided significant new information that will help the Legislature review and evaluate Maine's school funding structure.

Overall, the feedback we received can be summarized in eight major areas as follows. These are presented without any specific recommendation as general background. They are in no particular order of importance.

1. There was general dissatisfaction with the state's implementation of the voter-approved mandate that the state fund 55 percent of the EPS. This dissatisfaction was twofold: participants in both the PJPs and Forums wanted a clearer definition of what is included in the EPS, and there was unanimous support that the state meet its legal commitment to fully fund 55 percent of the EPS.

2. There was concern that while the EPS was initially intended to define a “minimum” level of school funding, over time the EPS has become the “maximum” amount of support for schools in the eyes of many citizens. There was the hope that recalibration of the EPS could move beyond a minimum, and perhaps to a more comprehensive approach that provides sufficient resources for Maine’s educators to offer instruction in all of Maine’s Learning Results. Participants also recognized the need to educate a large portion of students to the new proficiency expectations of the Common Core Curriculum Standards.
3. The state’s approach to funding transportation services should be re-assessed. Many felt the current approach was insufficient and given the recommendations in the EB model for expanded before and after school and summer school programming, the need for transportation and related funding becomes more urgent.
4. There was significant interest in and concern about the issue of high property wealth and low household income SAUs and how the state’s school funding system and its overall tax system could be designed to recognize these anomalies.
5. There was general dissatisfaction with the current regional cost adjustment in the EPS formula.
6. There was significant concern, by teachers in particular, that the state may be moving toward a teacher compensation system that includes performance pay (or what some Maine educators called “merit pay”). The concern centers mainly on the way performance would be measured and a perception that such a system would undermine collaboration if only certain teachers could attain a higher level of pay.
7. Several individuals made proposals to make the EPS formula more transparent regardless of how it is modified in the future. They suggested placing the components and formulas on the web and making it easy to see how each SAU’s EPS funding is calculated.
8. There was dissatisfaction with the uncertainty that surrounds the establishment of the required local property tax rate each year. Concerns focused on the variation in the tax rate and the lateness in the budget cycle at which the final rate was established. Participants at both PJP and Stakeholder Forums felt uncertainties complicated their ability to engage in long term planning and budgeting.

The PJPs strongly supported the following components of the EB model:

- a) Resources for professional development
- b) Resources for economically disadvantaged students
- c) Elimination of instructional aides and provision of professional teachers to provide extra help for struggling students.

The PJPs also suggested several Maine specific modifications to the EB model which we support. These include:

- a. In place of the EB model's use of one overall weight for special education students, the PJPs recommended that the state fund 100% of the needs of "high cost" students with disabilities. The "high cost" benchmark would need to be determined over time but they suggested it at approximately \$20,000. For students who did not meet the "high cost" benchmark, a weight for all *other* special education costs would be computed. We estimate this weight would be lower than the current weight of 1.27 and would need to be determined and reviewed over time. The weight would be applied to students identified as needing special education services, which would be all special education students minus those in the high cost category.
- b. For career technical education, the PJPs recommended the state's current approach remain in place, but that policy makers pay special attention to forthcoming recommendations from a Task Force addressing this issue and its funding.
- c. Several PJP panelists recommended that the state adopt a "newcomer" program for ELL students who have just entered the country. Such a program would provide more intensive services to orient those students to the US schooling system and better prepare them to function in a regular classroom and with other ELL students.

The panelists also had several recommendations that we do not support, but recommend the Committee consider in its deliberations. These include:

- a. Lower class sizes in grades 4-12
- b. Additional nursing staff
- c. Higher allocations for gifted and talented students
- d. More administrative staffing at all three school levels. This took the form of adding an additional assistant principal above the EB recommendations at each prototypical school
- e. More computer technicians in each school
- f. More state support for health care costs.

### **Case Studies of Improving Schools**

As part of our study, we identified five schools that demonstrated notable improvements in student achievement over time. To understand how these schools achieved those improvements we conducted in-depth case studies of all five. To the extent possible, we identified improving schools that enrolled a high proportion of economically disadvantaged students. We also tried to capture a cross-section of grade levels and geographic locations. The five schools selected for the case studies represent 1,139 students, approximately 62% of who are economically disadvantaged. The selection of schools was based on improvements in student achievement, as measured by math, reading and science scores on the New England Common Assessment Program (NECAP) from 2010 to 2012.

We found that the five schools employed similar strategies to improve student performance, and that those strategies were closely aligned with the theory of improvement built into the evidence-based model.

These schools:

- Had a clear focus on instruction in core subjects, such as language arts, mathematics and science
- Adopted research-based curriculum programs across the entire school
- Provided intensive, ongoing professional development, focused on the Common Core Curriculum Standards. This often included use of instructional coaches
- Organized teachers into collaborative groups that used student data to continuously improve core instruction, target students who needed interventions and monitor the progress of those students
- Used multiple student assessments to inform instruction, plan interventions and monitor progress
- Provided additional instructional time for struggling students
- Had class sizes smaller than those in the EB model.

Since the strategies these schools deployed were similar to the theory of improvement embedded in the EB model, we concluded that the EB model did not need to be adjusted to reflect unique aspects of school improvement in Maine. Moreover, the strategies these schools implemented were also similar to the strategies in the improving schools that were studied by the Maine Education Policy Research Institute (MEPRI).

### **Simulating Options to the EPS Funding System**

As part of our review of Maine's Essential Programs and Services (EPS) school funding system, we were asked to provide the Committee with the capacity to simulate the Evidence Based (EB) model and consider alternative resource allocations for the components of the EB model. In addition, we sought to build the model so that we could analyze the funding implications and tax implications of the EB model; and we included a distribution model that allows consideration of per capita income as an alternative measure of fiscal capacity.

The purpose of this model – which we will provide to OPEGA for continued use – is to **estimate** the impact of alternative EB parameters, funding distribution choices and fiscal capacity measures on the total estimated cost of the EB model in Maine. Conceptually, any set of EB parameters will result in a new total cost of education for Maine. Once that total has been estimated, the model then allows estimation of state and local shares. While the state share of the current EPS is approximately 45% of the total, the state's goal is to shift that to 55%. Our model allows for estimates of state and local percentage shares using the current state percentage share, a state share of 55%, or by holding the required tax rate (RTR) of the system constant and allowing the state and local percentage shares to vary depending on the cost of the EB model that is simulated. In short, the model allows users to vary funding system parameters in a number of ways including changes in:

- The parameters and formulas of the EB model (e.g. changing class sizes or the allocation of certified teachers to serve struggling students)
- The state required tax rate for raising the local share of EB revenue
- The percentage of total EB funding provided by the State

- Whether or not to include a measure of income in the computation of each SAU's fiscal capacity.

At the August 1, 2013 Committee meeting we were also asked to reconcile our model's calculation of total state and local education funding with the funding level displayed on acting Commissioner Rier's annual funding graph. Reconciling these figures was a complex undertaking and we prepared a Memorandum of Understanding between the Department of Education and Lawrence O. Picus and Associates indicating how the figures were reconciled and stating that both parties agree with the approach and results of this effort.

In the model we simulate state and local aid and tax rates for the 2012-13 school year. The results of each simulation are thus comparable to actual state and local revenues for that year. The data set we use for the simulations includes EPS funding at 97% of the total, as well as adjustments for the curtailment of \$12.5 million enacted in the middle of the 2012-13 school year. As a result, our base simulation uses a required local tax rate (RTR) of 7.8 mills to fund the EB model.

We initially ran three simulation options for the EB model (with a total additional cost of \$360.8 million) as follows:

1. Maintaining the current state share percentage of funding at 45.5%
2. Maintaining the current RTR of 7.8 mills
3. Increasing the state share percentage of EB funding to 55%<sup>5</sup>

In addition to this simulation, we produced a similar set of simulations using alternative EB inputs as requested by the committee. This option increased the total additional cost of the EB to \$403.0 million. We also ran a variation of the Committee requested model with the state share percentage of EB funding at 55%, and with each minimum receiver SAU receiving at least 100% of special education funding.

Finally, we simulated our base EB model with two variations of the alternative state valuation option. We used the ratio of median per-capita income in each SAU to the state median income, and multiplied that ratio by the state valuation to determine an alternative valuation for distribution of funds to SAUs. We did this for the base EB model and used the following options:

- Used the multiplicative income ratio to compute half of the state valuation (using state valuation for the other half) and constrained the ratio to a low of 0.5 and a high of 1.5
- Used the multiplicative income ratio to compute half of the state valuation, without constraining the ratio

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<sup>5</sup> In EPS, state share percentage includes SAU revenue from the state and state revenue for state-only programs/adjustments. In EB, state share percentage includes SAU revenue from the state, state revenue for state-only programs/adjustments, and the state-run pension program. In neither case are over-EPS or over-EB funds included.

As described in Chapter 3, the results suggested that using the EPS or an alternative EB funding system to resolve the concerns of high property wealth/low per-capita income SAUs would likely be very expensive and a better approach would be to seek a system that targeted aid more directly to low income households, wherever they are located in Maine.

Table X.1 Compares the EPS funding model with our EB model. It also compares the Committee EB model and describes the changes proposed by the PJPs.

**Table X.1: Comparison of Funding Elements**

Element	EPS	EB	PJP Panels	Committee Decision
<b>PRESCHOOL</b>				
Class Size	Counted as full-day K students, resourced on elementary staffing ratio of 1:17 for teachers	Preschool class size of 1 teacher for every 15 students	Same as EB	Same as EB
Instructional Aides	1:100 for Ed Techs	1 Instructional Aide or Ed Tech for every 15 students	Same as EB	Same as EB
<b>CLASS SIZE AND STAFFING RATIOS</b>				
Class Size & Staffing Ratios (Excluding Instructional Coaches which EB adds)	<p>Elementary staffing ratio of 1:17 for teachers</p> <p>Middle school staffing ratio of 1:16</p> <p>High school staffing ratio of 1:15</p>	<p><i>Elementary</i> core class sizes of 15 K-3, and 25 grades 4-5, with additional 20% for elective classes, for overall elementary staffing ratio of 1:15.62</p> <p><i>Middle</i> school core class sizes of 25 with 20% more for elective classes for overall ratio of 1:20.83</p> <p><i>High</i> school core class sizes of 25 with 33% more for elective classes for overall ratio of 1:18.75</p>	Generally same as EB but many wanted to reduce class sizes in grades 4-12 to around 20	Same as EB but class sizes of 20 in grades 4 and 5
<b>INSTRUCTIONAL COACHES/PROFESSIONAL DEVELOPMENT</b>				
Instructional Coaches	\$24 per pupil	1 instructional coach for every 200 students	Same as EB	Same as EB
Pupil Free Days	NA	Total of 10 pupil free days for the teacher work year so an approximate increase of 5 days and paid at the average daily rate	Same as EB	Same as EB
Resources for Training	\$57 per pupil	\$100 per pupil	Same as EB Consider targeting some of these PD resources	Same as EB



Element	EPS	EB	PJP Panels	Committee Decision
<b>EXTRA HELP FOR STRUGGLING STUDENTS</b>				
Economically Disadvantaged Students	Extra weight of 0.15 for each SAU ED student			
Tutors or Tier II Intervention teachers		1 FTE per 100 ED students	Same as EB	Same as EB
Extended Day Academic Help Programs		1 FTE per 120 ED students	Same as EB	Same as EB
Summer School		1 FTE per 120 ED students	Same as EB	Same as EB
Additional Pupil Support (in addition to guidance and nurse discussed below)		1 FTE per 100 ED students	Same as EB	Same as EB
LEP/ELL Students	Extra weight Based on SAU LEP student count: <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>&lt;15</span> <span>0.7</span> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>16-250</span> <span>0.5</span> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>&gt;251</span> <span>0.525</span> </div>	1 FTE per 100 ELL students	Keep EPS approach  Consider a “newcomer” program in some SAUs	Same as EB
<b>SPECIAL EDUCATION</b>				
Special Education Overall	Extra weight of 1.27 for all identified special education students, plus adjustments for small SAUs	Leave as is for now but consider PJP recommendation in the future	Lower weight applied to all <i>identified</i> non-severe special education students	Leave as is for now
Special Education, Mild and Moderate		1 FTE teacher and 0.5 special education aide per 150 all students		
Special Education, Severe and Profound		100 % state funded	100 % state funded beginning at \$20,000	Leave as is for now
State aid deductions		Federal Title VIb		
<b>GIFTED AND TALENTED</b>				
Gifted and Talented	State approved costs	\$25 per all students	Raise amount per pupil to \$50-100	Greater of \$25 per pupil or current GATE program allotment
<b>CAREER AND TECHNICAL</b>				
Career and Technical	State approved costs	\$9,000 per CTE Teacher for High Tech Equipment	Same as EPS	Same as EPS
<b>SUBSTITUTE TEACHERS</b>				
Substitute teachers	\$36 per pupil	5% of all teaching staff	Same as EB	Same as EB

Element	EPS	EB	PJP Panels	Committee Decision
<b>PUPIL SUPPORT STAFF</b>				
Guidance Counselors	1 FTE per 350 elementary and middle students 1 FTE per 250 high school students	1 FTE per 450 elementary school students 1 FTE per 250 middle and high school students	Same as EB	Same as EB
Nurses	1 health professional per 800 students	1 Nurse per 750 students	Increase nurse staff to 1 per 450-500 students  Monitor possible need for more support for homeless in future	Same as EB
<b>INSTRUCTIONAL AIDES/ ED TECHNICIANS</b>				
Instructional Aides/Ed Technicians	1 per 100 pupils K-8 1 per 250 9-12 students	None	Same as EB	Same as EB
<b>SUPERVISORY DUTY AIDES</b>				
Supervisory Duty Aides	No specific allocation	1 FTE per 225 elem. 1 FTE per 225 middle 1 FTE per 200 HS	Same as EB	Same as EB
<b>LIBRARY</b>				
Librarians	1 per 800 K-12 students	1 librarian position for every 450 elementary and middle students and every 600 high school student	Same as EB	Same as EB
Library technicians	1 library technician for every 500 K-12 students	No library technicians	Same as EB	Same as EB
<b>SCHOOL ADMINISTRATION</b>				
Principals	1 administrative position per 305 K-8 students 1 administrative position per 315 9-12 students	1 per 450 elementary and middle students 1 per 600 high school students	Same as EB	Same as EB
Assistant Principals	No specific recommendation	1 per 600 high school students	1 AP for every 450 elementary and middle school students. 1 AP for every 300 HS	Considering PJP recommendation

			students	
Element	EPS	EB	PJP Panels	Committee Decision
<b>SCHOOL SECRETARIES</b>				
School Clerical	1 per 200 K-12 students	1 per 225 elementary and middle students 1 per 200 high school students	Same as EB	Same as EB
<b>TECHNOLOGY</b>				
Computer Technologies	\$95 per K-8 pupil \$288 per high school pupil	\$250 per all pupils	Same as EB	Same as EPS
Instructional Materials	\$377 per K-8 pupil \$466 per 9-12 pupils	\$170 per K-8 pupil \$205 per high school pupil	Same as EPS	Same as EPS
Student Activities	\$33 per K-8 pupils \$111 per 9-12 pupil	\$250 per all pupils	Same as EPS	Same as EPS
<b>CENTRAL ADMINISTRATION</b>				
Central Administration	\$215 per pupil	\$488 per pupil to support a prototypical 3,900 Student SAU central office of 9 professional, 9 clerical/secretarial and 1 computer technician positions.	Same as EB	Same as EB
<b>MAINTENANCE AND OPERATIONS</b>				
Maintenance and Operations	\$1,013 per K-8 student \$1,204 per 9-12 students  To support custodians and groundskeepers as well as major facility renovation	\$462 per pupil to support custodians and groundskeepers  Retain EPS figures as they include major facility renovation which cannot be separated	Same as EPS	Same as EPS

Element	EPS	EB	PJP Panels	Committee Decision
<b>EMPLOYEE BENEFITS</b>				
Employee Benefits	Teachers, Guidance Library, Health 21.65 % Ed Technicians 36 % School Admin 14 % Clerical 29%	Teachers, Guidance Library, Health 21.65 % Ed Technicians 36 % School Admin 14 % Clerical 29%	Same as EPS/EB but consider higher support of health costs	Same as EPS/EB
<b>REGIONAL COST ADJUSTMENT</b>				
Regional Cost Adjustment	The Maine Regional Cost Adjustment based on labor market regions and comparisons of actual teacher salaries adjusted for experience and education.	A more economic approach using either the Hedonic or Comparable Wage Index (CWI) approach, with a preference for the CWI	Shift to an hedonic or CWI and perhaps have an index no lower than 1.0	Still considering EB recommendation to switch to the CWI

## **Regional Cost Adjustments**

Maine currently uses a regional adjustment factor that was developed, using 2004-05 data, for 35 geographic regions in the state and compares the average teacher salary in the region to the state average.

The index represents the differences in teacher salaries at the time that it was developed whether the differences were caused by different local choices on teacher salary levels, differences in the ability to raise educational revenues and pay teachers or differences in the purchasing power of the education dollar. The EB approach suggests that Maine develop either an Hedonic wage index or a Comparable Wage Index, or use those indices that have been developed by the National Center for Education Statistics (NCES), instead of the current regional cost adjustment in the formula.

Our model allows simulation of alternative Cost of Education Index adjustments. In developing the cost of the EB model, we used a Comparable Wage Index (CWI) developed by NCES in 2011. We also simulated the base EB model with Maine's regional cost adjustment. The impact of this change was to reduce the total additional cost of the system by \$44.8 million to \$316.1 million, with a resultant reduction in the required tax rate from 8.90 to 8.75 mills (for the EB using the current state percentage share of 45.5% of EB. This option also changed the EB total for each individual SAU as well. A table at the end of the report summarizes the available regional indexes for each SAU and can be used to determine how a change in the index will impact total EB revenues for each SAU.

# CHAPTER 1: INTRODUCTION

This document is the second of two reports submitted to the Maine State Legislature's Joint Standing Committee on Education and Cultural Affairs (hereinafter the Committee) evaluating the state's Essential Programs and Services Funding Act (EPS). Prepared by Lawrence O. Picus and Associates under contract with the Maine Legislative Council, this study, which was conducted between October 1, 2012 and December 1, 2013 (with anticipated presentations to the Legislature during its 2014 session), builds on the first part of our study. It provides detailed findings on alternative measures of fiscal capacity, outlines the stakeholder feedback we received from a weeklong series of Professional Judgment Panel meetings in July, and provides five case studies of schools we identified as showing substantial improvement in student performance. In addition, this report describes in detail the simulation model we built to estimate the costs of our Evidence Based model (EB), describes several alternative implementations of the EB model and compares the estimated costs to the costs of the EPS funding model. In addition to simulating different cost models, we modified the simulation to enable Maine policy makers to consider the use of per capita income as part of the measure of fiscal capacity in the state's funding model. Finally, we provide a discussion of the current regional cost adjustment and an alternative approach for estimating the variation in costs of professional staff compensation across Maine. The balance of this chapter introduces these topics and the chapters that follow.

One of the issues of concern to members of the Committee was the impact of the EPS funding system on property taxes paid by low income households located in areas of the state with high state property valuation, for example along Maine's coast or in the area around Moosehead Lake. To address this concern, Chapter 2 focuses on alternative measures of fiscal capacity used in school funding systems and identifies a potential approach for resolving this concern. However, as described in Chapter 5, when we included income as part of the measure of fiscal capacity, the impact did not target property tax relief at those SAUs. As a result, there is a general feeling on the part of Committee members that a more targeted circuit breaker approach would be more effective in reaching the low-income property tax payers, and would cost the state less.

Chapter 3 describes the findings from our work seeking stakeholder input through Professional Judgment Panels (PJP). We traveled to four locations in Maine, conducting five daylong PJP panel meetings (Presque Isle, Farmington, Bangor and two in Portland), as well as public hearings in the evening in each location. The panels consisted of education professionals from across the state representing a variety of positions and SAUs. They were presented with an outline of our EB model and asked to comment on it, specifically the extent to which they thought the elements of the EB would be effective in getting student performance to meet Maine's educational standards. The panels offered many helpful suggestions, all of which are summarized – along with the model recommendations of the Committee, in Table 3.1 in that chapter.

Chapter 4 provides both a summary and detailed write-ups of the five improving schools we visited in February and September of 2013. Specifically, we identified five schools that showed substantial gains in student performance and then went to each school to understand the strategies employed by those schools to improve student learning. We note in that chapter that

most, if not all, of the strategies these schools are using are also embedded in the components of the EB model.

In Chapter 5 we report the results of our EB cost and distribution model. The model was designed to show the total state cost and SAU-by-SAU changes in resources between the EPS and the EB model, and to display those differences for variations of the EB model. The model was designed to be flexible and enable users to make alternative assumptions about funding adequacy and simulate the impact of those assumptions on total school spending as well as on the revenue of each SAU. In addition to simulating alternative program components (i.e. student to certified staff ratios, resources for technology, etc.), the model also includes two additional distribution capabilities. First, it can be used to determine the share of any model total to be paid by the state and by SAUs. The model allows the user to understand the implications of increases or decreases in the state share of the EB total by showing the relationship between local required property tax rates and the state percentage share of EB funding. Second, the simulation includes the capacity to estimate the impact of using per capita income as a multiplicative component of fiscal capacity for SAUs.

One issue that requires special attention is the regional cost adjustment used in the EPS formula to recognize differences in the cost of hiring certified employees with similar skill levels in different parts of the state. In chapter 6 we describe the purpose of such regional cost adjustments, and suggest an alternative measure that would better distribute resources equitably across Maine. Because a change in the regional cost adjustment would impact SAUs differently, we provide an analysis of the adjustment factor for the current adjustment and for a Comparable Wage Index (CWI) approach that we recommend. We also show in this chapter how each index impacts the total cost of the EB model.

The work described herein took place between April 1 and December 1, 2013 – with much preparatory work included in Part 1 of our study beginning in October 2012. We met with the Committee on two occasions to discuss this work – July 31/August 1, and October 29. For each of those meetings we prepared memoranda that described specific issues and findings. In the material that follows, several chapters are composed mostly of the previously delivered memoranda, prefaced by a short summary of the issue, our findings and Committee action (if any to date).

## CHAPTER 2: ALTERNATIVE MEASURES OF FISCAL CAPACITY

A major concern in Maine revolves around the distribution of the tax burden for paying for schools. Specifically, there are a number of SAUs with very high state valuation (property value) per pupil due to their location such as along Maine's coast, or near Moosehead Lake. Moreover there are many who argue that the year-round residents of many of these communities have relatively low incomes and as a result have excessive property tax burdens. We were asked to identify possible solutions to the problems of these SAUs, which we identified as High Property Wealth/Low Per-capita Income (HPW/LHI) SAUs. The question we sought to answer was whether or not there was a way to accommodate the concerns of such SAUs in the design of the distribution formula to fund either the EB or the EPS.

We presented our findings to the Committee on August 1, 2013 along with the memo that appears on the following pages. We found that there are four common approaches to dealing with this issue, two focused on assistance to SAUs and two providing direct assistance to property tax payers. They can be described as follows:

- Assistance to SAUs
  - **Establish minimum school funding payments** – Minimum payments allow for schools regardless of their wealth to receive some funding from the state
  - **Use income as a wealth measure** – States can use some form of income as a measure to better define an SAU's ability to pay
- Provide direct assistance to property taxpayers
  - **Property tax "circuit breakers"** – these are designed to reduce the property tax liability for individuals whose property tax payments represent a large portion of their household income by providing them with an income tax credit
  - **Homestead exemptions** - this program allows for homeowners to exempt a certain portion of their home's value from property tax levies

The memo below identifies the pros and cons of each of these approaches and indicates which are used in other states across the country.

Maine currently uses the first of these methods, offering SAUs with high state valuation per pupil minimum payments through the EPS system. These so-called "minimum receivers" receive funding equal to the highest of the following:

- 3% of total EPS funding
- 30% of special education costs
- 98% of the funding level for economically disadvantaged students.



As part of the distribution model we developed (and described in detail in Chapter 5) we programmed the capacity to include per capita income in the measure of state valuation per pupil used to distribute state and local funds to SAUs. Specifically we developed a multiplicative index that multiplies the ratio of a SAU's per capita income to the state average income times the per pupil state valuation of that SAU. The result of this computation is SAUs with above average per capita income have a higher per pupil state valuation for computation of state and local funding shares, while SAUs with below average per capita income have a lower state valuation per pupil for the purpose of computing state and local funding shares.

Our model allows this approach to be simulated for any combination of EB inputs. It also allows the percentage of the new state valuation per pupil represented by the income index to vary from zero to 100% of the total. Finally, we included the capacity to "bound" the per capital income index for each SAU such that if desired, the model can cap the income multiplier by a figure such as 1.5, and place a floor on that multiplier by a figure such as 0.5.

Maine has used an income adjustment in the past, but the factor that was used relied on a "additive" methodology basing 85% of a SAU's state valuation per pupil on property value and 15% on median per-capita income. The result of doing it this way was some high income, high property wealth SAUs wound up with higher state aid and some lower income, low property wealth SAUs received less aid, which was counter to the intent of the change. Today, property value is the sole measure of a SAU's fiscal capacity.

We simulated the distribution effects of our base EB model using the income index as part of the measure of state valuation and found a number of changes in the shares of state and local funds in the SAUs, though little change in statewide figures. This led us to conclude that trying to solve the problems of HPW/LHI SAUs through the school funding formula would be difficult and likely very expensive. In discussions with the Committee, we recommended that they consider a circuit breaker approach to focus the assistance more directly on low income households.

Maine's neighbor Vermont has a unique school funding system that limits homestead property taxes for schools to a percentage of household income. The percentage varies depending on the level of spending chosen by an individual town, and is only fully available for incomes below \$90,000 a year, with a sliding increase in the percentage of income to be allocated to property taxes to incomes of \$97,000 annually. The last section of the following memo describes Vermont's school funding system in detail.



## **Policies that Address The Needs of High Property-Wealth School Districts with Low-Income Households**

Michael Griffith  
Lawrence O. Picus  
Allan Odden  
Anabel Aportela

August 1, 2013



# **POLICIES THAT ADDRESS THE NEEDS OF HIGH PROPERTY-WEALTH SCHOOL DISTRICTS WITH LOW-INCOME HOUSEHOLDS**

**Presented to the  
Maine Legislature's  
Joint Standing Committee on Education and Cultural Affairs**

**August 1, 2013**

## **INTRODUCTION**

During Lawrence O. Picus and Associates' initial review of Maine's Essential Programs and Services (EPS) school funding system we conducted interviews and forums with policymakers, education stakeholders and members of the community. These interviews were designed to elicit opinions, ideas and recommendations about the operation of the current school funding system and to seek opinions about what might be done to improve that system. A major concern that emerged – described to us as a “tax equity” issue – was a sense that in a number of high property-wealth districts, there are large numbers of low-income households that face significant challenges meeting their property tax obligation for schools. This situation appears to occur most frequently in vacation and tourist communities along Maine's coast and near Moosehead Lake. To fully understand the implications of this issue, and provide the Joint Standing Committee on Education and Cultural Affairs with an analysis of the issue and potential solutions, this paper:

- Identifies the issues faced by high property-wealth, low-per-capita income (HPW/LHI) districts
- Outlines possible policy solutions, and
- Illustrates how other states currently address these important issues

In preparing this paper, we studied Maine's current and past school funding policies as well as relevant data from national and state educational organizations and various peer reviewed academic sources. We also considered the approaches used in other states to deal with similar school finance issues.

The paper begins with a brief description of Maine's current funding system and offers a brief historical context for this discussion. The second section identifies possible solutions to the problem of establishing a school funding system that fairly treats low-income households in high property wealth districts and describes programs used in other states. The third section provides a more detailed analysis of how alternative measures of fiscal capacity might be implemented in Maine, and considers solutions that are both part of, and outside of, the school funding system. This paper was written to support the development of a funding “distribution model” that Lawrence O. Picus and Associates has developed to help the Legislature assess the potential impact of alternative approaches to measuring fiscal capacity in the funding system,

## MAINE'S CURRENT FUNDING SYSTEM

Maine's Essential Program and Services Funding Act (EPS) identifies the level of resources available to each school district (School Administrative Unit or SAU) and then establishes a process whereby that amount is funded through a combination of state and local revenues. The state share is appropriated by the Legislature through its budget process, while the local required contribution is collected on the basis of an established property tax rate designed to collect the balance of revenues needed to fund the EPS.

Each SAU's required local contribution is determined by applying the required tax rate to the property value of the SAU. The state effectively makes up the balance of funding. If an SAU is able to raise all (or more) of its EPS allocation through local property taxes, it then qualifies for a minimum state payment. At the present time, Maine's school funding formula only measures a district's ability to pay based on its property values and does not take the income of a district's residents into account.

### Issues Faced by HPW/LHI Districts

Maine's school funding system, like that of 48 other states,<sup>6</sup> shares the cost of education between the state and local districts on the basis of each district's ability to pay. Districts that are deemed to have a greater ability to pay receive a smaller proportion of their education funding from state sources, while districts with lesser ability to pay receive a greater share of total funding from the state. Maine is one of 41 states that use school district property value as the only measure of a district's ability to pay. Using property values as the only measure for a district's ability to pay can be problematic because property values alone "... (do) not accurately measure the current ability of a property owner to pay the tax imposed."<sup>7</sup> This argument is based on the fact that there is not necessarily a correlation between property values and a property owner's ability to pay taxes. Individuals with highly valued homes may have a low current income whereas individuals with high incomes may have homes valued at a lower level.

### The Impact of Excluding Income

A school funding model that does not take income into account in determining a school district's ability to fund educational services, is more likely to result in low-income, high property wealth districts being treated as if they have a greater tax capacity than the local community believes it can afford. Odden points out that "*It makes little sense to impute a high tax capacity to a*

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<sup>6</sup> Hawaii is the only state that does not share the costs of education between the state and local districts due to the fact that the state operates as a single school district.

<sup>7</sup> Brennan, Michael and Orlando Delogu, "The Argument For: Retaining Income as One of Two Factors in Maine's School Aid Funding Formula", Maine Policy Review Volume 9, Issue 1, 2000. Page 78.

*jurisdiction whose residents lack the ability to pay the tax*”<sup>8</sup>. HPW/LHI districts experience two potential funding dilemmas:

1. High or excessive tax burdens as a result of paying a greater proportion of their income in local school taxes
2. Decreases in school funding because residents are unwilling to vote for higher property taxes to pay for educational programs

Moreover, in those cases where individuals live on a fixed income, high property values create a risk they will be forced out of their homes.

## **Historical Context**

Maine has not always relied only on property wealth to measure a SAU’s fiscal capacity. The 1995 Rosser Commission recommended that the state school aid formula include both income and property wealth as measures of a district’s ability to pay. In 1996 the state adopted changes to the school funding system that included income as a measure of a district’s fiscal capacity.<sup>9</sup> This new fiscal capacity measure factor was based 85% on district per pupil property value and 15% on district median per-capita income.<sup>10</sup> However, in less than a decade the state had discontinued the use of income as a measure of wealth and implemented the current system that makes use of property value as the only measure of a district’s fiscal capacity.

One reason the state moved away from this “additive” approach for including income in the fiscal capacity measure is that the approach had unexpected results. Some high-income high property wealth districts ended up with larger amounts of state aid and some lower income and property wealth districts received less state aid, which was counter to the intent of the change in measure of fiscal capacity.

Today, there is considerable debate over the best way to address the concerns of low-income families in SAUs with high property wealth who feel their property tax bills are excessive. The next section identifies possible solutions for this problem.

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<sup>8</sup> Odden, Allan, “Alternative Measures of School District Wealth”, *Journal of Education Finance*, Vol. 2, Winter, 1977. Pages 356-379.

<sup>9</sup> Brennan, Michael F. and Orlando E. Delogu. “*The Argument For: Retaining Income as One of Two Factors in Maine’s School Aid Formula*”, *Maine Policy Review* 9.1 (2000). Page 80.

<sup>10</sup> Anonymous, “*Reforming School Funding*”, Augusta, Maine, Maine Center for Economic Policy, 2003. Page 12.

## STATE REMEDIES

There are several policy options available to states to mitigate the issues facing HPW/LHI districts. They fall generally into two categories, assistance to school districts, and assistance to individuals. The most common approaches are:

- Provide assistance to school districts
  - **Establish minimum school funding payments** – Minimum payments allow for schools regardless of their wealth to receive some funding from the state
  - **Use income as a wealth measure** – States can use some form of income as a measure to better define a district's ability to pay
- Provide direct assistance to property taxpayers
  - **Property tax “circuit breakers”** – these are designed to reduce the property tax liability for individuals whose property tax payments represent a large portion of their household income by providing them with an income tax credit
  - **Homestead exemptions** - this program allows for homeowners to exempt a certain portion of their home's value from property tax levies

States often use multiple programs to help address the issues faced by HPW/LHI districts and Maine is no exception. Maine makes use of the following policies to address the issues faced by HPW/LHI districts:

- **Minimum Payments:** For the 2012-13 school year the minimum payment to districts was the greater of three percent of the SAU's minimum adjustment or 30% of the SAUs special education adjustment (For greater detail see Table 1).
- **Property Tax Circuit Breaker:** Property owners whose property taxes exceed 4% of total household income and have household incomes that do not exceed \$64,950 (single) or \$86,600 (multiple members) can qualify for this credit. The credit ranges from 25% to 100% of property taxes paid based on income. The maximum credit is \$400. The credit is applied to the taxpayer's income tax liability following payment of the property tax.
- **Homestead Exemption:** Homeowners who have lived in Maine for at least twelve months and make the property they occupy on April 1 their permanent residence qualify for a homestead exemption. These homeowners can exempt the first \$10,000 a home's value from property taxes.

### Direct Aid to School Districts

#### *Minimum School Funding Payments*

Some states establish a minimum payment amount within their primary funding formula. States establish minimum payment programs for a variety of reasons including political expediency, but

the result is that it ensures all districts receive some state funds regardless of where they rank in the state's measure of fiscal capacity

The benefit of a minimum payment system is that it ensures all districts receive some state funding, regardless of their fiscal capacity. The downside to such systems is that it provides additional funding to the wealthiest districts (as measured by the state's fiscal capacity measure) regardless of the median household income of the residents of those districts. Additionally, in a funding system with finite resources, to the extent the minimum payment shifts resources to districts with high fiscal capacity, low fiscal capacity districts will receive fewer state dollars and either have to make up the difference from their own resources, or reduce spending.

Our analysis identified eight other states that provide school districts with some form of minimum payments regardless of their wealth (For a complete description see Table 1):

- **Minimum funding per student:** Five states (California, Illinois, Iowa, New York and Texas) provide a minimum funding amount per student regardless of their wealth. This type of minimum funding is easy for the state to administer and provides districts with a predictable amount of funding each year. The amount that states provide ranges from \$218 in Illinois to \$500 in New York.
- **Guaranteed percentage of funding:** Two states (Florida and Pennsylvania) provide a guaranteed percentage amount of funding to districts. Florida guarantees that districts will receive at least 10% of their base-funding amount from state sources and Pennsylvania guarantees 15%.
- **Minimum funding per school/grade:** Montana provides districts with a guaranteed amount of funding per grade in elementary school (\$23,593), junior high (\$66,816) and a minimum amount of funding for any high-school (\$262,224). This funding approach is designed to mitigate issues of small school size more than to address differences in district wealth.



**Table 1: States That Provide for Minimum School Funding Payments**

	<b>Minimum Funding Amount</b>	<b>Notes</b>
California	\$120 per student in Average Daily Attendance, or \$1,200 per district whichever is greater	
Florida	Districts receive at least 10% of base funding amount from the state	Districts must use this minimum state funding payment to lower their local property tax rates.
Illinois	\$218 per student	
Iowa	\$300 per student	
Maine	The greater of 3% of the SAU's minimum subsidy adjustment or 30% of the SAUs special education adjustment.	An SAU's minimum subsidy adjustment applies to the operating allocation but does not include other subsidizable costs or debt services. In addition, it only includes 2% of the economically disadvantaged adjustment.
Montana	Between \$23,593 or \$66,816 per grade or \$262,224 per school	Districts with elementary schools receive a minimum of \$23,593 per grade for K-6 programs plus \$66,816 per grade for 7 <sup>th</sup> & 8 <sup>th</sup> grade.  A district receives a minimum of \$262,224 to operate a high school
New York	\$500 per student	
Pennsylvania	Districts receive at least 15% of base funding amount from the state	While the minimum funding amount exists in legislation the state has not used the formula to distribute funds to districts over the past 2 years.
Texas	\$247 per student	The state's Available School Fund (ASF) provides a minimum funding amount to all districts. The ASF is primarily made up of revenue generated by the state's fuel tax and the Permanent School Fund. This minimum funding amount varies each year depending on funding levels and student enrollment numbers.

All data are derived from state sources.

### *Alternative Measures of Fiscal Capacity (Income)*

As noted above, we found that 42 states – including Maine - use property values as the only measure of a district's fiscal capacity or ability to pay for schools from local sources. In an attempt to better measure a district's ability to pay for schools, eight states have adopted additional fiscal capacity measures to supplement property values. These typically rely on some measure of income to be included (along with property wealth) in the measure of fiscal capacity.

Using income as part of the fiscal capacity measure provides a more comprehensive measure of a district's fiscal capacity, and can likely redirect state funding to districts with low median household income.

The problems with using household income as part of a fiscal capacity measure focus on the fact that many states do not collect school district residency on their state income tax forms making it hard to measure household income by district – and of course nine states do not have an income tax making collection of such data by district even more difficult. Further, states that have used measures of income have not always seen net funding distribution changes – meaning the problem they sought to solve did not go away. Finally, if not incorporated correctly into the formula the results could be counter to expectations, as Maine experienced in the 1990s, reducing state aid to districts with low median household incomes.

How income is incorporated as a measure of a school district's wealth is just as important as whether it is included at all. Simply adding income to property values often results in unintended consequences such as funding decreases for low-income districts and funding increases for high-income districts. To ensure that an income factor benefits low-income districts it needs to be used as a multiplier to property values. If a district's income is turned into a ratio of the district's income to the state average, a high income district would have a ratio larger than 1.0 and lower income district would have a ratio less than 1.0. Then when this income factor is multiplied by the district's property wealth per pupil to determine that district's local funding capacity, it would raise the relative fiscal capacity for a high income district but decrease the fiscal capacity of a low income district. In the case of a district with median household income below the state average, the impact would be to lower the fiscal capacity measure and increase the share of total funding provided by the state

To illustrate how a multiplicative income factor might work consider how two different districts would fare using income as both an additive factor and as a multiplicative factor.

- District #1 has an average property value per pupil that is equal to the state's average thus it would be given a property wealth factor of 1.0. The district's per pupil income is 10% above the state average – thus its income factor would be 1.10
- District #2 also has an average property value per pupil that is equal to the state's average so it too would be given a property wealth factor of 1.0. This district's per pupil income is 10% below the state average – thus its income factor would be 0.90

Under this example if the state simply used property value as its measure of a district's fiscal capacity in its formula then both of districts would be viewed as having perfectly average fiscal

capacity and would receive the same amount of state funding. But under a system where property wealth and income wealth factors both are given a weight of 50% and simply added together, it would look like this:

Table 2: Income as an Additive – Districts with Equal Property Wealth

	Property Value per Pupil		Income factor		Adjusted District Fiscal Capacity
District #1	$(1.0 \times 50\%) = 0.50$	+	$(1.10 \times 50\%) = 0.55$	=	1.05
District # 2	$(1.0 \times 50\%) = 0.50$	+	$(0.90 \times 50\%) = 0.45$	=	0.95

Table 2 shows that under a system where a district's property values are *added* to an income factor District #1 has an adjusted district wealth that is 5% above the state average and district #2 is 5% below the state average. However, if the state used a multiplicative income factor then each district's fiscal capacity calculation would be as follows:

Table 3: Using Income as a Multiplier – Districts with Equal Property Wealth

	Property Value per Pupil		Income factor		Adjusted District Fiscal Capacity
District #1	1.0	X	1.10	=	1.10
District # 2	1.0	X	0.90	=	0.90

Under a system where a district's property values are *multiplied* by an income factor, District #1 has an adjusted district fiscal capacity that is 10% above the state average and district #2 is 10% below the state average. Table 3 shows that the higher income district would receive less state aid (a fiscal capacity number of 1.10 vs. 1.05) using the multiplicative factor and the lower income district would receive more state aid (with a fiscal capacity number of 0.90 vs. 0.95).

The following is an example of how using income as a multiplier can impact high property wealth/low-income wealth districts:

- District #3 has an average property value per pupil that is twice the state's average so it would be given a property wealth factor of 2.0. This district's per pupil income is 50% below the state average – thus its income factor would be 0.50

Table 4: Using Income as an Additive – High Property Wealthy/Low-Income District

	Property Value per Pupil		Income factor		Adjusted District Fiscal Capacity
District # 3	$(2.0 \times 50\%) = 1.0$	+	$(0.50 \times 50\%) = 0.25$	=	1.25

Table 5: Using Income as a Multiplier – High Property Wealthy/Low-Income District

	Property Value per Pupil		Income factor		Adjusted District Fiscal Capacity
District # 3	2.0	X	0.5	=	1.00

Under this example a district with property values that are twice that of the average district and average income that is half the state average (District #2) would receive a fiscal capacity amount twice that of the average district if only property values were taken into account. However, if income is taken into account and used as an additive then District #2 fiscal capacity number would drop to 1.25 (Table 4). If income were used as a multiplier then the fiscal capacity number for District #2 would decrease to 1.00.

### ***How An Income Factor Would Work in Maine***

The idea that a multiplicative income factor benefits more low-income districts is born out in a 2010 study from David Silvernail and James Sloan of the University of Southern Maine. They studied how including income as a measure of fiscal capacity would impact Maine's school funding system<sup>11</sup>. They reviewed three different scenarios for including income as a wealth measure, these were:

1. Property valuation and income index – This system creates indices for property values and average income amounts and adds those numbers together.
2. Property valuation and income rates – This system defines a district's ability-to-pay as "a percentage of property value plus a percentage of income"<sup>12</sup>
3. Income modified valuations – This system multiplies property values by an income factor.

They simulated how each of these scenarios would impact Maine's SAUs. Under the first option 45% of low-income/low-property wealth SAUs would actually see decreases in school funding. Under the second scenario 76% of low-income/low-property wealth SAUs would see funding decreases. This study showed that the third scenario - where income was used as a multiplier - 100% of low-income/low-property wealth SAUs in Maine would see increases in funding.

### ***Alternative Measures of Fiscal Capacity (Retail Sales Base)***

In an attempt to determine a district's ability-to-pay some states take into account a district's sales tax base. Only two states – Tennessee and Virginia – currently use a district's sales tax base as a measure of their fiscal capacity. Both of these states provide for a local option sales taxes

<sup>11</sup> Silvernail, David and James Sloan "An Analysis of the Impacts of Including Income in Determining Community Wealth in the Maine K-12 School Funding Formula", Maine Education Policy Research Institute at the University of Southern Maine, Portland, Maine. 2010.

<sup>12</sup> Ibid, page 8.

that can be used to fund schools. However, this system would make much less sense in a state, like Maine, where a local option sales tax is not an option for districts.

### ***States With Alternative Fiscal Capacity Measures in the School Funding System***

Our study found that eight states make use of a fiscal capacity factor in addition to property values. Among the alternative fiscal capacity measures used by states, we identified the following:

- **Income:** Four states (Connecticut, Massachusetts, New Jersey & New York) measure a district's ability to pay based 50% on property values and 50% on income
- **Retail Sales:** Tennessee uses a district's property tax base as 50% of their fiscal capacity measure and 50% based on their sales tax base
- **Income & Retail Sales:** Virginia makes use of three measures, they are: property tax base (50%), income tax base (40%) and sales tax base (10%)
- **Low-Income Students:** Rhode Island uses a combination of property values (50%) and the relative percentage of students eligible for free/reduced lunch in grades Pre-K to 6<sup>th</sup> (50%)<sup>13</sup>
- **Multiple Measures:** Maryland uses a combination of real and personal property values, taxable income and the public utilities assessable base

Our study found that seven states (Connecticut, Massachusetts, Maryland, New Jersey, New York, Rhode Island and Virginia) use some form of income as a measure of a district's fiscal capacity. None of these seven states made use of a multiplicative income factor – in each case an income factor is simply added to the property values. Table 6 summarizes the alternative fiscal capacity measures used by other states.

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<sup>13</sup> Using low-income students as part of the fiscal capacity measure is essentially an income based measure.

**Table 6: States that Measure Fiscal Capacity with Factors In Addition to Property Wealth**

	<b>Property</b>	<b>Income</b>	<b>Other</b>
Connecticut	Property Value 90%	Median Income 10%	
Maryland <sup>14</sup>	Real Property Personal Property	Total taxable Income	Public Utilities Assessable Base
Massachusetts	Property Value 50%	Aggregate personal income 50%	
New Jersey	Based on both property values and property tax rates 50%	Based on Aggregate income and income tax rates 50%	
New York	Property Value 50%	Adjusted Gross Income 50%	
Rhode Island	Property Value 50%		Percentage of students eligible for Free/Reduced lunch in grades PK-6 compared to the state average 50%
Tennessee	Property Tax Base 50%		Sales Tax Base 50%
Virginia	Property Tax Base 50%	Income Tax Base 40%	Sales Tax Base 10%

All data are derived from state sources.

<sup>14</sup> Maryland uses the following formula to determine a district's relative wealth: (Total real property values x 40%) + (total personal property x 50%) + (100% of public utilities' assessable base) + (100% of net taxable income) = total district wealth.

## **Direct Aid to Property Tax Payers**

One way to address the unique needs of HPW/LHI districts, especially for families with lower incomes is to provide relief through assistance targeted directly to tax payers. Two approaches for providing direct assistance to property tax payers are circuit breaker programs and homestead exemptions. This section of the paper addresses both of these issues.

### ***Circuit Breakers***

Studies have found that property taxes tend to be regressive in nature – in fact, a report from the Institute on Taxation and Economic Policy found that in 2007 low-income households paid 3.7% of their income in property taxes while middle-income households paid 2.9% and the wealthiest taxpayers paid just 1.4%.<sup>15</sup> To help offset the regressive nature of property taxes, some states have established circuit breaker programs. Circuit breakers are designed to reduce the property tax liability for individuals whose property tax payments represent a large portion of their household income by providing them with an income tax credit.

The strength of circuit breaker programs is that they provide relief to low and middle-income families and can easily be targeted to specific populations or groups of taxpayers. In addition, the amount of the circuit breaker, or the qualification levels for receiving assistance can be adjusted to reflect changing economic circumstances relatively easily and quickly.

On the other hand it is possible that with a circuit breaker program, the state will end up paying for local decisions as local voters may be willing to approve higher property taxes knowing that the state will pay a portion of the new tax levy. Many state programs have a narrow focus, such as for elderly or disabled taxpayers, and end up providing little or no assistance to other low-income families who might benefit from the tax relief. Finally, many circuit breaker programs have funding caps that limit the assistance available to low income households.

Thirty-five states provide some form of circuit breaker relief. However, most of these state programs are only available to taxpayers who are senior citizens, disabled or both. Only 14 states and the District of Columbia make this program available to taxpayers regardless of age or disability status. Some of the details of these 15 circuit breaker programs include:

- 14 of the 15 circuit breaker programs have some form of income requirement – West Virginia is the only exception.
- All 15 states have maximum household income requirements which range from \$18,000 (New York) to \$190,500 (Connecticut)
- Four states have maximum property value requirements ranging from \$85,000 (New York) to \$500,000 (Vermont)
- Maryland is the only state that has a maximum net worth requirement which is currently set at \$200,000
- The maximum credit for these circuit breaker programs ranges greatly from a low of \$75 (New York) to a high of \$8,000 (Vermont)

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<sup>15</sup> Institute on Taxation and Economic Policy, “*The ITEP Guide to Fair State and Local Taxes.*” Washington, D.C., 2011. Page 26.

For more complete description of each of these 15 circuit breaker programs see Appendix II.

Minnesota and Montana have special circuit breaker programs that are only available to taxpayers who have experienced dramatic increases in their property values – these special credits are in addition to the states’ traditional circuit breaker credits. Minnesota taxpayers whose property taxes increased by more than 12% from 2012 to 2013 are entitled to an additional tax credit of up to \$1,000. Montana has a special circuit breaker program that is available to individuals who have owned their home since 2008. If the home’s value increased by at least 24% between 2008 and 2014 the homeowner is entitled to a reduction in their taxes of between 30% and 80%

## **HOMESTEAD EXEMPTIONS**

Some states provide tax relief to homeowners by removing part of the value of their property from taxation – this is commonly referred to as a homestead exemption. The homestead exemption is intended to both lower tax rates and to make property taxes more progressive.

Homestead exemptions reduce the tax liability of homeowners for any given tax rate by lowering the assessed value on which the tax is levied. On the other hand, such exemptions may shift the property tax burden to non-homestead property. In addition, homestead exemptions are generally available to all qualifying property regardless of the owner’s income, providing assistance to those who need less assistance. Finally, homestead exemptions reduce the overall assessed value of a taxing jurisdiction, effectively lowering local tax capacity. This is not a problem in a foundation based school finance system where the state makes up the difference, but it can have negative impacts on other governments that rely on property tax revenue.

Our study found that twelve states other than Maine, and the District of Columbia provide a homestead exemption to all taxpayers regardless of age or disability status. Maine provides a homestead exemption to individuals who have owned their home for at least twelve months. Qualified property owners receive an exemption of \$10,000 on the value of their property. The following are some of the details of the other 13 homestead exemption programs (For a full description see Appendix II):

- Only Wyoming and the District of Columbia have income qualifications for their homestead exemptions
- Minnesota is the only state that has a qualification on the home’s value
- Kansas only provides the homestead exemption to homes that have experienced home valuation increases of over 7%
- In seven states and the District of Columbia the homestead exemption reduces a taxpayer’s property taxes
- In six states the homestead exemption is designed to reduce a taxpayer’s income tax



## CONCLUSION

As stated earlier in this paper there are several policy options available to Maine to mitigate the issues facing HPW/LHI districts. These options fall generally into two categories, assistance to school districts, and assistance to individuals. With this in mind we have two separate recommendations:

### *Assistance to School Districts:*

If Maine would like to use the school funding system to provide more aid to HPW/LHI districts, we recommend the state use a multiplicative income factor in the formula for measuring a district's relative wealth. The factor would be the ratio of the district's income measure to the state average of that measure. The "property fiscal capacity of the municipality" figure currently used in the school aid formula ( $\$15688 (3-A)(B)$ ) would then be multiplied by this ratio. The result would be that HPW/LHI districts would have a lower fiscal capacity measure, and qualify for more state aid. This factor would reduce aid for districts with median household incomes above the state average, regardless of their relative property wealth. There is a substantial body of research showing that, all things equal, districts with lower (higher) median household incomes have lower (greater) preferences for education and consequently spend below (above) average levels. A multiplicative income factor helps ameliorate these tendencies making access to education services more equitable across all districts.

### *Assistance to Individual Taxpayers:*

If Maine chooses to resolve the problems of HPW/LHI districts through the use of individually targeted approach to taxpayers, we would recommend that the state expand its current circuit breaker to provide a larger amount of property tax relief. An expanded program could establish tiered levels of assistance, and include limits such as a maximum household income to qualify or restricting the assistance to some maximum property value, or possibly some maximum net worth. To fully protect lower income families from excessive property tax burdens, the relief could be pegged to insuring that school property (or total property) taxes do not exceed a certain percentage of family/household income. This latter approach is used in Vermont. Appendix III includes a summary of Vermont's school funding system.

## APPENDIX I

### STATE CIRCUIT BREAKER PROGRAMS

	Income and Other Qualifications	Benefit
Connecticut	The maximum income is \$146,500 for a single filer; \$168,500 for head of household and \$190,500 for filing jointly.	<b>The maximum credit is \$500.</b> The credit is reduced by 10%, for each \$10,000 or fraction thereof in adjusted gross income above \$56,500 for unmarried individuals; \$78,500 for heads of household; and \$100,500 for married households.
District of Columbia	Household gross income must be less than \$20,000.	For household income of \$0-\$2,999, the tax credit equals 95% of property tax exceeding 1.5% of household gross income. For the highest bracket, household income of \$15,000-\$20,000, the tax credit equals 75% of property tax exceeding 4% of household gross income. <b>The maximum credit is \$750.</b>
Maryland	An applicant's income cannot exceed \$60,000. The maximum property tax considered is on first \$300,000 in property value. The maximum net worth is \$200,000, which excludes the residence, IRAs, and other retirement accounts.	For the first \$8,000 of income, tax relief is 100% of property taxes paid. For the next \$4,000 of income, relief is taxes in excess of 4% of income; 6.5% for the next \$4,000 income and 9% for all income above \$16,000.
Maine	Household income cannot exceed \$64,950 (single) or \$86,600 (multiple members). Property taxes must exceed 4% of total household income.	Sliding scale - between 25% and 100% of property tax based on income. <b>The maximum credit is \$400.</b> Senior claimants will receive the greater of the Senior Refund or this, the General Refund.
Michigan	Household income must be \$50,000 or less. Household property value of \$135,000 or less.  A taxpayer does not qualify for the credit if their household income comes 100% from the Department of Human Services.	Taxpayers receive a 60% credit for property tax paid above 3.5% of household income. <b>The maximum credit is \$750.</b>
Minnesota	Household income must be \$103,730 or less.	The benefit is determined by 23 brackets and thresholds ranging from 1% for income up to \$1,519 to 3.5% for incomes between \$68,850 and \$99,239. The benefit is 95% of taxes for the lowest brackets to 50% for incomes between \$68,850 and \$99,239. <b>The maximum benefit is \$2,530.</b>
Montana	For single filers the cap is \$20,890, for multiple applicants/head of household the cap is \$27,745. The reduction applies to the first \$100,000 of taxable market value after applying the homestead exemption.	The benefit is determined by a sliding scale of relief with 3 brackets with tax relief percentages ranging from 80% for claimants with income up to \$8,118 (single) or \$10,825 (married), to 30% for claimants with income from \$12,449 to \$20,296 (single) or \$18,944 to \$27,061 (married).

	Income and Other Qualifications	Benefit
New Hampshire	Income must be below \$20,000 for an individual or \$40,000 for a married person or head of household.	Refund is calculated on statewide property taxes for education on \$100,000 assessed value adjusted by each town's equalized ratio. The percent of taxes refunded range from 100% for those with income below \$12,500 (single person) or \$25,000 (head of household or married person) to 20% for those with the highest eligible income.
New Jersey	Household income must be \$75,000 or less.	For income of under \$50,000 – the credit equals 10% of taxes paid (up to \$10,000). For income between \$50,000 to \$75,000 the credit equals 6.67% of taxes paid (up to \$10,000). <b>The maximum credit is \$1,000.</b>
New Mexico	No tax rebate shall be allowed any taxpayer whose modified gross income exceeds \$24,000. Claimant is eligible if they were not an inmate of a public institution for more than 6 months during the taxable year.	The amount of the benefit varies with income and is based on 9 income brackets. The benefit ranges from 75% of property tax liability for income below \$8,000 to 35% of property tax liability for income between \$22,000 and \$24,000. <b>The maximum rebate is \$350.</b>
New York	Income for individuals cannot exceed \$18,000. Maximum property value considered is \$85,000 (includes all real estate owned).	The benefit is determined by sliding scale of relief with 7 brackets and thresholds ranging from 3.5% if income is under \$3,000 to 6.5% if income is \$14,001 to 18,000. <b>The maximum benefit ranges from \$75 if income under \$1,000 to \$41 if income \$17,000-\$18,000.</b>
Rhode Island	Income ceiling is \$30,000.	There are 5 income brackets for all filers. For those with income less than \$6,000, the credit is the taxes in excess of 3% of income. For those in the top bracket, \$15,001 to \$30,000, the credit is the taxes in excess of 6% of income. <b>The maximum credit is \$300.</b>
Vermont	Household incomes below \$90,000 receive the full adjustment. The adjustment for incomes above \$90,000 is reduced until household income reaches \$97,000 at which point no adjustment is available.  The adjustment only applies to the first \$500,000 of homesite market value. Any value above \$500,000 is subject to the homestead property tax rate of the school district.	The benefit is a credit on property tax bill for school taxes. The credit is the amount that taxes exceed the applicable percentage threshold, which is a specific percentage of income set by the state. <b>The maximum benefit is \$8,000.</b>  <b><u>For a full description of Vermont's circuit breaker program see Appendix III</u></b>

	<b>Income and Other Qualifications</b>	<b>Benefit</b>
West Virginia	All homeowners are eligible if property taxes exceed 4% of their gross household income.	This program provides a refundable credit for property taxes paid in excess of 4% of gross household income. <b>The maximum credit is \$1,000.</b>
Wisconsin	Income ceiling is \$24,680 plus \$500 per dependent.	The credit is equal to 80% of the taxes paid above 8.788% of income. <b>The maximum credit is \$1,168.</b>

*Source: Significant Features of the Property Tax.* Lincoln Institute of Land Policy and George Washington Institute of Public Policy. (Residential Property Tax Relief Programs; accessed: 6/10/2013). Additional information provided from state sources.

## APPENDIX II

### HOMESTEAD PROPERTY TAX EXEMPTIONS

	Special Qualifications	Type of Credit	Taxpayer Benefit
Arizona	None	Property Tax	The state pays 40% of the homeowner's school district primary tax, up to \$600.
Arkansas	None	Property Tax	\$350 reduction in the property taxes assessed on the homestead.
District of Columbia	Income of the household shall not exceed 120% of the lower income guidelines for the Washington Standard Metropolitan Statistical Area.	Property Tax	For a period of 5 years, eligible applicants may receive a tax abatement.
Georgia	None	Income Tax	Homeowners receive an income tax credit equal to the county, state, school, and city taxes on \$8,000 of property value.
Iowa	None	Income Tax	Homeowners receive an income tax credit equal to the county, state, school, and city taxes on \$4,850 of property value. The minimum credit is \$62.50.
Illinois	None	Income Tax	A credit of 5% of real property taxes paid on taxpayer's principal residence is provided on the taxpayer's income tax. The credit is non-refundable.
Kansas	The homes appraised value must have increased by more than 75%.	Property Tax	If the appraised value increases by 75% or more, 80% of the tax attributed to the increase shall be refunded in the first year, reduced to 50% the next year and 25% in the third year.
Maine	None	Property Tax	The first \$10,000 of the homestead's property value is exempted from property taxes.
Maryland	None	Property Tax	A municipality may grant a property tax credit against the county or municipal corporation property tax imposed on a homestead.
Minnesota	The value of the home must be less than \$414,000 to qualify.	Property Tax	Homeowners receive a credit equal to .4% of the first \$76,000 of the qualifying property's market value, minus .09% of the market value in excess of \$76,000. The benefit is phased out at about \$414,000 market value.
Ohio	None	Property Tax	Taxpayers receive a 2.5% reduction on their real property tax bill for owner-occupied residential property.

	<b>Special Qualifications</b>	<b>Type of Credit</b>	<b>Taxpayer Benefit</b>
Wisconsin	None	Income Tax	This non-refundable state income tax credit is 12% of the first \$2,500 of property taxes paid or rent, deemed to be property taxes.
Wyoming	<p>Must be a resident of Wyoming for the past 5 years.</p> <p>The household's gross income may not exceed the 75% of the median gross household income for the applicant's county of residence or the state (\$41,205 in 2010). Household assets cannot exceed \$101,900 per adult member of the household.</p>	Income Tax	The benefit is a refund of up to one-half of the applicant's prior year's property tax, not to exceed one-half of the median residential property tax liability for the applicant's county of residence as determined annually by the department of revenue.

Source: *Significant Features of the Property Tax*. Lincoln Institute of Land Policy and George Washington Institute of Public Policy. (Residential Property Tax Relief Programs; accessed: 6/10/2013). Additional information provided from state sources.

### APPENDIX III

## VERMONT'S SCHOOL FUNDING SYSTEM<sup>16</sup>

In fiscal year 2012 (FY 2012)<sup>17</sup> Vermont raised an estimated \$1.4961 billion to educate 89,115 students in 307 schools operated by 277 districts through 46 supervisory unions, 12 supervisory districts, and 2 interstate districts.<sup>18</sup> This spending amounted to approximately \$16,788 per pupil. Vermont's system for allocating revenue to school districts is unique among the 50 states in that local towns and districts annually determine the spending level for their schools, and the state – through a complex system of property and income taxes and other state sources of revenue – funds the schools in a manner designed to treat taxpayers choosing the same level of spending for the students in their schools equally regardless of their location across the state.

The funding system in use today emerged in response to the 1997 Vermont Supreme Court ruling in *Brigham v. State* and was implemented through Act 60 in 1997 and Act 68 in 2004. This appendix provides a brief historical description of Vermont's school funding system and offers a description of its current operation. As in other states, the actual operation of the school finance system is highly technical. This description is designed to provide the reader with an understanding of how it works, but does not include many of the technical details that can lead to confusion in understanding the overall operation of the system.

### HISTORICAL CONTEXT

Prior to the *Brigham* decision, Vermont relied on a foundation program to fund its public schools. A foundation program is the most common approach to school finance today and relies on a base – or foundation – level of revenue for each school district. To ensure that all school districts have equal access to this level of resources, a fixed tax rate is established, and state aid is provided to districts that are not able to raise the full foundation amount from the fixed tax rate.

Under the system in place at that time, the foundation level was legislatively determined on an annual basis and expressed in terms of funding per weighted ADM (Average Daily Membership). Weighted ADM was determined by assigning weights of 1.25 to secondary students and to students from families receiving food stamps. In addition a variable weight was assigned for pupil transportation (Mathis, 1995). Downes (2004) points out that fluctuations in the state's fiscal status led to Legislative adjustments to the foundation tax rate to reduce the

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<sup>16</sup> This Appendix is adopted from our report to the Vermont Legislature, Picus, L.O., Odden, A., Glenn, W., Griffith, M., and Wolkoff, M. (2012). *An Evaluation of Vermont's Education Finance System*. North Hollywood, CA: Lawrence O. Picus and Associates. Available at [www.lpicus.com](http://www.lpicus.com).

<sup>17</sup> Fiscal years run from July 1 of one year through June 30, of the following year. As used throughout this document when we use the term FY 2012 we are referring to the period of time from July 1, 2011 through June 30, 2012, thus the current fiscal year as of the date of this study is FY 2012.

<sup>18</sup> *2011 Report on Act 3 Section 56, An Act Relating to Fiscal Year 2011 Budget Adjustment*, Report/Recommendations to the House and Senate Committees on Appropriations, Submitted by: Vermont Department of Education, School of Finance Division. April 6, 2011.  
<http://www.leg.state.vt.us/reports/2011ExternalReports/268662.pdf>

state's liability and the state share of education expenditures fluctuated between 20% and 37% of education expenditures. In the period immediately prior to the *Brigham* ruling and passage of Act 60, the state share had been declining.

In addition, prior to Act 60, property wealthy districts were able to increase spending above the foundation level with a lower incremental tax rate than property poor districts, and thus benefited from both lower property taxes and higher per pupil revenues. Despite efforts – to that time unsuccessful – by the legislature to modify the system, the combination of reduced state share plus property tax rate inequities led to the filing of the *Brigham* suit. The ruling by the state's highest court required that local tax efforts for equal levels of school spending be substantially equal, and that the wealth of the state, not of local school districts, be the determinant of how much was spent to educate Vermont's school children. As described below, the Legislature responded with a system designed to both equalize property tax burdens and individual taxpayer liability on the basis of their household income.

## **ACT 60**

Passed just four and a half months after the *Brigham* ruling, Act 60 dramatically changed the way Vermont's schools were financed. Act 60 established a two tier funding system and added an income adjustment to limit the amount individual taxpayers would pay for schools. The first component of the new system was a basic level<sup>19</sup> of spending for all districts, financed in part by a statewide property tax. Districts choosing to spend more than the basic level participated in a power-equalized system that included a recapture provision. A unique aspect of this second tier of the funding system was that it was funded by an additional property tax rate assessed in proportion to the level of spending a town chose. The property wealth of all districts that wanted to spend above the base spending level was pooled, and a tax rate based on the district's desired spending level set to produce the additional funds desired, with each district receiving from the "sharing pool" of revenue the amount it wanted to spend above the base spending level.

What made the second tier unique was that it did not rely on any revenue sources other than property taxes beyond the base level. Towns that chose to spend above the base level informed the state what their spending level would be. The total additional revenues for all towns that went above the base level would come from the "sharing pool" that was funded by additional property taxes on those towns that chose to raise additional funds. Town tax rates above the base rate were determined on the basis of how much their per-pupil funding proportionally exceeded the base level (that is if per pupil spending above the base level was twice as high as another district, the tax rate beyond the base rate was twice as high as well) and how much money was needed to be raised to fund fully the sharing pool from these revenues.

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<sup>19</sup> Students of school finance will want to call this a foundation amount. Vermont does not use that term and points out that since the passage of Act 60 and as part of Act 68, the basic amount is determined annually as part of the appropriation process for education. Generally in school finance, the foundation level is determined on the basis of some minimum amount needed for all schools; this is not part of the discussion in determining the annual basic amount in Vermont. Maine's equivalent today is the EPS funding level, the major difference being that the per pupil funding level in most foundation programs is the same for all districts, while Maine's adequacy based EPS system generates a different per pupil funding level for each district.



Property tax revenues were then placed in the “sharing pool” by the state and redistributed to school districts.

Setting proportionate tax rates for the same spending levels meant that property rich districts would raise more money at the same tax rate than property poor districts. The effect of the sharing pool process was to fully recapture any property tax revenues generated by property wealthy districts as all districts making the same spending level choice paid the same tax rate. Therefore, property wealthy districts funded a disproportionate percentage of the sharing pool even when taxed at the same rate as poorer districts. This feature of the sharing pool led a number of wealthy districts to limit their participation in the sharing pool to minimize the amount of property tax funding that was recaptured. While some districts were able to fund all expenditures above the basic amount through private donations, many relied on a combination of private funding and the sharing pool. At its height, wealthy districts raised about \$13.9 million total privately out of a system with total spending in the range of \$1 billion. As described below, Act 68 eliminated the sharing pool and the incentive to raise such large amounts of private funds.

In addition, an income adjustment was enacted to impact individual tax liability for schools. In districts that only spent the basic amount, school taxes for taxpayers with household incomes below \$75,000 were limited to the lesser of the homestead property tax (the tax liability on their homestead which is their house and up to two surrounding acres) or two percent of their income. For spending above the base amount, the percent of income was increased proportionally along with the property tax rate. This income adjustment was the result of many legislators wanting to move the state to an income based tax system for schools, and represented a compromise between those who wanted to rely solely on income taxes and those who felt residential property taxes should be part of the funding scheme as well. Although Downes (2004) suggests the income adjustment was primarily developed to limit the tax liability of low-income families living in high wealth or “gold town” school districts, interviews with officials who participated in the development of the system suggest this was not the primary goal. Rather the primary goal was an income tax based school funding system.

Act 60 succeeded in eliminating the relationship between property wealth and school district spending. However it was widely unpopular in the gold towns, many of which elected to limit participation in the sharing pool and instead raised funds through private donations as described above. The state also took on additional funding responsibility for schools – and began the process whereby all property tax collections for schools are considered state, not local, revenue sources. In response to the many concerns about Act 60 and the complexities of the “sharing pool,” the state enacted Act 68 in 2004.

## **ACT 68<sup>20</sup>**

Act 68 as it modified Act 60, remains the basis for Vermont’s school funding system today. Act 68 eliminated the two tier funding system placing all education funds for schools in one large pot, not two. It also ended the “sharing pool” and split the property tax base between residential and non-residential property. The non-residential property tax rate is determined by

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<sup>20</sup> This section draws heavily from the Vermont Department of Education’s document, *Vermont’s Education Funding System*, June 2011.

the state and is uniform across all towns but adjusted for the common level of appraisal or CLA as described below. Changes since that time have increased the income level at which the income adjustment to homestead property taxes can be used and made other small alterations to the operation of the system. According to the Vermont Department of Education (2011), today, regardless of the level of per pupil spending approved by the voters of each town, taxpayers with homesteads of the same market value or the same household income, in districts with the same per pupil spending, should have the equal tax bills for education. School funding under this system is outlined below.

## Education Spending

Under Act 68, total funding for education has two components, categorical grants and education spending. Categorical grants are separate revenue sources provided by the state to school districts for specific purposes. In FY 2012 these grants amounted to \$205.7 million as displayed in Table 2.1. Education spending is essentially all other expenditures for education and is determined by totaling all budgeted expenditures of all school districts (including any district carryover deficits if they exist) and subtracting the categorical grants. For FY 2012 education spending was estimated to be \$1.125 billion, which amounts to 78% of total PK-12 resources.

In addition to these two components, an estimate of total estimated revenue for FY 2012 includes the state appropriation for school employee pensions (\$57.3 million) as well as Federal funding (estimated at \$108 million) for a total of \$1.496 billion or \$16,788 per ADM.

**Table 2.1: Vermont Categorical Grants, FY 2012**

<b>Categorical Grant</b>	<b>Amount (\$)</b>
Special Education Aid (about 60% of eligible special education)	148,587,443
Transportation Aid (about 44% of transportation expenditures)	16,313,885
Small School Grants	7,100,000
Aid for State-placed Students	15,000,000
Technical Education Aid	12,872,274
Essential Early Education Aid	5,782,900
<b>Total</b>	<b>205,656,502</b>

Source: Vermont Department of Education, 2011

Property taxes are split into two components, a non-residential component and the homestead property tax. The tax rate for non-residential property is set annually by the state as part of the process of determining how much revenue will be needed to fund schools. The residential component – which is subject to both the income adjustment and a circuit breaker relief program for households with incomes below \$47,000 – is the most complex part of the formula. Act 68 establishes tax rates of \$1.59 per \$100 of fair market value for non-residential property taxes and a base rate of \$1.10 for homestead property although both are adjusted annually by the Legislature upon recommendation by the Tax Commissioner based on projections of the amount of money in the education fund reserve and the stipulation that the non-residential property tax revenues must fund at least 34% of education spending (total minus

categoricals). For FY 2012, the non-residential property tax rate was \$1.36 and the base homestead rate was \$0.87.

Determining the actual tax payments for individuals in local school districts is relatively complex and based on a number of factors. The state does not limit how much a local district can spend on education although as described below there is a disincentive to spend at very high levels.

To determine homestead tax rates, the first step occurs when the Legislature establishes the base homestead tax rate (\$0.87 for FY 2012) and the base education-spending amount per pupil (\$8,544 in FY 2012). A district's education budget, which can be larger than the base spending, is then divided by its equalized pupil count.<sup>21</sup> This yields an education spending per equalized pupil figure for each district in the state. That amount is compared to the base education-spending amount per pupil to determine the percentage variance from that amount. If a district's equalized per pupil spending amount is less than or equal to the base education spending level (\$8,544), its tax rate is the base homestead rate (\$0.87). If the district's per pupil spending exceeds the basic education per pupil amount, the base education homestead tax rate is increased by the percentage by which its per pupil spending amount exceeds the base amount. In addition, there is a threshold beyond which increases are funded at rates double the proportional increase (see below). The following describes how the education homestead tax rate is first determined for each town and then for each individual resident's property in the town.

First, a district's base homestead tax rate cannot be lower than the state determined base rate (\$0.87 in FY 2012). Districts spending less than the base spending level therefore pay the same homestead tax rate as districts spending at the base spending level.

Second, when a town decides to spend above the base spending level, the education homestead tax rate of \$0.87 is increased proportionally, i.e., by the same percentage.

Third, there is a built in disincentive to spend above a certain point, called the High Spending Threshold. The High Spending Threshold is determined statutorily to be 25% above the state average education spending per pupil for the prior year. In FY 2012, this threshold is \$14,733 per pupil. For districts choosing to spend above this level (after adjustments for approved capital construction debt services, certain special education costs, and deficit repayments in some cases) the marginal homestead tax rate increases at twice the rate it increases below the threshold. The marginal percentage of income paid under the income adjustment also doubles above this threshold.

Fourth, an individual taxpayer's tax payment is subject to an income-based adjustment if their household income is below \$90,000 (with a smaller adjustment between \$90,000 and \$97,000). In 2012, for school districts with per pupil spending equal to the base spending level (\$8,544), the homestead property tax is the lower of the property tax assessment or 1.8% of household income. As equalized spending per pupil exceeds the base spending level, the percentage of household income used to determine tax liability increases by the same percentage

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<sup>21</sup> The equalized pupil count is determined by the Vermont Department of Education based on a specific formula and differs from enrollment, ADM and weighted ADM.

that spending exceeds the base amount. This too is subject to the High Spending Threshold so the additional proportion of income to be paid in school taxes doubles for amounts above the threshold. Above incomes of \$90,000 this adjustment is reduced until household income reaches \$97,000 at which point no adjustment is available.

Fifth, the income adjustment to property taxes only applies to the first \$500,000 of homesite market value. Any value above \$500,000 is subject to the homestead property tax rate of the school district.

Sixth, Vermont has a circuit breaker property tax relief program for households with incomes below \$47,000. This provides further income based property tax relief for some households. The important consideration related to the circuit breaker is that once a taxpayer qualifies for circuit breaker assistance, they do not pay for additional homestead property taxes even if their school district's spending increases. This adjustment has been in place since the 1970s, but after Act 60's passage, the income adjustment reduced tax liabilities of many households and reduced the number of households that qualify for the circuit breaker, which is applied after the income adjustment is computed.<sup>22</sup>

Seventh, there is one more adjustment that has caused a great deal of confusion about the system. The common level of appraisal or CLA is designed to adjust property tax rates to accommodate differences in assessment practices across the state. The CLA is computed by the Vermont Tax Department based on actual sales data over the past three years and additional statistical analysis. The CLA compares the town's education grand list with what the grand list would be if all properties were listed at 100% of fair market value as determined through this analysis. The CLA is then expressed as a percentage such that a town that has under assessed its property would have a value less than 100% and a town that over assessed its property would have a value exceeding 100%. The CLA is then applied to the town's education tax rate by dividing the homestead and non-residential tax rates by the CLA. For example in a town with an education tax rate of \$1.22 and a CLA of 80%, the tax rate would be divided by 0.8 and the actual tax rate shown on tax bills would be \$1.53 ( $\$1.22/0.8$ ). Similarly, a town with a CLA of 120% would find a tax rate of \$1.22 adjusted downward to \$1.02 ( $\$1.22/1.20$ ). Again, this important adjustment, which is made in most other states as well, is to ensure that property tax rate calculations are made on the basis of comparable valuing of property.

Eighth, another confusing aspect of the system is the annual determination of the base amount as well as the non-residential property tax rate and the homestead base tax rate. Because these are determined by the Legislature and likely to be impacted by the level of other state revenue available for education, if a district's education spending were to remain constant from one year to the next, but the Legislature were to reduce the funding from other state sources, homestead and/or non-residential property tax rates could increase. Similarly, it is possible for a town to hold spending constant while others increase spending and similarly see tax rate increases.

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<sup>22</sup> It should also be noted that Vermont has a \$15,000 homestead exemption for property taxes. Property worth less than \$15,000 is not subject to taxation, and tax rates are applied to homestead property values minus the \$15,000 exemption.

While this system appears quite complex, the intent is to ensure that property tax payments, whether based on the value of the property or household income should be equal for individuals in school districts with the same per pupil spending level and equal property values or household incomes. In short, the property wealth of individual school districts and the income of district residents should not impact the amount of money a district spends for education.

## CHAPTER 3: STAKEHOLDER INPUT

An important component of the study was gathering stakeholder input to the design of Maine's school funding model. We accomplished this through a weeklong series of Professional Judgment Panels (PJP) and a series of evening stakeholder forums. On July 16, 17 and 18, 2013, our firm conducted five PJP sessions and four stakeholder forums. We conducted a PJP and a forum in Presque Isle (July 16), Farmington (July 17) and Bangor (July 17) and two PJPs and a forum in Portland (July 18). The task for the PJPs was to provide input and commentary on the details of the EPS and EB approaches for the purpose of recalibrating the EPS formula. The purpose of the Forums was to gather commentary on any issues related to Maine's school funding system. We believe that the PJPs and Stakeholder Forums provided significant new information that will help the Legislature review and evaluate Maine's school funding structure.

Overall, the feedback we received can be summarized in eight major areas as follows. These are presented without any specific recommendation as general background. They are in no particular order of importance.

1. There was general dissatisfaction with the state's implementation of the voter-approved mandate that the state fund 55 percent of the EPS. This dissatisfaction was twofold: participants in both the PJPs and Forums wanted a clearer definition of what is included in the EPS, and there was unanimous support that the state meet its legal commitment to fully fund 55 percent of the EPS.
2. There was concern that while the EPS was initially intended to define a "minimum" level of school funding, over time the EPS has become the "maximum" amount of support for schools in the eyes of many citizens. There was the hope that recalibration of the EPS could move beyond a minimum, and perhaps to a more comprehensive approach that provides sufficient resources for Maine's educators to offer instruction in all of Maine's Learning Results. Participants also recognized the need to educate a large portion of students to the new proficiency expectations of the Common Core Curriculum Standards.
3. The state's approach to funding transportation services should be re-assessed. Many felt the current approach was insufficient and given the recommendations in the EB model for expanded before and after school and summer school programming, the need for transportation and related funding becomes more urgent.
4. There was significant interest and concern about the issue of high property wealth and low household income school districts and how the state's school funding system and its overall tax system could be designed to recognize these anomalies.
5. There was general dissatisfaction with the current regional cost adjustment in the EPS formula.
6. There was significant concern, by teachers in particular, that the state may be moving toward a teacher compensation system that includes performance pay (or what some

Maine educators called “merit pay”). The concern centers mainly on the way performance would be measured and a perception that such a system would undermine collaboration if only certain teachers could attain a higher level of pay.

7. Several individuals made proposals to make the EPS formula more transparent regardless of how it is modified in the future. They suggested placing the components and formulas on the web and making it easy to see how each SAU’s EPS funding is calculated.
8. There was dissatisfaction with the uncertainty that surrounds the establishment of the required local property tax rate each year. Concerns focused on the variation in the tax rate and the lateness in the budget cycle at which the final rate was established. Participants at both PJP and Stakeholder Forums felt uncertainties complicated their ability to engage in long term planning and budgeting.

Our July 31, 2013 memo to the Legislature provides a detailed line-by-line description of the recommendations we heard at the PJP and stakeholder forum meetings. To facilitate analysis of the differences between EPS, the EB model as we developed it, and the recommendations of the stakeholders, we provide Table 3-1 below. In addition to the three columns described, we have included in this table the changes to the EB model requested by the Committee and simulated in chapter 5 below.

The PJPs strongly supported the following components of the EB model:

- d) Resources for professional development
- e) Resources for economically disadvantaged students
- f) Elimination of instructional aides and provision of professional teachers to provide extra help for struggling students.

The PJPs also suggested several Maine specific modifications to the EB model which we support. These include:

- d. In place of the EB model’s use of one overall weight for special education students, the PJPs recommended that the state fund 100% of the needs of “high cost” students with disabilities. The “high cost” benchmark would need to be determined over time but they suggested it at approximately \$20,000. For students who did not meet the “high cost” benchmark, a weight for all *other* special education costs would be computed. We estimate this weight would be lower than the current weight of 1.27 and would need to be determined and reviewed over time. The weight would be applied to students identified as needing special education services, which would be all special education students minus those in the high cost category.
- e. For career technical education, the PJPs recommended the state’s current approach remain in place, but that policy makers pay special attention to forthcoming recommendations from a Task Force addressing this issue and its funding.

The panelists also had several recommendations that we do not support, but recommend the Committee consider in its deliberations. These include:

- g. Lower class sizes in grades 4-12
- h. Additional nursing staff
- i. Higher allocations for gifted and talented students
- j. More administrative staffing at all three school levels. This took the form of adding an additional assistant principal above the EB recommendations at each prototypical school
- k. More computer technicians in each school
- l. More state support for health care costs.





**Table 3.1: Comparison of Funding Elements**

Element	EPS	EB	PJP Panels	Committee Decision
<b>PRESCHOOL</b>				
Class Size	Counted as full-day K students, resourced on elementary staffing ratio of 1:17 for teachers	Preschool class size of 1 teacher for every 15 students	Same as EB	Same as EB
Instructional Aides	1:100 for Ed Techs	1 Instructional Aide or Ed Tech for every 15 students	Same as EB	Same as EB
<b>CLASS SIZE AND STAFFING RATIOS</b>				
Class Size & Staffing Ratios (Excluding Instructional Coaches which EB adds)	<p>Elementary staffing ratio of 1:17 for teachers</p> <p>Middle school staffing ratio of 1:16</p> <p>High school staffing ratio of 1:15</p>	<p><i>Elementary</i> core class sizes of 15 K-3, and 25 grades 4-5, with additional 20% for elective classes, for overall elementary staffing ratio of 1:15.62</p> <p><i>Middle</i> school core class sizes of 25 with 20% more for elective classes for overall ratio of 1:20.83</p> <p><i>High</i> school core class sizes of 25 with 33% more for elective classes for overall ratio of 1:18.75</p>	Generally same as EB but many wanted to reduce class sizes in grades 4-12 to around 20	Same as EB but class sizes of 20 in grades 4 and 5
<b>INSTRUCTIONAL COACHES/PROFESSIONAL DEVELOPMENT</b>				
Instructional Coaches	\$24 per pupil	1 instructional coach for every 200 students	Same as EB	Same as EB
Pupil Free Days	NA	Total of 10 pupil free days for the teacher work year so an approximate increase of 5 days and paid at the average daily rate	Same as EB	Same as EB
Resources for Training	\$57 per pupil	\$100 per pupil	Same as EB Consider targeting some of these PD resources	Same as EB

Element	EPS	EB	PJP Panels	Committee Decision
<b>EXTRA HELP FOR STRUGGLING STUDENTS</b>				
Economically Disadvantaged Students	Extra weight of 0.15 for each SAU ED student			
Tutors or Tier II Intervention teachers		1 FTE per 100 ED students	Same as EB	Same as EB
Extended Day Academic Help Programs		1 FTE per 120 ED students	Same as EB	Same as EB
Summer School		1 FTE per 120 ED students	Same as EB	Same as EB
Additional Pupil Support (in addition to guidance and nurse discussed below)		1 FTE per 100 ED students	Same as EB	Same as EB
LEP/ELL Students	Extra weight Based on SAU LEP student count: <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>&lt;15</span> <span>0.7</span> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>16-250</span> <span>0.5</span> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>&gt;251</span> <span>0.525</span> </div>	1 FTE per 100 ELL students	Keep EPS approach Consider a “newcomer” program in some SAUs	Same as EB
<b>SPECIAL EDUCATION</b>				
Special Education Overall	Extra weight of 1.27 for all identified special education students, plus adjustments for small districts	Leave as is for now but consider PJP recommendation in the future	Lower weight applied to all <i>identified</i> non-severe special education students	Leave as is for now
Special Education, Mild and Moderate		1 FTE teacher and 0.5 special education aide per 150 all students		
Special Education, Severe and Profound		100 % state funded	100 % state funded beginning at \$20,000	Leave as is for now
State aid deductions		Federal Title VIb		
<b>GIFTED AND TALENTED</b>				
Gifted and Talented	State approved costs	\$25 per all students	Raise amount per pupil to \$50-100	Greater of \$25 per pupil or current GATE program allotment
<b>CAREER AND TECHNICAL</b>				
Career and Technical	State approved costs	\$9,000 per CTE Teacher for High Tech Equipment	Same as EPS	Same as EPS
<b>SUBSTITUTE TEACHERS</b>				
Substitute teachers	\$36 per pupil	5% of all teaching staff	Same as EB	Same as EB

Element	EPS	EB	PJP Panels	Committee Decision
<b>PUPIL SUPPORT STAFF</b>				
Guidance Counselors	1 FTE per 350 elementary and middle students 1 FTE per 250 high school students	1 FTE per 450 elementary school students 1 FTE per 250 middle and high school students	Same as EB	Same as EB
Nurses	1 health professional per 800 students	1 Nurse per 750 students	Increase nurse staff to 1 per 450-500 students  Monitor possible need for more support for homeless in future	Same as EB
<b>INSTRUCTIONAL AIDES/ ED TECHNICIANS</b>				
Instructional Aides/Ed Technicians	1 per 100 pupils K-8 1 per 250 9-12 students	None	Same as EB	Same as EB
<b>SUPERVISORY DUTY AIDES</b>				
Supervisory Duty Aides	No specific allocation	1 FTE per 225 elem. 1 FTE per 225 middle 1 FTE per 200 HS	Same as EB	Same as EB
<b>LIBRARY</b>				
Librarians	1 per 800 K-12 students	1 librarian position for every 450 elementary and middle students and every 600 high school student	Same as EB	Same as EB
Library technicians	1 library technician for every 500 K-12 students	No library technicians	Same as EB	Same as EB
<b>SCHOOL ADMINISTRATION</b>				
Principals	1 administrative position per 305 K-8 students 1 administrative position per 315 9-12 students	1 per 450 elementary and middle students 1 per 600 high school students	Same as EB	Same as EB
Assistant Principals	No specific recommendation	1 per 600 high school students	1 AP for every 450 elementary and middle school students. 1 AP for every 300 HS	Considering PJP recommendation

			students	
Element	EPS	EB	PJP Panels	Committee Decision
<b>SCHOOL SECRETARIES</b>				
School Clerical	1 per 200 K-12 students	1 per 225 elementary and middle students 1 per 200 high school students	Same as EB	Same as EB
<b>TECHNOLOGY</b>				
Computer Technologies	\$95 per K-8 pupil \$288 per high school pupil	\$250 per all pupils	Same as EB	Same as EPS
Instructional Materials	\$377 per K-8 pupil \$466 per 9-12 pupils	\$170 per K-8 pupil \$205 per high school pupil	Same as EPS	Same as EPS
Student Activities	\$33 per K-8 pupils \$111 per 9-12 pupil	\$250 per all pupils	Same as EPS	Same as EPS
<b>CENTRAL ADMINISTRATION</b>				
Central Administration	\$215 per pupil	\$488 per pupil to support a prototypical 3,900 Student SAU central office of 9 professional, 9 clerical/secretarial and 1 computer technician positions.	Same as EB	Same as EB
<b>MAINTENANCE AND OPERATIONS</b>				
Maintenance and Operations	\$1,013 per K-8 student \$1,204 per 9-12 students  To support custodians and groundskeepers as well as major facility renovation	\$462 per pupil to support custodians and groundskeepers  Retain EPS figures as they include major facility renovation which cannot be separated	Same as EPS	Same as EPS

Element	EPS	EB	PJP Panels	Committee Decision
<b>EMPLOYEE BENEFITS</b>				
Employee Benefits	Teachers, Guidance Library, Health 21.65 % Ed Technicians 36 % School Admin 14 % Clerical 29%	Teachers, Guidance Library, Health 21.65 % Ed Technicians 36 % School Admin 14 % Clerical 29%	Same as EPS/EB but consider higher support of health costs	Same as EPS/EB
<b>REGIONAL COST ADJUSTMENT</b>				
Regional Cost Adjustment	The Maine Regional Cost Adjustment based on labor market regions and comparisons of actual teacher salaries adjusted for experience and education.	A more economic approach using either the Hedonic or Comparable Wage Index (CWI) approach, with a preference for the CWI	Shift to an hedonic or CWI and perhaps have an index no lower than 1.0	Still considering EB recommendation to switch to the CWI





## **Summary of Feedback and Commentary on Recalibrating the EPS Formula Provided by Maine Professional Judgment Panels and Stakeholder Forums**

Allan Odden  
Lawrence O. Picus  
Anabel Aportela  
Mike Griffith

July 31, 2013

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# **SUMMARY OF FEEDBACK AND COMMENTARY ON RECALIBRATING THE EPS FORMULA PROVIDED BY MAINE PROFESSIONAL JUDGMENT PANELS AND STAKEHOLDER FORUMS**

**Presented to the  
Maine Legislature's  
Joint Standing Committee on Education and Cultural Affairs**

**July 31, 2013**

In Part 1 of our Independent Review of Maine's Essential Programs and Services Program, we used the Evidence Based (EB) model lens to analyze the elements, ratios and formulas used in Maine's Essential Programs and Services (EPS) school finance formula. The Evidence Based Model is an alternative, but similar, approach to estimating adequate school funding that was developed by Lawrence O. Picus and Associates' lead partners.<sup>23</sup>

On July 16, 17 and 18, our firm conducted five Professional Judgment Panels (PJP) and four Stakeholder Forums. We conducted a PJP and a forum in Presque Isle (July 16), Farmington (July 17) and Bangor (July 17) and two PJPs and a forum in Portland (July 18). The task for the PJPs was to provide input and commentary on the details of the EPS and EB approaches for the purpose of recalibrating the EPS formula. The purpose of the Forums was to gather commentary on any issues related to Maine's school funding system. We believe that the PJPs and Stakeholder Forums provided significant new information that will help the Legislature review and evaluate Maine's school funding structure.

This short synthesis of the input from those PJPs and Forums is provided in two sections. Section 1 presents general and overall commentary that emerged from both the PJPs and the Forums. Section 2 presents comparisons between the EPS and EB elements, formulas and ratios, and the recommendations from our meetings on whether, and if so how, to change them. Recommendations were made primarily, but not solely, by the PJPs.

## **GENERAL COMMENTARY ON MAINE SCHOOL FUNDING**

We present these general comments without any specific recommendation as general background for the Legislature as it continues to improve Maine's approach to school funding. They are in no particular order of importance.

1. There was general dissatisfaction with the state's implementation of the voter-approved mandate that the state fund 55 percent of the EPS. This dissatisfaction was twofold: participants in both the PJPs and Forums wanted a clearer definition of what is included in the EPS, and there was unanimous support that the state meet its legal commitment to fully fund 55 percent of the EPS.

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<sup>23</sup> Allan Odden and Lawrence O. Picus. *School Finance: A Policy Perspective 5<sup>th</sup> Edition*. New York: McGraw Hill (2014).

2. There was concern that while the EPS was initially intended to define a “minimum” level of school funding, over time the EPS has become the “maximum” amount of support for schools in the eyes of many citizens. There was the hope that recalibration of the EPS could move beyond a minimum, and perhaps to a more comprehensive approach that provides sufficient resources for Maine’s educators to offer instruction in all of Maine’s Learning Results. Participants also recognized the need to educate a large portion of students to the new proficiency expectations of the Common Core Curriculum Standards.
3. The state’s approach to funding transportation services should be re-assessed. Many felt the current approach was insufficient and given the recommendations in the EB model for expanded before and after school and summer school programming, the need for transportation and related funding becomes more urgent.
4. There was significant interest and concern about the issue of high property wealth and low household income school districts and how the state’s school funding system and its overall tax system could be designed to recognize these anomalies.
5. There was general dissatisfaction with the current regional cost adjustment in the EPS formula.
6. There was significant concern, by teachers in particular, that the state may be moving toward a teacher compensation system that includes performance pay (or what some Maine educators called “merit pay”). The concern centers mainly on the way performance would be measured and a perception that such a system would undermine collaboration if only certain teachers could attain a higher level of pay.
7. Several individuals made proposals to make the EPS formula more transparent regardless of how it is modified in the future. They suggested placing the components and formulas on the web and making it easy to see how each SAU’s EPS funding is calculated.
8. There was dissatisfaction with the uncertainty surrounding establishment of the required local property tax rate each year. Concerns focused on the variation in the tax rate and the lateness in the budget cycle at which the final rate was established. Participants at both PJP and Stakeholder Forums felt uncertainties complicated their ability to engage in long term planning and budgeting.

In addition to these general findings, below we provide specific examples of the suggestions made by participants at the PJP and Stakeholder Forum sessions.

## RECALIBRATION OF THE ELEMENTS OF THE EPS

In this section we compare each programmatic element of the EPS and the EB models and discuss the specific input from the Professional Judgment Panels (and Stakeholder Forums when such specifics were provided). We have attempted to present a synthesis of overall commentary and have not listed every comment that was made.

The approaches of the different models are shown below:

Element	EPS	EB
Class Size	Counted as full-day K students, resourced on elementary staffing ratio of 1:17 for teachers	Preschool class size of 1 teacher for every 15 students
Instructional Aides	1:100 for Ed Techs	1 Instructional Aide or Ed Tech for every 15 students

All Panels supported inclusion of preschool in the funding model and supported the EB ratios that include 1 FTE teacher and 1 FTE instructional aide for every 15 PK students.

## CLASS SIZE AND STAFFING RATIOS

The approaches of the different models are shown below:

Element	EPS	EB
Class Size & Staffing Ratios (Excluding Instructional Coaches which EB adds)	Elementary staffing ratio of 1:17 for teachers	<i>Elementary</i> core class sizes of 15 K-3, and 25 grades 4-5, with additional 20% for elective classes, for overall elementary staffing ratio of 1:15.62
	Middle school staffing ratio of 1:16	<i>Middle</i> school core class sizes of 25 with 20% more for elective classes for overall ratio of 1:20.83
	High school staffing ratio of 1:15	<i>High</i> school core class sizes of 25 with 33% more for elective classes for overall ratio of 1:18.75

Before summarizing the discussion, it should be noted that the EB ratios are enhanced with the inclusion of Instructional Coaches as described below. When coaches, who are not specifically included in the EPS and must be carved from the EPS staffing ratios, are included, the overall staffing ratios in the two models are more closely aligned.

There was considerable discussion of class size and the mix of core and elective teachers in the model. These include the following:

1. There was dislike of the distinction between core and elective classes in the EB model given the requirement that Maine schools teach *all* of the Maine Learning Results subject areas. In other words, the courses the EB model considers “electives” are not optional under the Maine Learning Results.
2. This distinction tended to complicate a comparison of the two approaches and the course offering requirements necessary to meet the Maine Learning Results. Nevertheless, we believe that both EPS and EB approaches are adequate for schools to provide all of the classes required to teach all students all subjects included in Maine’s Learning Results at all school levels.
3. Both approaches are sufficient, for example, for all middle or high schools to provide either a six period schedule with teachers providing instruction for five periods, or a seven period schedule with teachers providing instruction for six of those periods, conditions in several schools represented in the panels. Both EPS and EB are sufficient for other school schedules although the high school approach is more generous than the middle school approach in both models.
4. There was concern about elementary class size “jumping” from 15 in K-3 to 25 in grades 4-5. This concern was expressed in all PJP panels even though it was noted that such a school resourcing approach would allow for elementary schools to have class sizes of about 18 across grades K-5 (assuming the ratios are not mandates on how local SUAs use the resources).
5. Although there was discussion of how various school schedules and the related staffing formulas allowed for sufficient pupil-free time during the regular school day for teachers to work in collaborative teams (using curriculum standards and student data to develop more effective lesson plans and standards-based curriculum units), there was no agreed upon solution to this issue, other than Panels agreeing that there should be time during the regular day for teacher collaborative teams to meet 2-3 times a week. However, several panelists noted that time for individual planning for elementary teachers was scarce, and sometimes non-existent, so additional time for collaborative work might be difficult to produce. The EB model’s use of specialist teachers makes it possible to have five pupil free periods of close to an hour each day.
6. In several SAUs and schools represented by individuals at our meetings, actual class sizes in middle and high schools were above 25, sometimes significantly above 25, in core classes while class sizes were lower in elective subjects. This is typical across the country and raises the issue, from our perspective, of how staff resources are allocated inside schools, given the strong goals in improving student performance in core subjects like math, science, STEM, reading/English/language arts/writing and perhaps history.

7. Some panels recommended reducing class sizes in elementary schools to 18-20, others suggested reducing all class sizes to 20, and one panel recommended modest increases the ratio for elective classes for both elementary and middle schools.
8. When all teachers and instructional coaches are counted toward staffing ratios, using the class size ratios in each model, the staffing ratios are:

	<b>EPS</b>	<b>EB</b>
Elementary	1:17	1:13.45
Middle	1:16	1:18.75
High	1:15	1:17.1

The PJP recommendations would lower all these ratios.

The rationale for smaller classes from all groups is that students come to school with increased needs, not all driven by economic disadvantage. Students have more health, emotional, and behavioral needs than ever before. The smaller class sizes would allow teachers to provide support to all students.

While Lawrence O. Picus and Associates believes the EB recommendations are adequate for achieving high student performance, the Committee should consider the input from the PJPs, all of which suggested smaller class sizes and in some cases more resources for elective classes.

### **Instructional Coaches/Professional Development**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Instructional Coaches	\$24 per pupil	1 instructional coach for every 200 students
Pupil Free Days	NA	Total of 10 pupil free days for the teacher work year so an approximate increase of 5 days and paid at the average daily rate
Resources for Training	\$57 per pupil	\$100 per pupil

Neither the EPS nor EB model recommendations for professional development provide different levels of resources for different school levels. However, the EB provides more robust professional development resources including one instructional coach for every 200 students (e.g., 2 FTE positions for a school of 400 students). Instructional coaches work with collaborative teams helping them to use student data to improve the instructional program, model effective lessons for teachers, observe teachers and give feedback on how to improve their instructional practice, and provide other support as identified. The EB model provides a total of 10 pupil free days for training. And the EB model provides \$100 per pupil for training (which

can be provided by central office staff or outside experts) and other expenses compared to \$57 per pupil in the EPS.

All panels supported the EB approach, particularly the strong emphasis on instructional coaches.

The rationale was at least three fold:

- Effectively teaching students to proficiency in the Common Core Standards will require significantly improved instruction
- The additional needs of the students now attending schools require greater differentiation and accommodation inside regular classrooms
- Technology needs to be woven into all curriculum programs and instruction

All of these issues make the instructional tasks more complex, thus driving the need for an ongoing, systemic and comprehensive professional development program.

One panel suggested that these resources be targeted to ensure that they were spent on instructional coaches and related services, and not in other parts of SAU budgets.

### **Extra Help for Struggling Students**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Economically Disadvantaged Students	Extra weight of 0.15 for each SAU ED student	
Tutors or Tier II Intervention teachers		1 FTE per 100 ED students
Extended Day Academic Help Programs		1 FTE per 120 ED students
Summer School		1 FTE per 120 ED students
Additional Pupil Support (in addition to guidance and nurse discussed below)		1 FTE per 100 ED students
LEP/ELL Students	Extra weight Based on SAU LEP student: <15 0.7 16-250 0.5 >251 0.525	1 FTE per 100 ELL students

All Panels were in agreement that economically disadvantaged students and LEP/ELL students require more instructional resources. And both EPS and EB models provide additional resources to SAUs that have economically disadvantaged students (ED) or limited English proficient (LEP) students (termed English language learning or ELL students in the EB approach). The EB approach provides a higher overall level of resources for ED students while in the Maine context EPS offers more resources to schools with LEP or ELL students.

The rationale for the EB's heavier emphasis on extra resources for struggling students is that a more robust and intensive set of extra help services can function to keep more students on track to proficiency and over time reduce the number of students identified with a specific disability. This approach also is consistent with and linked to the EB emphasis on enhancing the first dose of instruction, (called Tier 1 instruction in the Response to Intervention (RTI) approach to serving all students), with its more robust set of professional development resources and time for collaborative teacher teamwork. The concept is that if initial instruction is much better and followed with a series of extra help strategies to provide intervention before a student falls behind in learning, then the number of students who would be slotted into special education can be reduced. Indeed, this has happened around the country and even in some Maine districts as reported by more than one director of special education.

All panels agreed with this rationale and supported the EB approach, although several individuals in one Panel suggested that the extra resources for tutors and pupil support should be one FTE per 50 ED students, i.e., twice as many additional resources.

One panel suggested that these resources be targeted funds to ensure that they were spent on extra help services, and not in other parts of SAU budgets.

There was more discussion and disagreement over the LEP/ELL approaches. First, the EB model assumes that most LEP/ELL students also would be ED students they would also trigger the additional resources provided for ED students. Virtually all panelists agreed that assumption was valid in Maine. That assumption in the EB model could explain one difference between the EB and EPS ratios for LEP/ELL students where the EPS approach appears to be much more generous.

Nevertheless, nearly every panel suggested that the EB approach for LEP students was too parsimonious. Thus, the Committee needs to determine the degree to which it wants to keep the current EPS ratios for LEP/ELL students, or some more modest ratio that might be between the EPS and EB models.

A couple of panels noted, moreover, that there is a special case for a number of LEP/ELL students who enter Maine and its education system from backgrounds with little or no formal education and need special attention at least for 1-3 years. The recommendation that emerged from the panels is to develop a set of standards for such "newcomers," not to include them in the count of residential students (for the staffing ratios) but provide funding for them of one FTE teacher for every 10 or so such students. The "newcomer" label would need to be carefully defined as most felt that such intensive support would be needed for more than one year but that such students should eventually transition to regular LEP support and regular classroom programs.



## Special Education

The approaches of the different models are shown below:

Element	EPS	EB
Special Education Overall	Extra weight of 1.27 for all identified special education students, plus adjustments for small districts	
Special Education, Mild and Moderate		1 FTE teacher and 0.5 special education aide per 150 all students
Special Education, Severe and Profound		100 % state funded
State aid deductions		Federal Title VIb

There were wide ranging discussions on special education. Most of the panelists noted that the EB approach for the mild and moderate would provide many fewer resources than districts currently provide, particularly special education instructional aides/ed technicians. There was little criticism of the state's current approach to funding special education, though everyone acknowledged that there continued to be small glitches that need some attention each year.

A general consensus was that the panels were skeptical of the census approach in the EB model.

The recommendation of one of the Portland panels offers the best consensus recommendation emerging from the meetings. They suggested:

Using the structure proposed by EB with the state fully funding the costs of students with severe and profound disabilities, and use a different formula for all other students with disabilities. The specific proposal was:

- a) The state would fund 100% of the needs of "high cost" students with disabilities; the "high cost" benchmark would need to be determined over time but it could begin around \$20,000.
- b) The state would provide an "extra weight" for all other special education costs; the weight would be lower than the current weight of 1.27 and would need to be determined over time. The weight would be applied to the identified number of students needing special education services, which would be all special education students minus those in the high cost category.

The important element of this recommendation is that it suggests changes can be made in how costs of special education services are supported by the state over time. Further, while not overly vocal, several individuals did subscribe to the concept in the EB approach that improved Tier 1 instruction coupled with more comprehensive Tier 2 interventions should lead to a reduction over time in the incidence of special education students.

## Gifted and Talented

The approaches of the different models are shown below:

Element	EPS	EB
Gifted and Talented	State approved costs	\$25 per all students

Currently the state provides support for approved costs for those SAUs that provide gifted and talented programs, though many SAUs do not provide such programs. The EB model provides \$25 per student for all students to allow SAUs to enroll students in the Renzulli Learning program, which is an online program for gifted and talented students.

The \$25 per pupil figure is based on the current costs of the Renzulli on-line program, which would be one option for serving gifted students. Though several panelists were aware of and supported the Renzulli program, many also said it worked best with additional teacher support – for which the \$25 per pupil would provide since not all students would participate in Renzulli and the additional resources could pay for limited teacher support if a district chose to do so. Others said that the state should take a more assertive approach to encouraging all SAUs to provide programming for gifted and talented students, an effort which would align with the EB funding system that provides funds for such services for all SAUs.

In comparison to current expenditures, panelists recommended that the amount per all students should be in the \$50-100 per pupil range, rather than \$25 per pupil.

## Career and Technical Education

The approaches of the different models are shown below:

Element	EPS	EB
Career and Technical Education	State approved costs	\$9,000 per CTE Teacher for High Tech Equipment

There was strong agreement that the EB approach would not work in Maine. First, Maine has both school-based and regional based career technical education centers. Second, Maine has class size maximums for career technical education that are significantly below the 25 class size in the EB model – a figure that is sufficient for the Project Lead The Way program that was used as the basis for the EB recommendation. Third, not all SAUs provide career technical programs; those that do not then pay tuition for students sent to other SAU programs. Several receiving SAUs said that the tuition amounts rarely covered the extra costs for the career tech programs. And finally, several panelists said that the current approach for reimbursing costs was solid and also included the uncovered costs of the tuition students from other districts.

The general conclusion was to leave the state's current approach to career technical education as is, and pay special attention to a forthcoming set of recommendations from a Task Force

addressing career technical education, its costs and how the state should participate in costs. Lawrence O. Picus and Associates support that recommendation.

### **Substitute Teachers**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Substitute Teachers	\$36 per pupil	5% of all teaching staff

There was a general perception that the EPS amounts were too small and overall support for the EB approach, which provides substitutes for about 10 days per teacher for absenteeism.

### **Pupil Support Staff**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Pupil Support Staff		
Guidance Counselors	FTE per 350 elementary and middle students FTE per 250 high school students	FTE per 450 elementary school students FTE per 250 middle and high school students
Nurses	health professional per 800 students	Nurse per 750 students

In terms of overall provision for guidance counselors, the two models are quite similar; the EPS provides more guidance counselor staff for elementary students and the EB provides more for middle school students and both provide the same for high school students.

Some panelists believed the one FTE per 350 elementary students was better.

Panelists were well aware of the one nurse for every 750 students standard from the National Association of School Nurses, but indicated their schools provide nursing staff at a higher ratio. The general consensus was to enhance nursing staff by strengthening the ratio to one nurse for every 450-500 students, a ratio that is above both the EPS and EB recommendations. Some panelists suggested nurses should be provided at the same ratio as guidance counselors.

In terms of the need for more nurse staff, the strong consensus across all panels is that Maine students are coming to school with many more physical and medical needs than in the past. There has been an increase in medically “fragile” students, who require health professionals to administer prescription drugs, monitor blood pressure, give insulin shots, address allergies, etc. Panelists felt that the closer the state could come to one nurse per school, better it would be for the health of school children.

Two panels raised the issue of homeless students. One educator indicated that 10 percent of the students in her district are homeless and consequently require more resources than regular students or even than ED students. A suggestion that arose from the panels was that the state consider a “homeless” program to help deal with the growing incidence of homeless students.

### **Instructional Aides/Education Technicians**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Instructional Aides/ Ed Technicians	1 per 100 pupils K-8 1 per 250 9-12 students	None

Most panelists at all locations said that the trend in both Maine and across the country was to reduce reliance on instructional aides (ed techs in Maine), and increase the use of licensed teachers for additional instructional support in the regular and special education program. (All panels did agree with the formula for preschool classes that includes an instructional aide in every Pre-K classroom.)

As a result, all panels concurred with the EB approach to not provide any additional instructional aides. Although that concurrence was generally tempered with the assumption that high levels of support for students needed to be maintained.

### **Supervisory or Duty Aides**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Supervisory/Duty Aides	No specific allocation	1 FTE per 225 elementary 1 FTE per 225 middle 1 FTE per 200 high school

Instead of instructional aides, the EB model provides for supervisory or duty aides to help getting elementary students on and off buses, monitor the lunchroom, monitor recess and guard doors or help with security in high schools.

The panels generally supported these recommendations.

It should be noted that the distinction between the two models is that EPS provides for Ed Techs and the EB model for supervisory/duty aides. If the salaries provided to these two different groups are similar, the two recommendations are closer than they appear at first glance.

## Librarians

The approaches of the different models are shown below:

Element	EPS	EB
Librarians	1 per 800 K-12 students	1 librarian position for every 450 elementary and middle students and every 600 high school students
Library technicians	1 Library technician for every 500 K-12 students	No library technicians

The EB approach emphasizes more librarians compared to the EPS approach that provides more librarian technicians than librarians. The panelists generally supported the EB recommendations with one librarian for every prototypical school, though the two approaches are more similar than different if total resources are assessed.

## Principals and Assistant Principals

The approaches of the different models are shown below:

Element	EPS	EB
Principals	1 administrative position per 305 K-8 students 1 administrative position per 315 9-12 students	1 per 450 elementary and middle students 1 per 600 high school students
Assistant Principals	No specific recommendation	1 per 600 high school students

There was strong support for more administrative staffing in schools. Generally, the panels proposed providing an Assistant Principal in each of the prototypical elementary, middle and high schools making the allocation as follows:

Elementary students: 1 Principal and 1 AP position for every 450 elementary students  
Middle school: 1 Principal and 1 AP position for every 450 middle school students  
High school: 1 Principal for every 600 high school students and 1 AP position, to include the athletic director, for every 300 high school students

One panel proposed a 0.5 AP position in the prototypical elementary school and an additional 1.0 AP position in the middle school and a reduction in the instructional coach allocation to 1 FTE per 300 (rather than 200) students.

Lawrence O. Picus and Associates does not concur with these recommendations.

Several panelists recommended that the state revisit the staffing ratio for school administrators once a new teacher evaluation system is implemented, particularly if it requires school administrators to conduct multiple teacher observations annually.

### **School Clerical Staff**

The approaches of the different models are below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
School Clerical	1 per 200 K-12 students	1 per 225 elementary and middle students 1 per 200 high school students

There was general support for either of these recommendations though some panelists thought the allocations should be enhanced so that there would be 3 secretaries in a 450 elementary or middle school and 4 in a 600 student high school.

Lawrence O. Picus and Associates believe either approach would work.

### **Computer Technologies/Instructional Materials/Student Activities**

The approaches of the different models are shown below:

<b>Element</b>	<b>EPS</b>	<b>EB</b>
Computer Technologies	\$95 per K-8 pupil \$288 per high school pupil	\$250 per all pupils
Instructional Materials	\$377 per K-8 pupil \$466 per 9-12 pupils	\$170 per K-8 pupil \$205 per high school pupil
Student Activities	\$33 per K-8 pupils \$111 per 9-12 pupil	\$250 per all pupils

These three categories generated considerable discussion at the PJP meetings. Some panelists thought the numbers should be merged into a single total to be used across all three areas at the discretion of the SAU or school. Others felt that separating the resources into three categories signaled what sufficient spending would be in each of the three.

The major differences between the two approaches are for instructional materials and supplies, where the EPS numbers are much higher than the EB numbers, and in student activities where the EB numbers include resources for sports and the EPS numbers do not.

Because of the large differences between the two models for instructional materials many panelists supported the EPS approach.

This is an area where the Committee will need to make some hard decisions and could be aided by SAUs providing the rationale for the much higher instructional materials allocation in the EPS.

### Central Office

The approaches of the different models are below:

Element	EPS	EB
Central Office	\$215 per pupil	\$488 per pupil to support a prototypical 3,900 Student SAU central office of 9 professional, 9 clerical/secretarial and 1 computer technician positions.

Everyone agreed that the EPS allocation was too small and had been unexpectedly almost halved several years ago. There was general support for the EB approach, which in the cost model computes to \$488 per pupil. Below we discuss how this number is adjusted for districts with fewer than 3,900 students.

In our work in other states we have used a prototypical district of 3,900 students as the starting point for estimating central office resources. The figure is based on a district with four elementary schools with 450 students, two middle schools of 450 students and two high schools with 600 students – or approximately 300 students per grade.

To reflect the needs of smaller districts, the 3,900-student figure can be cut in half to 1,950, which more closely reflects the size of SAUs in Maine. A prototypical district of this size would have two 450 student elementary schools, one 450 student middle school and one 600 student high school. The \$488 per pupil for a central office would allow for 4.5 professional FTE, 4.5 secretarial/clerical FTE and a 0.5 FTE computer technician.

If the enrollment figure of 1,950 students were halved again to represent a district with 975 students it would produce a central office with 2.25 professional and 2.25 clerical positions and a 0.25 computer technician. This 975 student district would have one 450 student elementary school with 75 students per grade, and one 6-12 secondary school with 75 students per grade. The per pupil central office figure would remain at \$488.

In short, though the EB model was premised on a 3,900 student SAU, it can adequately resource SAUs with fewer students and still provide sufficient central office staff.

Panelists supported the EB approach with one exception: there was strong support for a larger number of computer technicians. The recommendations ranged from an additional 3 to an additional 8 for the prototypical 3,900 student SAU. One panel argued that there needed to be at least one computer technician at each school in a district. The Committee will need to determine the degree to which it would agree with this augmentation for central office staffing above what the EB model provides, which is more than twice the EPS model.

## Maintenance and Operations

The approaches of the different models are shown below:

Element	EPS	EB
Maintenance and Operations	\$1,013 per K-8 student \$1,204 per 9-12 students  To support custodians and groundskeepers as well as major facility renovation	\$462 per pupil to support just custodians and groundskeepers

The EPS figure combines resources for custodians, minor repair, groundskeepers and related expenses as well as funds for major facility renovation, such as replacing a roof, replacing a boiler or HVAC system. The EB approach has specific formulas for each of custodians, minor facilities repair, and groundskeepers, which are detailed in Part I of our evaluation, but does not include funds for major facility renovation. Our cost model estimates this approach would cost \$462 per pupil.

Thus the two numbers cannot be compared and we could not find a clear distinction between the dollars for major facility repair and more general maintenance and operations in the EPS system, although the difference appears to be a function of the resources provided for major facility repair and renovation, something not included in the EB estimates.

For our cost modeling, Lawrence O. Picus and Associates used the Maine figures, but divided them into two parts:

- Typical maintenance and operations including minor repair, using the EB figure of \$462 per K-12 pupil
- Major facility repair and renovation, which became the difference between the EPS figure and the EB figure of \$462, or \$551 for K-8 students and \$742 for 9-12 students.

## Benefits

The approaches of the different models are shown below:

Element	EPS	EB
Benefits	Teachers, Guidance	Teachers, Guidance
	Library, Health 21.65 %	Library, Health 21.65 %
	Ed Technicians 36 %	Ed Technicians 36 %
	School Admin 14 %	School Admin 14 %
	Clerical 29%	Clerical 29%



At present for the cost modeling, the EB is using what we believe are the benefit rates used in calculating resources under the EPS approach. Nearly all panelists however, noted that these benefit figures are lower than what districts are actually paying at the present time. One panel estimated that the average health premium across all licensed staff (including single adults, two person families and more than two person families) was about \$16,000, with the SAUs covering roughly three-fourths or \$12,000 of that cost. On an average teacher salary of \$48,000, that equates to a medical benefit rate of 25%. When workers' compensation, Medicare and unemployment insurance are included, the total rises to approximately 30%. In addition, many districts provide support for dental services, life insurance and disability insurance. Though the current 21.65% includes the 2.65% added for pensions, the current benefit rates seem to be under what most districts provide.

Going forward, the Committee needs to determine if the state should or could support a higher benefits rate not only for teachers, but also for other categories of staff.

### **Regional Cost Adjustment**

The approaches of the different models are shown below:

Element	EPS	EB
Regional Cost Adjustment	The Maine Regional Cost Adjustment based on labor market regions and comparisons of actual teacher salaries adjusted for experience and education	A more economic approach using either the Hedonic or Comparable Wage Index approach

There was general support for a regional cost adjustment, but more support for an index that was no smaller than 1.0. Some border state districts said they compete with New Hampshire and Massachusetts for teachers and wish the Maine adjustment could include that as well.

Most panelists supported moving either to the Hedonic or CWI approach, one that uses a solid economic methodology and seeks to adjust for the prices of education staff and resources holding quality or effectiveness constant.

### **Teacher Salary Structures**

There were very mixed responses to any proposals to change how teachers in Maine are paid. Several panels said that if Maine decided to use some effectiveness metric in salary structures, it could not do so until a new teacher evaluation system, which now is on hold, was developed and was operating effectively and efficiently. And even more panelists stated that even at that time, they would not support changing the structure of teacher salary schedules.

### **Adjustments for Small Schools**

During the past year, Lawrence O. Picus and Associates has estimated educational costs using the ratios and schools in a prototypical district of 3,900 students as described above. We use this

approach to estimate a base dollar per pupil cost that can be used for all districts. Resources for ED, ELL and special education students are provided above that base figure in proportion to the enrollment of students with those characteristics. Although the 3,900 pupil district is large in the Maine context, if our approach was used for a prototypical district of 1,950 students, or even for a 975 student district, it would produce the same cost per pupil for general education students.

Finally, as discussed on pages 124 and 125 of Part I of the Evaluation, the EB model includes robust adjustments for districts and SAUs with fewer than 975 students, with specific models for a 390 student district, and for districts with 195 and 97.5 students. For districts with fewer than 97.5 students an alternative cost model was developed. The small district adjustments provided in the EB models we develop provide substantially more resources than the current Maine small district adjustments so should be viewed carefully by the Committee. While these small district models substantially increase per pupil resources for these small districts, there was criticism of these formulas by many school district and school representatives at the Professional Judgment Panels and a suggestion that the EB model may overcompensate for small district size. Some representatives from small districts and schools, though, believed the adjustments were not sufficient.

Under the EPS model, beginning in 2012-13, school districts with fewer than 1,200 students receive an increase of 10% in the staffing ratios for all positions other than teachers.

## **Final Comments**

As Maine has discovered, there are many ways to convert the staffing ratios described above into dollar resources for SAUs. Though Maine began with a prototypical school approach – which is useful for showing how various ratios produce different numbers of staff in a specific school – the State has shifted away from using a prototypical school approach and now applies most staffing ratios to student counts across each SAU.

The EB ratios can also be used in different ways to produce numbers for a school finance formula. For example, the Arkansas Legislature applied the staffing ratios in the EB model to a K-12 district of 500 students, and then converted the numbers into a foundation cost per pupil. On the other hand, in Wyoming, the Legislature has chosen to apply the ratios to every school in the state. As noted above, Lawrence O. Picus and associates applied the formulas to a prototypical district of 3900 students to determine the base per pupil allocation, before the small district adjustments kick in.



## CHAPTER 4: CASE STUDIES OF IMPROVING SCHOOLS

As part of its Independent Review of Maine's Essential Programs and Services Funding Act, Lawrence O. Picus and Associates identified a group of schools in Maine that demonstrated notable improvements in student achievement and conducted school site visits to learn how the schools achieved those improvements. We focused on schools enrolling a high proportion of students identified as economically disadvantaged and attempted to capture a cross-section of grade levels and geographic locations. Table 1 shows the list of schools that we visited, their enrollment and proportion of economically disadvantaged students at the time of our visits. One visit, to Windsor Elementary, occurred in the Spring of 2013 and the remainder occurred in the Fall of 2013.

**Table 1: Case Study Schools and Enrollment, 2013**

School	Students	% ED
Etna-Dixmont Elementary	256	68%
Central Aroostook Jr.- Sr. High	196	48%
Peninsula Elementary	212	63%
Phillips Elementary	155	70%
Windsor Elementary	320	61%

Altogether, the five schools selected for the case studies represent 1,139 students, approximately 62% of whom are economically disadvantaged. The selection of schools was based on improvements in student achievement, as measured by the New England Common Assessment Program (NECAP) from 2010 to 2012 in math, reading, and science. Table 2 highlights examples of improvements for each school. The individual case studies – which follow this summary of our findings – included in this report show all results for all grade levels.

**Table 2: Examples of Notable Improvements  
Percent Proficient/Advanced, 2010 to 2012**

School	Percentage Point Gain in Math	Percentage Point Gain in Reading
Etna-Dixmont Elementary	+6% in 6-8 for All students	+25% in 3-5 for ED students
Central Aroostook Jr.- Sr. High	+13% in 6-8 for ED students	+15% in 6-8 for All students
Peninsula Elementary	+15% in 6-8 for ED students	+19% in 6-8 for All students
Phillips Elementary	+20% in 3-5 for All students	+53% in 6-8 for ED students
Windsor Elementary	+22% in 3-5 for ED students	+22 in 3-5 for All students

## SCHOOL VISITS

During our school visits, we interviewed the school principal and people the principal identified as key staff in the school. The positions of key staff varied slightly by school, but mostly included classroom teachers, literacy coaches, assistant principals, and superintendents. In each case we asked questions about the school's goals, staffing, class schedule, curriculum and instructional programs, assessments, interventions for struggling students, professional development, and school culture.

## FINDINGS

Although the specific details in each school are slightly different, we found some common themes across all schools that are consistent with the elements of the Evidence-Based Model of funding schools for student performance.

### Clear Focus on Instruction in Core Subject Areas

In each school, there is a clear school focus on instruction in the core subject areas, particularly literacy. This is evidenced by the adoption of research-based curriculum and instructional materials, the emphasis of professional development for teachers on the use of research-based instructional practices, and the widespread use of extended instructional time in the core subjects for students struggling in those subjects. All schools leverage the Response to Intervention requirement in Maine in a way that allows for struggling students to receive more instruction in a

smaller group setting, either through one-on-one tutoring, small groups, before and after school, or summer school opportunities. Where class size tradeoffs need to be made, the core subject areas are prioritized to have the smaller class size.

### **Research-Based Curriculum Used School Wide**

Schools have chosen what they believe are research-based curriculum and instructional materials for the core subject areas and have aligned these curriculum programs across all grade levels. The curricular programs themselves vary across schools, but they were selected in large part for their research base and for their alignment to the upcoming Common Core. In one school where teachers do not all use the same curriculum, the research-based instructional model used throughout the school essentially weeds out instructional materials that are not consistent with the instructional model. The end result is the school wide use of research-based curriculum materials.

### **Instructional Coaches and Ongoing Professional Development**

We found widespread use of literacy coaches in this group of schools, though their reach often extends beyond literacy. The role of the literacy coach is to work with teachers directly to improve instruction. This work includes conducting professional development sessions on specific topics, analysis of student data with teachers, and classroom observations where the coach provides feedback to teachers directly. In this group of schools, the literacy coach is more than a coach and has become an instructional leader in the school.

The ongoing professional development of teachers is a top priority in improving schools. All schools have taken full advantage of professional development opportunities offered by their districts, grants, or university partnerships. Districts have also been supportive of ongoing PD by offering their own PD session, bringing in nationally recognized PD providers, and making funding available for teachers to attend workshops and providing tuition reimbursement for university courses.

### **Collaborative Time with Other Teachers**

In addition to district sponsored professional development, teachers in these schools have regularly scheduled time for collaborative work with each other, some in structured Professional Learning Communities. In most cases, the time for collaborative work is embedded in the class schedule, but when it is not, teachers create the time themselves. In one school, teachers have carved out common time during their lunch hour to collaborate with each other, review student data, and discuss interventions for struggling students. The weekly PLC, or collaborative work time, is used to review student data, plan interventions for students, or work on refining instruction.

We also found that most of the schools are participating in professional development with teachers in other districts—either through a university or regional partnership. The partnerships are focused on improved literacy and preparing teachers for the transition to the Common Core.

This type of cross-district alliance is particularly helpful to teachers in small schools and districts who may not have other teachers in the same grade and subject with whom to collaborate otherwise.

### **Multiple Assessments to Inform Instruction, Plan Interventions and Monitor Progress**

All schools use a combination of student assessments to provide the data they need to improve instruction, identify students struggling to learn, plan interventions for these students and to monitor student progress. The assessments vary by subject area and grade level, but the consistent theme is that the assessments are chosen to assess student proficiency or progress in the subject area and provide data in a timely fashion to inform decision-making at the school. Most of the schools used some version of the NWEA MAP assessments for benchmarks tests in September, January and May of the year. There is some acknowledgement by the schools that there are many assessments administered to students in their school, but they agree that the value of the information provided is more than worth the effort.

### **Additional Instructional Time for Struggling Students**

Maine requires that all schools have a Response to Intervention plan in place for students who are struggling to learn. What the improving schools have in common is that they have leveraged this requirement in a way that provides multiple opportunities for additional instructional time for struggling students, most often by including “RTI,” “Intervention,” or “Learning Lab” blocks in the school schedule.

In addition to the built-in interventions, Reading Recovery, Title 1 Tutors, or Literacy Coaches often provide one-to-one instruction to students, particularly those struggling to read in the early grades. Students may also be assigned to small groups to work with a teacher during the school day. In many cases, the school or individual teachers will provide before and after school help to students who need additional instruction. There is also some limited use of summer school for struggling students.

### **Small Class Sizes**

In all schools, the average class size is approximately 17, with a range as low as 12 or as high as 25. Teachers and school leaders see the small class sizes as critical to student learning and often prioritize keeping smaller classes in the core subjects and the early grades when tradeoffs are necessary.

### **Not Part of the EB Model, but Also Observed**

In addition to the elements listed above, which are consistent with the Evidence-Based Model, we also observed two other themes in our sample of improving schools. The first is the extension of the Reading Recovery program beyond the first grade. By design, the Reading Recovery program focuses on literacy in the early grades, but those schools with Reading Recovery

teachers are utilizing this resource for other grade levels as well. This allows more students in the school access to one-to-one tutoring and small group instruction where needed.

The second theme is the stability of the teaching staff in schools. Most schools have a high proportion of senior teachers, many with 20+ years of teaching experience, and have little teacher turnover. What this means for these schools is that teachers are able to build long-term, trusting relationships with their students, parents, and each other. The teachers we interviewed see their relationships with students as being critical to their success in improving student achievement. Their knowledge of their students allows teachers to make better decisions about instructional strategies or interventions than they would make if they did not know their students as well.

Another important outcome of teacher stability is that the investments made in professional development tend to stay in the schools. Unlike PD investments made in schools with high teacher turnover, the district or school can invest in PD and expect to see the results of their investment in future years.

## CONCLUSION

The case studies of these five improving schools show school improvement strategies that vary in the details, but that are all closely aligned to the elements of the Evidence-Based Model. The focus on instruction in the core subject areas; the selection of research-based curriculum and instructional materials; the focus on professional development and collaborative work among teachers; the use of instructional coaches; the use of varied assessment to inform instruction, plan interventions and monitor progress; and the use of multiple interventions for struggling students are all consistent with the research literature on school improvement. That is the good news.

The not-so-good news is that in this sample of schools, many of these elements are funded by sources other than the general allocation and are therefore vulnerable (or are perceived to be vulnerable) to budget fluctuations. The literacy coaches and Reading Recovery teachers that play such an important role in the improvement of these schools are paid through Title 1 or grant funding. One school has lost its literacy coach since the time of the observed improvements. Title 1 also funds the tutors that, along with the Reading Recovery teacher, provide much of the one-to-one tutoring and small group instruction. Many of the professional development opportunities that these schools have found so helpful have been provided by grants to universities or to the state, such as Reading First or Teacher Incentive Fund.

Professional development, in particular, is seen as vulnerable to budget cuts. In one school, the district temporarily “froze” its support for professional development because of budget cuts. Another school saw the loss of collaborative time for teachers when budget cuts reduced the number of specialist teachers in the school. Without specialist teachers, there is not enough staff to provide common time in the schedule for teachers.

Overall, our findings show that the common instructional and resource allocation elements identified across these improving schools are similar to the elements identified by the Maine FINAL REPORT Part 2: December 1, 2013 (Revised 12-24-2013)



Education Policy Research Institute (MEPRI) in a similar study of improving schools and using a larger sample. The results of the MEPRI study were presented to the Joint Committee in August. The similarities in the findings from these two research studies identifying the key elements of improving schools suggest that the key elements of the Evidence-Based funding model provide adequate levels of resources (as well as a theory of action) to enable Maine's schools to reach higher levels of student performance. While the details of each element of the Evidence Based model can be modified, the findings from these case studies suggest that the structural features of the EB model are aligned to the key elements in Maine's improving schools and are thus a good foundation for the design of the State's funding formula.

## **CENTRAL AROOSTOOK JR.-SR. HIGH SCHOOL CASE STUDY**

By Anabel Aportela, Associate, Lawrence O. Picus & Associates

Central Aroostook Jr.-Sr. High School is located in the town of Mars Hill, approximately 15 miles south of Presque Isle, near the Canadian border. It is part of Maine Administrative District Number 42, which has one elementary school in addition to the Jr.-Sr. high school.

The community is primarily agricultural. Some people travel to Presque Isle for work, but a significant portion of the population is unemployed. At one point, the community had a lot of small farms, but many of these have been bought and consolidated into fewer, larger farms, employing fewer people. Despite the economic conditions, most of the families in town are stable, remaining a part of the community. Those that do move—school staff estimate approximately 10% of students and their families—move in and out of Mars Hill and neighboring towns, often returning to the school.

After peak enrollments in the 90s, the district's enrollment has been just under 500 students for the last ten years. Central Aroostook Jr-HS's enrollment is just under 200, at 196 in grades 7-12. Forty-eight percent of students are eligible for free- or reduced-priced lunch, though this number likely underestimates the true poverty rate; staff report difficulty in convincing parents to complete and return the required forms. Seventeen percent of students are identified as requiring special education services and the school has not had an English Language Learner student in about ten years.

Student performance has improved significantly in several subject areas and grade levels in recent years. Table 1 provides performance data on the New England Common Assessment Program (NECAP) and the Maine High School Assessment (MHSA) from 2010 to 2012 in math, reading, science and writing. Percent Proficient/Advanced and percent Advanced exists for each subject area at different grade spans. Notable data in Table 1 includes:

- Performance in Reading 6-8 has increased from 60% to 75% Proficient/Advanced.
- Performance in Reading Grade 11 has more than doubled from 15% to 42% Proficient/Advanced.
- Performance in Math Grade 11 has doubled from 15% to 30% Proficient/Advanced.
- Performance in Writing Grade 11 has increased from 19% to 33% Proficient/Advanced.

**Table 1**  
**Central Aroostook Performance (2010-2012 NECAP and MHSA)**  
**All Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP/MHSA</b>	<b>2011 NECAP/MHSA</b>	<b>2012 NECAP/MHSA</b>
<b>Math</b>			
<b>Grade 6-8</b>			
Proficient/Advanced	38%	36%	45%
Advanced	3%	4%	5%
<b>Grade 11</b>			
Proficient/Advanced	15%	22%	30%
Advanced	0%	0%	0%
<b>Reading</b>			
<b>Grade 6-8</b>			
Proficient/Advanced	60%	44%	75%
Advanced	10%	6%	8%
<b>Grade 11</b>			
Proficient/Advanced	15%	28%	42%
Advanced	0%	0%	6%
<b>Science</b>			
<b>Grade 8</b>			
Proficient/Advanced	65%	39%	57%
Advanced	4%	5%	23%
<b>Writing</b>			
<b>Grade 11</b>			
Proficient/Advanced	19%	36%	33%
Advanced	0%	0%	3%

Table 2 exhibits the same information for students identified as economically disadvantaged. These performance indicators exhibit significant gains in certain subcategories of the NECAP and MHSA. Table 2 gives details on the movement of performance scores for ED students from 2010 to 2012 and shows the following:

- Performance for ED students in Math Grades 6-8 has increased from 30% to 43% Proficient/Advanced.
- Performance for ED students in Reading Grades 6-8 has increased from 57% to 75% Proficient/Advanced.
- Performance for ED students in Reading Grade 11 has increased from 0% to 39% Proficient/Advanced.

The initial scores of ED students in Grade 11 were particularly low, starting at 0% Proficient/Advanced in both Reading and Writing and 8% in Science. Each of these has improved significantly by 2012.

**Table 2**  
**Central Aroostook Performance (2010-2012 NECAP and MHSA)**  
**Economically Disadvantaged Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP/MHSA</b>	<b>2011 NECAP/MHSA</b>	<b>2012 NECAP/MHSA</b>
<b>Math</b>			
<b>Grade 6-8</b>			
Proficient/Advanced	30%	29%	43%
Advanced	3%	3%	4%
<b>Grade 11</b>			
Proficient/Advanced	17%	15%	28%
Advanced	0%	0%	0%
<b>Reading</b>			
<b>Grade 6-8</b>			
Proficient/Advanced	57%	41%	75%
Advanced	7%	3%	7%
<b>Grade 11</b>			
Proficient/Advanced	0%	30%	39%
Advanced	0%	0%	6%
<b>Science</b>			
<b>Grade 8</b>			
Proficient/Advanced	58%	40%	44%
Advanced	8%	8%	17%
<b>Writing</b>			
<b>Grade 11</b>			
Proficient/Advanced	0%	30%	22%
Advanced	0%	0%	6%

This case study provides information regarding how Central Aroostook Jr.-Sr. High School achieved such increases in academic performance. The case is based on written documents as well as fall 2013 interviews with the principal and key staff. The case is part of a study of the Maine school funding system being conducted for the Maine Legislature by Lawrence O. Picus & Associates. The case has the following eight sections: School Staff, Goals, School Schedule, Curriculum and Instruction Program, Assessments, Interventions, Professional Development, School Culture, and a Summary.

## School Staff

Central Aroostook employs 21.5 full time certified staff, 5.3 paraprofessionals (2 of whom are special education technicians), and 5.0 classified staff. Staff FTE are listed below:

- 1.0 Principal
- 0.3 Athletic Director (contracted)
- 12.0 Core Classroom Teachers, including foreign language (for an overall class size average of 16)
- 3.7 Specialist Teachers
  - 1.7 Music
  - 1.0 Art
  - 1.0 Physical Education/Health
- 1.0 Career and Technical Education
- 0.2 Math Coach (contracted)
- 1.0 Pupil Support
  - 1.0 Guidance Counselor
- 2.0 Special Education Certified Staff
  - 2.0 Special Education Teacher (self-contained)
- 2.0 Special Education Technicians
- 2.0 Education Technician
  - 1.0 Education Technician for CTE
  - 1.0 Education Technician for Apex Learning
- 1.0 Library Technician
- 0.3 Information Technology
- 1.5 Secretary
- 2.0 Cafeteria staff
- 1.5 Custodians

The school makes a concerted effort to have no more than 15 students in a classroom, though there are some classes that are larger, like PE. The school makes use of contracted services for a couple of positions that it cannot support full time. Both the Athletic Director and the Math Coach are contracted for a set number of hours during the course of the school year. The school also takes advantage of staff member's strengths, where possible. One position—the band teacher—is also the IT support for the school.

The school has 2 instructional aides, but they are specific to the vocational classroom and to APEX, an online curriculum for credit recovery.

The school lost a full time position in 2013-14. The teacher taught economics, accounting and a class on the use of the Microsoft Office suite. Enrollment in these classes was very small and the school realized that students were arriving at school already knowledgeable about computers and Microsoft Office so the position was eliminated.

## **School Goals**

The school is currently working on a draft of school-specific goals. In the meantime, the school's goals are the same as those of the district. The district goals are:

1. Continue building foundational knowledge for transition to proficiency-based, customized-learning system.
2. Continue refining consistent grading framework and practices.

The district also has a comprehensive school improvement plan that includes the following reform strategies:

1. Use data to identify and implement programs that are aligned with the state learning results and common core standards.
2. Promote continuous use of student data to inform and differentiate instruction in order to meet the academic needs of individual students.
3. Implement a school-wide response to intervention model.
4. Provide professional development opportunities to support/train staff.
5. Use technology-based interventions as part of the instructional program.
6. Facilitate a smooth transition from middle to high school.

## **School Schedule**

All students start the day at 7:58 a.m. and end at 2:32 pm, with 30 minutes for lunch in the middle of the day.

Grades 7 and 8 have a seven-period day, though the number of minutes varies by period. For example, periods 1, 2, 3, and 5 are 60 minutes, and periods 6 and 7 are 47 and 42 minutes, respectively. Period 4 is a 30-minute Intervention/Homeroom, where students receive additional instruction based on data from assessments. English, Math, Social Studies, and Science all take place during the 60-minute periods, with electives during the shorter 6<sup>th</sup> and 7<sup>th</sup> periods. The school allocates more instructional time to the foundation or core subjects. The schedule also insures that there is time in every day for struggling students receive extra help, and makes provision of this extra help a priority.

The high school grades (9-12) have an eight-period day, with all periods at 42-44 minutes each. There is no specific period set aside for intervention for all students in the high school grades, but the school has set aside time for struggling high school students to receive extra help during three periods for RTI Math and RTI Language in the class schedule. There are also two Enrichment classes for those students not needing intervention.

The placement of RTI/Intervention blocks in the class schedule for both the junior and high school grades is a clear signal that the school prioritizes additional instructional time in the core subjects for those students struggling to achieve proficiency.

## Curriculum and Instructional Program

There is some consistency in the curriculum and instructional materials used in English and math, but for all other subject areas teachers are free to choose what they use in the classroom. The school uses the *Glencoe* series of textbooks and materials for math in all grades 7-12. For English, teachers use a combination of textbooks and literature series published by Houghton Mifflin. In science, the one subject where performance has declined from 2010 to 2012, the curriculum varies as individual teachers use what they determine is best for the specific field of science. All other area teachers choose curriculum materials based on what they feel will best serve the needs of students.

The school does not have a self-contained special education classroom. Students are mainstreamed as much as possible and the special education resource room is used as a resource—with students going in and out of the resource room for additional support when needed. In some cases, depending on the subject, some students receive their primary instruction in the resource room.

## Assessments

Table 3 shows the core elements of the reading and math programs at Central Aroostook, including assessments used throughout the year. The primary summative assessments used are the state assessments, NECAP and MHSA. In addition to the state assessment, Central Aroostook uses the Northwest Evaluation Association's *Measure of Academic Progress (MAP)*, a set of online computer adaptive tests, as benchmark assessments to monitor progress over the course of the year.

**Table 3**  
**Core Elements of the Reading and Math Programs, Interventions, and Assessments**

	<b>Reading Program</b>	<b>Math Program</b>
<b>Core Curriculum/Program</b>	Houghton Mifflin	Glencoe
<b>Core Program Augmentation</b>	RTI/Enrichment	RTI/Enrichment
	Apex Learning	Apex Learning
<b>Assessments</b>	NECAP	NECAP
	NWEA's MAP	NWEA's MAP
	SAT for all juniors	SAT for all juniors
	PSAT for all sophomores	PSAT for all sophomores
	Accuplacer for all juniors at the end of the junior year for remediation for senior year	Accuplacer for all juniors at the end of the junior year for remediation for senior year

Central Aroostook also administers NWEA's *MAP* in science. As part of the Maine High School Assessment system, all juniors take the SAT. All sophomores at the school take the PSAT, although it is not part of the MHSA.

The school uses *Accuplacer*, a computer-adaptive set of assessments in reading, writing, math and computer skills, typically used to properly place students in college courses and to diagnose for interventions. It is administered to all juniors at the end of the school year in order to identify any additional interventions needed in the senior year. Seniors working on the interventions are retested every quarter, using *Accuplacer*, to monitor progress. This test can then be used for local college entrance.

Though not officially an "assessment," the school also requires that all students in English Language Arts, grades 9-12, complete a portfolio with examples of their work compiled throughout the school year. The portfolio is a requirement for course completion.

## **Interventions**

One of the biggest changes Central Aroostook has made in recent years is to look at student data and let the data inform instruction and intervention strategies. When they relied only on state assessments, results were available too late in the year to be useful for intervention. Now, they administer the *MAP* in the fall and spring of each year and say that this has made a huge difference. Along with *MAP*, they've instituted the RTI block in grades 7 and 8, as well as provide RTI classes for high school students needing extra instruction in English and math. Students who are doing well can take an enrichment class during these intervention time blocks.

The school's faculty now also has the ability to look at longitudinal data to see performance from year to year for individual students. Currently, they are focused on addressing gaps they have identified in the transition from grade 6 to 7.

Study halls are used at all grades levels to provide, for students who need it, extra time to work on challenging assignments or catch up. They want all students to be caught up in class and not missing homework.

In addition to providing a rich array of extra help for students struggling in their classes, the school uses Apex Learning, a self-paced online curriculum for students who are behind on credits or who have failed a course. Students can retake the course and catch up to their peers. The district has been using Apex Learning for four years and "it's paid for itself." It offers a wide array of courses and in addition to credit recovery it has been used to provide foreign language instruction and accelerated instruction for some of the elementary gifted students. All teachers have access to Apex Learning and some use components of it (i.e., chapters or units) in their classrooms.

Some students, typically those failing a class, are required to attend an academic after school program. Three to four teachers work with small groups one hour every day Monday through Thursday. Students who are struggling but not failing have the option to attend and those that do



by choice do not have to attend all four days. Teachers are paid a stipend of \$750 for the school year. Teachers admit they do it for the students, as the stipend is minimal. Some individual teachers offer their own before and after school help, but that time varies.

Summer school is required of any student that has failed two or more classes and any other student that has failed a class and where both the teacher and parents decide summer school is needed. This year, summer school was comprised of a half-day, 4 days a week for 3 weeks. There were two teachers and 5 students.

Another option for students behind on credits is for them to take summer classes in neighboring districts. Transportation and class fees are the parents' responsibility. Jr. high students do not pay for summer school, but high schools students do have to pay. The cost is about \$120 per class.

In short, Central Aroostook Jr.-Sr. High School provides a multiplicity of extra help strategies for students struggling to learn to proficiency, including a combination of interventions during the regular school day, academic help after school and summer school.

## Professional Development

Table 4 shows the time allocated to different professional development activities in Central Aroostook.

**Table 4**  
**Professional Development for Teachers at Central Aroostook**

Type	Time Allocated
<b>Individual planning</b>	1 43-minute period per day
<b>Collaborative Work with other teachers</b>	5 workshop days a year
<b>Pupil-free days for PD</b>	6-7 early release days during the year, 2 hours

Junior high teachers teach six out of the seven periods and high school teachers teach seven out of eight periods. Each teacher is scheduled to have a period of planning and prep each day and this time is closely adhered to, except in the rare instances where a substitute teacher is not available for a class. The five workshop days during the year are used for collaborative work with other teachers in the school or the region. The workshops can be either subject and/or grade-span specific.

The school has a contracted part-time math coach. The coach is a former district employee and a highly respected and successful math teacher. She offers guidance to math teachers in areas such as pacing, instruction, strategies, and data analysis. She also does some classroom observations and is a resource for teachers when they have questions or need guidance.

Central Aroostook is a member of the recently formed Northern Maine Educational Collaborative. Modeled after the Western Maine Educational Collaborative, it was established to help rural schools transition to proficiency based education. All schools in Aroostook County are participating in the ongoing professional development offerings provided. PD is centered on analyzing data, aligning curriculum, and identifying gaps in learning. The transition to the Common Core has also been a focus. Teachers have an opportunity to work with other teachers across the county as well as within the district, including opportunities to visit each other's classrooms for observation. Curriculum directors, principals and superintendents also meet with each other as part of the Collaborative.

The district has allocated money for substitutes so that teachers can participate. This is not new, as the district has traditionally supported teachers who want to participate in professional development or enroll in graduate courses. For teachers who have been with the district for at least three years and who include getting a Masters degree in their action plans, the district will reimburse the cost for courses. Money for PD was temporarily frozen during the last school year due to dissolution of the Alternative Organization Structure of which the district was a part, but the PD money has been reinstated this year.

Although the school does not formally have Professional Learning Communities in place, the junior high teachers have created their own. The school hired three new junior high teachers three years ago and they wanted to create an instructional team so they brought in Dr. Jody Capelluti, a professor at the University of Southern Maine, as a consultant to help them do this. Working with the principal, the team was able to carve out a common planning time once a week and they regularly meet after school on their own. Now including a veteran teacher, the middle school team has become a close-knit group that has created a middle school model within the larger school. This has had a positive effect on students, providing a smoother transition to high school. The principal hopes to be able to expand this team model to the high school in the future.

## **School Culture**

School culture has been a challenge at Central Aroostook, but that is rapidly changing. Recently, the school board took steps to address concerns over morale and interviewed every staff member in the building—from leadership to teachers to custodians. Several themes emerged as common among staff members. The superintendent met with the building administrator, guidance counselor, and curriculum coordinator to discuss the common themes and articulate a plan of attack. The former principal resigned at the end of year and the new principal has made school culture one of her top priorities. The other is spending time in the classroom. She spends about two hours a day doing classroom observations, unless she has to deal with something unexpected. This has had a positive impact on teachers and students, as they now feel supported.

That improvements in achievement still occurred during this time speaks to the leadership of the former curriculum director and the school's guidance counselor. They provided the instructional leadership that was needed in the school.

Teaching staff has turned over in the last three years, mainly due to retirement. Aside from five staff members, everyone is relatively new. This has re-energized the teaching staff—now described as “upbeat,” “focused on instructional practice,” and “they want kids to succeed.”

## **Summary**

Central Aroostook has a promising set of practices in place that are yielding improvements in student achievement and will continue to do so if these remain in place and expand. Teachers are making use of multiple assessment data to identify students for interventions. The schedule has a built-in time for these interventions as well additional instructional time during the after school and summer school opportunities provided. This mixture of extra help strategies mirrors provisions in the Evidence-Based model.

The use of data, in particular, has been a significant change in the school’s approach to instructional improvement. The low achievement of ED students, 0% Proficient in 2010, was due to a variety of factors, and successful interventions for these students were not identified and sustained until the school began to focus on multiple sources of data.

The school uses an online program for both high school credit recovery as well as additional classes in subjects where student enrollment is small, thus maximizing the impact of its computer and related technologies. The use of Apex Learning for students who are behind on credits has had the unexpected benefit of providing additional course offerings for all students at Central Aroostook and accelerated instruction for elementary students in the district.

Ingeniously, the school and its neighbors have found a way to engage teachers in collaborate work outside of the school setting, as there are often insufficient teachers in small schools for the in depth collaboration that is needed to improve the ongoing instructional program. These cross-district collaborative activities also focus on using student data to enhance instructional practice, a core goal of the school itself. We believe that a strategy for networking teachers in rural schools should not be overlooked. The fact that this cross-district collaboration is now focusing on the Common Core curriculum should provide optimism that the school can meet the rigorous expectations of this new curriculum.

We conclude that the school has been implementing an improvement strategy that closely matches the strategies of the Evidence-Based model. At its core, the EB model, and this school, has teachers working in collaborative groups using student data, including data acquired more often than the state summative tests, to continuously improve the core instructional program and to identify and monitor the progress of students who need extra help. The major difference between the improvement strategy of this school and the EB model is that the school has class sizes around 15, much smaller than the EB model provides. Otherwise all other elements are strongly aligned.

With the new Northern Maine Educational Collaborative and the success of the middle school team, the school is focusing on professional development for teachers and is supported by the

district in these efforts. With a school principal that is focused on instruction and building a strong school culture, the future is looking even brighter for students at Central Aroostook Jr.-Sr. High School.



## ETNA-DIXMONT ELEMENTARY SCHOOL CASE STUDY

By Anabel Aportela, Associate, Lawrence O. Picus & Associates

Approximately 20 miles west of Bangor on Interstate 95, sit the communities of Etna and Dixmont, Maine. The center of Etna is to the north of the Interstate and Dixmont to the South. If you stand at the front double doors of Etna-Dixmont Elementary School, you can be in two places at once, literally—one foot in the town of Etna and the other in the town of Dixmont. The school was built right on the boundary.

The two communities are supportive of their schools, but economic conditions have had an impact. The mills, tannery, and a large MBNA calling center in Belfast have left the area and, with them, many of the jobs. There are a few remaining small businesses and those with reliable transportation work in Newport and Bangor, but unemployment in the area is high, as is the overall poverty rate in both communities.

Etna-Dixmont has been a part of Regional School Unit #19 for five years, serving approximately 256 students in grades PK-8 in 2013-2014. Enrollment has remained steady over the last 5-10 years. Most students come from the communities of Etna and Dixmont, with a few from neighboring Plymouth. Sixty-eight percent of students qualify for free or reduced priced lunch, a number that has been on the rise in recent years. Approximately 17% are identified as needing special education services (the school houses a district life skills class that instructs students from throughout the school district), with only one or two ESL students, depending on the school year.

Student performance has improved dramatically in several subject areas and grade levels in recent years. Table 1 provides performance data on the New England Common Assessment Program (NECAP) from 2010 to 2012 in math, reading, and science. Percent Proficient/Advanced and percent Advanced exists for each subject area at different grade spans. Notable data in Table 1 includes:

- Performance in Reading Grades 3-5 has increased from 65% to 83% Proficient/Advanced. The Advanced category more than doubled from 11% to 28%.
- Performance in Reading Grades 6-8 has increased from 78% to 85% Proficient/Advanced. The Advanced category more than doubled from 19% to 43%.
- Performance in Science Grade 5 has increased from 64% to 82% Proficient/Advanced. The Advanced category more than doubled from 9% to 19%.
- Performance in Science Grade 8 has increased from 46% to 68% Proficient/Advanced. The Advanced category has increased by more than a factor of five from 3% to 16%.

**Table 1**  
**Etna-Dixmont Performance (2010-2012 NECAP)**  
**All Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	63%	64%	66%
Advanced	11%	15%	19%
<b>Grade 6-8</b>			
Proficient/Advanced	63%	72%	69%
Advanced	10%	24%	33%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	65%	73%	83%
Advanced	11%	11%	28%
<b>Grade 6-8</b>			
Proficient/Advanced	78%	76%	85%
Advanced	19%	25%	43%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	64%	61%	82%
Advanced	9%	4%	19%
<b>Grade 8</b>			
Proficient/Advanced	46%	62%	68%
Advanced	3%	19%	16%

Table 2 exhibits the same information for students identified as economically disadvantaged. These performance indicators exhibit exceptional gains in certain subcategories of the NECAP assessment. Table 2 gives details on the movement of performance scores for ED students from 2010 to 2012 and shows the following:

- Performance for ED students in Reading Grades 3-5 has increased from 55% to 80% Proficient/Advanced. The Advanced category tripled from 9% to 28%.
- Performance for ED students in Reading Grades 6-8 has increased from 79% to 87% Proficient/Advanced. The Advanced category almost tripled from 11% to 32%.
- Performance for ED students in Science Grade 5 has increased from 58% to 77% Proficient/Advanced.
- Performance for ED students in Science Grade 8 has increased from 42% to 64% Proficient/Advanced.

**Table 2**  
**Etna-Dixmont Performance (2010-2012 NECAP)**  
**Economically Disadvantaged Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	49%	51%	55%
Advanced	9%	8%	18%
<b>Grade 6-8</b>			
Proficient/Advanced	56%	63%	59%
Advanced	2%	12%	26%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	55%	67%	80%
Advanced	9%	10%	28%
<b>Grade 6-8</b>			
Proficient/Advanced	79%	69%	87%
Advanced	11%	21%	32%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	58%	64%	77%
Advanced	8%	0%	12%
<b>Grade 8</b>			
Proficient/Advanced	42%	44%	64%
Advanced	0%	17%	9%

This case study provides information regarding how Etna-Dixmont achieved such increases in academic performance. The case is based on written documents as well as fall 2013 interviews with the principal and key staff. The case is part of a study of the Maine school funding system being conducted for the Maine Legislature by Lawrence O. Picus & Associates. The case has the following eight sections: School Staff, Goals, School Schedule, Curriculum and Instructional Program, Assessments, Interventions, Professional Development, and School Culture.

### **School Staff**

Etna-Dixmont employs 25.4 full time certified staff, 11.0 paraprofessionals (8 of whom are special education technicians), and 5.0 classified staff. Staff FTE are listed below:



- 1.0 Principal
- 15.0 Core Classroom Teachers (for an overall class size average of 17)
- 3.0 Specialist Teachers
  - 1.0 Music
  - 1.0 French
  - 1.0 Physical Education
- 1.0 Literacy Coach
- 1.0 Extra Help Staff
  - 1.0 Reading Recovery Teacher
- 2.4 Pupil Support
  - 1.0 Social Worker
  - 1.0 Speech Teacher
  - 0.4 Nurse
- 2.0 Special Education Certified Staff
  - 1.0 Self-Contained Life Skills Teacher
  - 1.0 Special Education Teacher (pull-out)
- 8.0 Special Education Technicians
  - 4.0 Special Education Technicians
  - 4.0 Special Education Technicians (self-contained)
- 2.0 Title 1 Instructional Technicians
- 1.0 Library Technician
- 1.0 Secretary
- 2.0 Cafeteria staff
- 2.0 Custodians

In addition to the school principal, one teacher takes on the additional duties (with a stipend) of a part time assistant principal and athletic director, as needed. The amount of time spent on these additional duties varies throughout the school year.

The district has one ESL teacher that is available on an “as-needed” basis to Etna-Dixmont, depending on the number of ESL students and student need.

Although enrollments have remained stable, the school has lost 2.0 Teacher FTEs in the last two years due to budget cuts. This has increased class sizes—typically 12-17 per teacher—in some grades. However, two classrooms are necessarily small (about 12 students) because the classroom itself is too small to accommodate a larger number of students.

### **School Goals**

Until recently, the school goals for Etna-Dixmont have been the same as the district-wide goals for improvement. With the introduction of the newly state-mandated teacher evaluation system, the principal and teachers have begun work on a set of draft goals for themselves, with the school goals ultimately becoming the principal’s evaluation goals. Their aim is to create a set of goals

that use a common language with, and are aligned with, the Common Core and the teacher evaluation system.

## **School Schedule**

The school day at Etna-Dixmont begins at 7:50 a.m., ends at 2:50 p.m., and includes a 10-minute homeroom/attendance check first thing in the morning and a 25-minute lunch and 20-minute recess scheduled in the middle of the day. The elementary grades K-4 are in self-contained classrooms, while the middle grades 5-8 see different teachers for the different content areas throughout the day.

The elementary grades all have 2-hour literacy blocks each day and math blocks that are 60 minutes in Kindergarten, average 75 minutes in all grades 1-4 and 90 minutes in grade 5. These blocks are sometimes configured differently, depending on the day of the week. For example, the second grade has three 80-minute, one 75-minute, and one 60-minute math block during the week.

The middle grades have seven 55-minute periods during the day. Courses in the middle grades include reading, writing, math, science, social studies, with French, music, health, and PE as specials. With reading and writing as two separate classes, students have nearly two hours of English Language Arts during the day. However, students do not take all special classes every day, and there is some overlap in the subjects teachers teach. For example, the science teacher teaches a couple of sections of health and library study during the week.

Teachers have one duty-free recess period (25 minutes) per week and one period 4 times a week for planning through specialist teachers taking their class. In addition, all teachers have 50 minutes a week to meet with each other in their Professional Learning Communities.

## **Curriculum and Instructional Program**

In 2000 Etna-Dixmont became part of the Maine Partnerships in Comprehensive Literacy at the University of Maine College of Education and Human Development and over the years has leveraged the training and professional development provided by the partnership into a school-wide instructional model that extends beyond literacy.

From their website: “Maine Partnerships in Comprehensive Literacy (MPCL) is a professional development model focusing on literacy education in grades K – 6. Each affiliated school has a full-time literacy coach who supports teachers as they continue to refine their literacy teaching. The support takes the form of on-site graduate-level courses, continued professional development sessions, one-on-one coaching with teachers, and demonstration lessons.”

The MPCL uses an Integrated Instructional Framework, which Etna-Dixmont teachers refer to as the ‘workshop model’, in which teachers begin a lesson with a stated goal for the lesson and move on to a mini-lesson, independent student work, and a wrap-up lesson. Teachers work with the literacy coach throughout the year to refine their teaching practices, participate in courses and

professional development taught by the literacy coach or university faculty, and collect and analyze data to inform their classroom teaching.

The workshop model is applied to all subject areas and can be used in conjunction with any curriculum materials teachers choose. Much emphasis has been placed on the use of a common language throughout the school that helps teachers collaborate with each other. This common language also creates a consistent vocabulary and set of expectations for students as they move across grades and subjects. All teachers in the school have been trained in the workshop model and new teachers are required to participate in the training. The expectation at Etna-Dixmont is that all teachers use the workshop model.

For the most part, teachers choose their own curriculum materials and they use a variety of resources. Outside of math, there is no set of district prescribed textbooks, though teachers tend to make use of existing materials and books previously purchased by the district or the school, so there appears to be quite a bit of consistency. The school currently uses Pearson's *Investigations* (elementary grades) and *Connected Math* (grades 6-8) to teach mathematics, along with supplementary materials. In reading, teachers are using the workshop model in conjunction with the *Fountas and Pinnell* leveled reading books and materials gathered through their professional development. Teachers also use the *Six plus One Traits* of Writing for writing instruction.

One teacher mentioned trying a different writing program for a brief period of time, but realized that the approach was too teacher-led and the instructional materials did not have enough examples of good student writing. Because the writing program was not as well aligned with the workshop model, she returned to the *Six plus One* method and accompanying materials. This example illustrates clearly that although there is a consistent expectation that all teachers use the workshop model, there remains some latitude in the instructional materials to be used.

When asked about the transition to the Common Core, the principal and teachers expressed confidence that the workshop model lends itself well to the more rigorous expectations of the Common Core. Teachers are re-aligning, with each other and other district teachers, existing materials to the new standards. Although they stated a need to “reshuffle” or “reorganize” the grade level in which some materials and lessons are used, they did not mention the need to purchase new curriculum materials.

However, there is some trepidation that the new assessments (Maine is set to adopt the Smarter Balanced Assessments) will prevent students from demonstrating what they know. The school participated in the pilot administration of the new tests and experienced some problems. The format of the assessment and the reliance on technology—technology the school does not have—are seen as potential challenges to the school demonstrating continued improvement.

## **Assessments**

Table 3 shows the core elements of the reading and math programs at Etna-Dixmont, including assessments used throughout the year. The primary summative assessment used is the state assessment, NECAP, administered in the fall of the school year to students in grades 3-8. In

addition to the state assessment, Etna-Dixmont uses the Northwest Evaluation Association's *Measure of Academic Progress (MAP)*, a set of online computer adaptive tests, as benchmark assessments to monitor progress over the course of the year. Pearson's *aimsweb*, a web-based universal screening tool, is used to identify students for interventions and for progress monitoring.

**Table 3**  
**Core Elements of the Reading and Math Programs, Interventions, and Assessments**

	Reading Program	Math Program
<b>Core Curriculum/Program</b>	Fountas and Pinnell	Investigations (grade K-5)
	Six plus One Traits of Writing	Connected Math (grad 6-8)
<b>Core Program Augmentation</b>	Reading Recovery	
	Read 180 (new)	SuccessMaker
	Before and after school extra help	Before and after school extra help
		MobyMax (new)
<b>Assessments</b>	Aimsweb (K-1)	Aimsweb (K-1)
	NWEA's MAP (2-8)	NWEA's MAP (2-8)
	Fountas and Pinnell (K-8)	
		Investigations Unit Assessments (K-5) Connected Math End of Unit Assessments (6-8)
	NECAP (3-8)	NECAP (3-8)

Teachers also administer the Reading Recovery Observation Survey in first grade and the Developmental Spelling Analysis at the end of kindergarten and then again at the beginning and end of grades 1-8. There's also a running record of reading for each student in K-2 and for children receiving interventions in the other grades.

In addition to the assessments listed, teachers use a number of classroom assessments to monitor student progress and the identification of students in need of additional instructional interventions.

## **Interventions**

Etna-Dixmont utilizes the Reading Recovery intervention strategy for struggling students. Students are identified through the use of data in the Professional Learning Communities and teachers work to "flag early and intervene often." Reading Recovery is a short-term intervention of one-to-one tutoring, some push-in and some pull-out, for students who are not reading at appropriate levels. Students work with the Reading Recovery teacher (paid by Title 1 funds) and do a lot of guided reading. Reading Recovery is focused on the early elementary grades, specifically first grade, but the Reading Recovery teacher works with students in all grade levels. The school has begun using Read 180, an online reading intervention, for the middle grades beginning in the 2013-2014 school year.

There is intervention time, right now dedicated to mathematics help, through *SuccessMaker* and *MobyMath* in grades two through eight. These are adaptive programs on the computer that students are participating in with help and the support of their teacher. Grades five through eight work on these interventions for 30 minutes daily. Grades two through four dedicate three half hour sessions per week.

The school offers voluntary summer school for students who have been identified as needing extra help and are eligible for Title 1 services. Last year, 18 students registered for summer school and the district provided busing and lunch and breakfast. Summer school was for 4 weeks, 4 days, with about 3 hours of instruction per day. Two teachers provided instruction in literacy and math.

Although not a structured intervention, teachers also work with struggling students through the widespread use of extra help time before and after school. Teachers are available on a regular basis to meet with students who require additional instruction. One teacher did mention that attendance at her after school extra help time has declined since the district did away with the second after-school bus due to budget cuts. She noted that it is the students who most need the additional help that cannot remain after school without school-provided transportation.

There are study halls built into the school schedule that allow time for students to do homework or catch up when they fall behind in their class work. There is a teacher available to help students in study hall, if needed, but it is not the same kind of direct instruction provided before and after school.

## **Professional Development**

It is evident that school leadership and teachers at Etna-Dixmont place a great emphasis on professional development and credit much of their students' achievement on this investment. Professional Learning Communities and the workshop model form the basis of the professional development at the school. The school schedule provides the structure for PLCs to meet and the workshop model provides the structure for instructional improvement.

Table 4 shows the time allowed for professional development of teachers at Etna-Dixmont. Teachers have one planning and preparation 50-minute period four days a week, a 50-minute block per week for collaborative work with their PLC, and five early release days throughout the year. In addition, the district calendar includes two workshop days available for collaborative work with other teachers.

**Table 4**  
**Professional Development for Teachers at Etna-Dixmont**

Type	Time Allocated
Individual planning	50 minute period 4 times per week
Collaborative Work with other teachers	Professional Learning Communities, 50 minutes per week
Pupil-free days for PD	5 early release days and 2 workshops days

PLCs are grouped by grade level spans with all specialist teachers assigned to a PLC. For example, one PLC includes Grade 3 and 4 teachers and the music teacher, with the literacy coach and principal participating regularly. They meet for 50 minutes once a week, while other specialists are instructing students. The agenda is set up ahead of time with agenda items coming from any PLC member. The PLC meeting takes on different forms, depending on the agenda, but often includes the review of data or a book study around some facet of instruction. It can also be a demonstration of a sample lesson with the group providing feedback. Because teachers share many of the same students, especially in the middle grades, reviews of data lead to plans for interventions for struggling students or groups of students. PLCs can also have a yearlong emphasis as they did in the 2012-2013 school year, when they focused on Common Core math.

The Literacy Coach works with teachers directly throughout the year and provides feedback on instruction. The Literacy Coach herself is involved in professional development through the literacy partnership and received coaching on her own coaching. In subject areas, such as math, teachers also get feedback from the principal, a former math teacher, or other colleagues who have the content-specific knowledge.

Teachers also participate in district-level teacher groups currently working on the district's transition to the Common Core. As content specific teachers, a few of the middle grade teachers expressed that a particular benefit of participating in these district-level groups is that it allows them to collaborate with other teachers who are also teaching that particular subject at the middle grades.

As part of the teaching contract the district will pay for 9 credit hours (equivalent to 3 courses) at a university and teachers at Etna-Dixmont make full use of it. Teachers noted that the provision was suspended because of budget cuts in 2012-2013, but they were happy to see that it has been restored in the current school year. New teachers use the credit hours to go through the workshop model class and many teachers work towards a graduate degree. Although neither the district nor the school approves course choices, there is an implicit expectation that teachers are using these credit hours to improve their instructional practice.

The school recently secured a small grant available to Reading Recovery schools to be used for coursework and materials for the literacy coach and a few teachers at the school. Etna-Dixmont is the only school in the district that is part of the literacy partnership and with a new Superintendent who is supportive of their work, it's possible the district may look to implement some of the professional development strategies across other district schools.

## **School Culture**

Teachers and leadership at Etna-Dixmont have high expectations of students and of each other. They also have a commitment to improvement in achievement and doing the things that help students improve such as Reading Recovery, the workshop model, and their professional development. They often used words like “committed,” “driven,” “motivated,” and “pride” to describe their work and each other.

“Supportive” is another word that came up frequently when talking about school culture at Etna-Dixmont. Teachers expressed feeling supported by their colleagues, the school principal, the literacy coach, and most parents and members of the community. A first year teacher reported receiving lots of assistance as a new teacher. “People look out for each other,” said another. Although the work of teaching is challenging, there is a sense that the challenges are collective, with no one bearing all of the responsibility. “These are all our kids.”

One teacher put it this way, “We support each other however we need to because it is so vital. I’m not looking for another job because what I get from [Etna-Dixmont] is so much more important than a shorter commute...” Another teacher enrolls her own children in the school because, “This is where I want my children to be and where I want to work.” Teachers also indicated that they see each other socially, something they have not always experienced in other schools. “We’re not colleagues, we’re a community,” is how another teacher summarized it.

“Students are what makes it work, too.” Teachers feel that most students take pride in doing their best and that it shows in their performance. The school is a Positive Behavioral Interventions and Supports (PBIS) school. PBIS provides a framework for teaching students behavioral expectations. As in other curriculum areas, the school is working on improving, or “tightening up,” their use of PBIS so that students have a consistent set of behavioral expectations across all grade levels.

Although there are few “discipline issues” at Etna-Dixmont, teachers did talk about the instructional challenge that one or two disruptive students can create in a classroom. These students are often emotionally troubled due to their home circumstances (e.g., abuse, neglect, in and out of foster care) and can become disruptive in school. The school social worker and the principal provide support to teachers in dealing with these students, but there is a sense that the number of students coming from troubled home environments is increasing. Despite these challenges, one teacher expressed the expectation that whatever the home environment, “you make up for it in how you instruct.”



Teachers feel that most parents are supportive of their children and supportive of the school and teachers, and some parents volunteer in the school. Community support, in general, is strong. The school has a strong Parent Teacher and Friends Committee that does a lot of fundraising for the school. The group is very supportive of students, according to the school principal, even if they do not always see eye to eye with school and district leadership.

## **Summary**

A major theme to come from Etna-Dixmont is consistency. The teaching staff is very stable at Etna-Dixmont, with an average of 10 to 12 years of teaching at the school, and a few teachers having as many as 20 to 25 years teaching at the school. The student population is also very consistent—the school has little student mobility—which means that teachers and students know each other and have the opportunity to build rapport. Middle grade teachers, for example, see students for grades 5 through 8, which means that by the time the student is in the 8<sup>th</sup> grade, he or she will have had the same science or math teacher for four years. Teachers say that knowing students so well allows them to know what students need and adapt their instruction more readily.

Teaching staff has also maintained a consistent approach to instruction for over ten years. The workshop model, which began as part of a grant-funded literacy partnership with the University of Maine, has been leveraged into a school wide instructional framework used in all classrooms. It provides a common vision of instruction and the platform for the school's professional development efforts. The consistency in staff and instructional approach has allowed the workshop model to become so much a part of the school culture that it has survived changes in school and district leadership and even Etna-Dixmont's change in school districts.

The workshop model's survival has a lot to do with results. Teachers and leadership have and use data that tells them that the model works and no one wants to change that. They also see the positive results in professional development, teachers meet in formal and informal collaborative groups, and despite the considerable investments to date, they continue to prioritize PD efforts for teachers and the literacy coach, looking for any available resources to keep it going.

The expectations teachers have for themselves extend to their students and they focus on the use of data from screening and monitoring assessments to provide interventions to students who are struggling. The help for struggling students takes the form of one-to-one and small group work, before and after school extra help, and summer school interventions. Furthermore, the culture at Etna-Dixmont is one that places a high value on supporting each other—teachers support students and each other, leadership supports teachers and students, and teachers support school leadership.

Though the focus on professional development and on identifying students for interventions is paying off, there is still more work to be done. There is a new teacher evaluation system in place and the school is approaching that as another opportunity for teachers to reflect on their practice. The transition to the Common Core is on the horizon and the school is now adjusting to the more rigorous standards while keeping the workshop model. Students continue to come to school with



challenges outside of the school's ability to control, but the principal and teachers see it as their responsibility to adjust and refine their instructional approaches to serve all students. Clearly, Professional Learning Community is a very appropriate way to describe Etna-Dixmont.

## **PENINSULA ELEMENTARY SCHOOL CASE STUDY**

By Anabel Aportela, Associate, Lawrence O. Picus & Associates

Peninsula School is a K-8 school located in the picturesque coastal town of Prospect Harbor that serves students from the communities of Winter Harbor, Gouldsboro, Corea, and Birch Harbor. The school was built in 2009 as part of the newly consolidated Regional School Unit 24, encompassing 12 communities along the Down East Coast of Maine. Prior to the consolidation, each community had its own school, serving a small number of students each. The consolidation has been a significant change for these communities as they now have one district, with one school board, which serves approximately 2,400 students.

Economic conditions in the community looked bleak when, in 2010, the area's major employer, Stinson Seafood, shut down its sardine canning plant. But the outlook is brighter since a lobster processing company opened in its place in the summer of 2013 and began to hire people from the community. There is also a small amount of farming in the area—blueberries, apples, and potatoes—but the number of jobs available is small.

Through the economic ups and downs, the area has a pretty stable population. Families tend to stay in the area and the school sees few families move in or out. The school enrolls 212 students, which is more than the 165 students the new building was originally built to house. Sixty-three percent of students at the school qualify for free- or reduced-priced lunch, 15% are students with disabilities, and seven students are English Language Learners.

Student performance has improved significantly in several subject areas and grade levels in recent years. Table 1 provides performance data on the New England Common Assessment Program (NECAP) from 2010 to 2012 in math, reading, and science. Percent Proficient/Advanced and percent Advanced exists for each subject area at different grade spans. Notable data in Table 1 includes:

- Performance in Reading Grades 6-8 has increased significantly from 53% to 72% Proficient/Advanced.
- Performance in Math Grades 3-5 has increased from 51% to 62% Proficient/Advanced. The Advanced category more than tripled from 5% to 16%.
- Performance in Math Grades 6-8 has increased from 48% to 58% Proficient/Advanced. The Advanced category has increased from 15% to 21%.
- Performance in Science Grade 8 has increased significantly from 61% to 84% Proficient/Advanced. The Advanced category has more than doubled from 17% to 37%.

**Table 1**  
**Peninsula Performance (2010-2012 NECAP)**  
**All Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	51%	51%	62%
Advanced	5%	16%	16%
<b>Grade 6-8</b>			
Proficient/Advanced	48%	64%	58%
Advanced	15%	19%	21%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	67%	64%	73%
Advanced	10%	5%	17%
<b>Grade 6-8</b>			
Proficient/Advanced	53%	64%	72%
Advanced	0%	4%	2%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	63	46	61
Advanced	11	0	22
<b>Grade 8</b>			
Proficient/Advanced	61%	77%	84%
Advanced	17%	8%	37%

Table 2 exhibits the same information for students identified as economically disadvantaged. These performance indicators exhibit significant gains in certain subcategories of the NECAP assessment. Table 2 gives details on the movement of performance scores for ED students from 2010 to 2012 and shows the following:

- Performance for ED students in Math Grades 6-8 has increased from 41% to 56% Proficient/Advanced. The Advanced category increased from 15% to 20%.
- Performance for ED students in Reading Grades 3-5 has increased from 58% to 68% Proficient/Advanced. The Advanced category more than doubled from a low of 3% to 11%.
- Performance for ED students in Reading Grades 6-8 has increased significantly from 39% to 65% Proficient/Advanced.
- Performance for ED students in Science Grade 8 has increased from 56% to 63% Proficient/Advanced. The Advanced category more than doubled from 11% to 25%.

**Table 2**  
**Peninsula Performance (2010-2012 NECAP)**  
**Economically Disadvantaged Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	50%	33%	50%
Advanced	0%	9%	13%
<b>Grade 6-8</b>			
Proficient/Advanced	41%	61%	56%
Advanced	15%	18%	20%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	58%	46%	68%
Advanced	3%	0%	11%
<b>Grade 6-8</b>			
Proficient/Advanced	39%	68%	65%
Advanced	0%	4%	0%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	73%	43%	50%
Advanced	18%	0%	8%
<b>Grade 8</b>			
Proficient/Advanced	56%	57%	63%
Advanced	11%	0%	25%

This case study provides information regarding how Peninsula achieved such increases in academic performance. The case is based on written documents as well as fall 2013 interviews with the superintendent, principal and key staff. The case is part of a study of the Maine school funding system being conducted for the Maine Legislature by Lawrence O. Picus & Associates. The case has the following eight sections: School Staff, Goals, School Schedule, Curriculum and Instruction Program, Assessments, Interventions, Professional Development, School Culture, and a Summary.

## **School Staff**

Peninsula employs 20.0 full time certified staff, 6.4 paraprofessionals (4 of whom are special education technicians), and 1.0 classified staff. Staff FTE are listed below:

- 1.0 Principal
- 12.0 Core Classroom Teachers (for an overall class size average of 17)
- 1.7 Specialist Teachers
  - 0.5 Music
  - 0.6 Art
  - 0.6 Physical Education
- 0.4 Librarian
- 1.5 Extra Help Staff
  - 1.0 Title 1 Tutor
  - 0.5 Reading Recovery Teacher
- 1.4 Pupil Support
  - 0.8 Guidance Counselor
  - 0.6 Nurse
- 2.0 Special Education Certified Staff
  - 2.0 Special Education Teachers
- 4.0 Special Education Technicians
- 2.0 Instructional Technicians
- 0.4 Library Technician
- 1.0 Secretary

In addition to the staff listed above, the school has access to a number of district resources on an as-needed basis, including an ESL teacher, social worker, occupational/physical therapist, and school psychologist. The specialist teachers and librarian, too, are shared district resources, with staff coming to the school for certain days of the week.

## **School Goals**

Peninsula has chosen to adopt the district goals as its school goals. They are:

1. All students will achieve at least one year's growth in reading and math, and
2. 75% of all students will meet or exceed all growth targets, as measured by NWEA.

## **School Schedule**

The day begins at 8:00 a.m. and ends at 2:50 p.m. for all students in the school, but the schedule is different for grades K-2, 3-5, and 6-8. The K-2 grades, in self-contained classrooms, have 3 instructional blocks totaling 335 minutes with a 15-minute and a 30-minute recess in addition to the a 30-minute lunch. The 3-5 grades, also self-contained, have 3 instructional blocks totaling

350 minutes, with 2 15-minute recesses and a 30-minute lunch. The 6-8 middle grades, which move from class to class, have 4 blocks per day, 85-90 minutes each, totaling 360 instructional minutes. The middle grades have a 20-minute lunch in addition to a 10-minute morning snack and 20-minute recess in the afternoon. Grades 6 and 7 have 90-minute blocks for English Language Arts and math. The 8<sup>th</sup> grade is configured a bit differently, with 90-minute blocks for 2 days and an hour the rest of the week.

## **Curriculum and Instructional Program**

Peninsula has recently begun using *SpringBoard* as their English Language Arts curriculum program in grades 6-8. Published by the College Board, SpringBoard is based on the College Board Standards for College Success and is meant to prepare 6-12 graders for success in Advanced Placement classes and college. The district adopted the curriculum in high school last year, has seen positive results, and has extended its use into the middle grades. The school uses Lucy Calkins writing curriculum in K-5.

Peninsula is also using *SpringBoard* as its math program in grades 6-8, replacing *Saxon Math*, and it continues to use *Everyday Math* in grades K-5. There is confidence that *SpringBoard* is aligned to the Common Core and the program extends into the high school. Teachers are also doing their own alignment of *Everyday Math* to the Common Core.

School leadership likes that the *SpringBoard* curriculums are not commercially developed, but are research based and that practitioners, and not sales people, provide the professional development.

Teachers can also supplement with materials they find useful. One teacher, for example, sees that students become competent readers through practice and so she assigns additional readings.

As part of the Maine Laptop Initiative, all 7<sup>th</sup> and 8<sup>th</sup> graders in the school have laptops and teachers in math, ELA and social studies have been able to load them with instructional content. There is some concern with the resulting strain on the district's IT resources, but overall, it appears to be an instructional advantage to have access to the web-based content.

## **Assessments**

Table 3 shows the core elements of the reading and math programs at Peninsula, including assessments used throughout the year. The primary summative assessment used is the state assessment, NECAP, administered in the fall of the school year to students in grades 3-8. In addition to the state assessment, Peninsula uses the Northwest Evaluation Association's *Measure of Academic Progress (MAP)* in grades 3-8 and *Children's Progress Academic Assessment (CPAA)*, a set of online computer adaptive tests, as benchmark assessments and to monitor progress over the course of the year.

**Table 3**  
**Core Elements of the Reading and Math Programs, Interventions, and Assessments**

	<b>Reading Program</b>	<b>Math Program</b>
<b>Core Curriculum/Program</b>	SpringBoard (6-8)	SpringBoard (6-8)
	Lucy Calkins Writing (K-5)	Everyday Math (K-5)
<b>Core Program Augmentation</b>	Reading Recovery	IXL
	Individual Learning Plan	Individual Learning Plan
<b>Assessments</b>	NWEA's MAP (3-8)	NWEA's MAP (3-8)
	NWEA's CPAA (K-1)	NWEA's CPAA (K-1)
	SpringBoard (6-8)	SpringBoard (6-8)
	Fountas and Pinnell	

The introduction of the new curriculums provides a more formalized assessment system for the school. The school has also expanded the use of the NWEA assessments by adding the CPAA in the earlier grades. The school also uses the Fountas and Pinnell screening assessments to diagnose challenges in literacy.

### **Interventions**

Early elementary students struggling with literacy receive one-to-one reading support from the Reading Recovery teacher in the school. The program is expensive because of the one-to-one instruction, but the school finds it very effective. The next level of intervention provided for all students K-8 is small group instruction provided by the Title 1 and Reading Recovery teachers.

The support for students struggling in math is less formalized and includes some small group instruction from the Title 1 teacher and the use of IXL Math, an online practice program, aligned to the Common Core, where students practice key concepts. The online system allows teachers to monitor student work and track progress.

Students whose second language is English receive instruction from the district's ESL teacher who works with students on specific objectives. The district uses an English proficiency test to determine the interventions needed and the instruction happens as a pullout during regular classroom time.

Peninsula has made use of the results from the MAP to create its Bulldog Watch List—a way of tracking student progress and making sure that struggling students stay on track. In its third year, the Bulldog Watch List is a tool for teachers, individually and in their PLCs, to closely monitor student progress more frequently. Students who score below the 50<sup>th</sup> percentile in MAP are put on the list and receive an Individual Learning Plan. PLCs use the list as they look at data, and the school principal and counselor use the list to follow up on student progress.

The Individual Learning Plan (ILP) contains the same elements for all grade levels. These are:

- **Data/Important Information**—all available assessments and screening information is recorded throughout the year

- Improvement Goals—a description of the challenges faced by the student, based on data; the goals that will address the student’s need; and the instructional action steps that will be taken to address the need
- Higher Level Supports/Tier 2—a list of possible interventions, with a space for a description of how that will be carried out. The list includes after/before school tutoring; mentoring/volunteer help; homework assistance; computer assisted instruction; remedial services (Title 1, LLI), guidance counselor; and other
- Individual Learning Plan Review Notes—a place for the school to track any meetings or events that affect the plan, record participants, and document next steps, and
- Individual Learning Plan Commitment—where the school, parents, and students sign their commitment to the plan.

The school principal indicated that the Bulldog Watch List and ILP have facilitated teachers talking with each other and the counselor and principal. It also facilitates communications with parents. The school is continuing to refine the use of the Bulldog Watch List, but can see results—last year 47% of students on the list made it off the list by the end of the year.

Before and after school tutoring is available to students and it is one of the Tier 2 intervention option in the ILP, but the availability varies by the amount of Title 1 resources are available in a given year. The school does not offer summer school, other than the summer program for special education students whose IEP requires it. The number of days and hours is also determined by the IEP.

## **Professional Development**

The district has invested heavily in professional development. Part of this is the result of district leadership’s effort to bring the newly formed RSU 24 together, aligned toward common goals. It is also a way to offer teachers an opportunity to talk to each other across schools (what would have formerly been across districts). This district-wide collaboration is particularly important because, given the size of schools, teachers were often the only teacher in their position (e.g., 3<sup>rd</sup> grade, art, or middle grade science).

Table 4 shows the type of professional development opportunities for teachers at Peninsula. Each teacher has a 45- to 60-minute planning and prep time 4 days a week, an hour each week for grade span PLCs, and 5 days throughout the year for workshops.



**Table 4**  
**Professional Development for Teachers at Peninsula**

Type	Time Allocated
Individual planning	4 days 45-60 minutes, depending on specials
Collaborative Work with other teachers	1 hour each week for PLCs
Pupil-free days for PD	5 days, throughout the year.

Professional Learning Communities are part of the district focus on professional development. Every Friday, time is allotted to allow for teachers to meet weekly with grade span teams for one hour, where the focus has been on literacy and, in Peninsula, reviewing Bulldog Watch List data. All teachers and the instructional technicians are part of a PLC. Meetings have an agenda with a specific topic for each meeting. The school principal monitors the agenda, minutes, and the progress of the group. The first Friday of every month, specialist teachers across the district get together for similar collaborative work.

The district is part of the Maine Content Literacy Project, a project administered by the Maine Department of Education and funded by a federal Title IIA grant. Along with the literacy PD that the partnership provides, the district has provided DuFour training for PLC facilitators at each school; the DuFour's are among the country's leading experts on PLCs. The district has also purchased Rubicon Atlas, an online tool that allows teachers to talk to each other and map their work in PLCs. There are also regular "dine and discuss" sessions for facilitators to talk about what is going on in their teams.

The district has been able to support PD activities at Peninsula and its other schools through Title I, Title II, and a couple of School Improvement Grants. The district is also part of the Physical Science Partnership that pays for substitute teachers.

## **School Culture**

Interviewees described the school and each other as "professional," "academic focused," a place where teachers "enjoy the fact that students come eager to learn," and where, "expectations are high for students." The school enjoys a veteran staff (with an average of 20 years teaching) with very little turnover. In this environment, teachers have an opportunity to really get to know students and the kind of approach that works best for them. Middle grade teachers, for example, will have had a student in class for three years by the end of the 8<sup>th</sup> grade.

And the size of the school is optimal; it's large enough that the school can offer a variety of instructional programs, but not so large that students get lost in the shuffle. "It still feels like a family." To address behavior and discipline, the school implements the Positive Behavior Intervention Strategies program, focusing on three major principles: responsibility, respect, and safety.

The school also enjoys strong parental and community support. The Parent Teacher Committee is very active, meets once a month, and engages in fundraising activities for the school. They sponsor a very nice dinner every year for the teachers and provide gifts to all people who work with students, including classified staff. If money is available, they provide money to each classroom for supplies. In one year they paid for all grade level field trips. The committee also provides a forum for discussion of school-related issues. The big 8<sup>th</sup> grade trip is also funded by parents and requires about \$10,000 to make the trip happen.

The school communicates regularly with parents through weekly newsletters and a Facebook page. Teachers also communicate regularly with parents.

School leadership knows that that much is expected from teachers—instruction, professional development, implementing programs—and that they have a responsibility to their teachers. “If we expect a lot from them, we have to be there to support them.”

## **Summary**

Peninsula School, with support from the district, has a clear focus on professional development for teachers and the use of data to inform the interventions they provide to students, “We are data driven, but not data crazy.” Teachers have a dedicated time each week for Professional Learning Communities and even though, as one teacher put it, “that hour goes superfast,” it is a valuable resource for teachers and students.

The Bulldog Watch List outlines for all—teachers, parents, students, and school leadership—a clear path for improvement. The data, goals, action steps, interventions, and commitment of key parties are documented and monitored so that students who fall behind do not stay behind for long. Teachers make heavy use of the list in their PLCs and the school counselor and principal use it to monitor student progress.

The interventions provided to students such as one-to-one and small group tutoring are effective and the school is proud of the number of students who have moved off the Bulldog Watch List as a result. But those interventions are largely supported through the school’s Title 1 allocation, which is made on a per pupil basis. This makes it an unstable resource and a cause of concern from year to year. Class size is another resource the school feels is important, particularly with the transition to the more rigorous Common Core standards. Peninsula tries to keep class size under 20 for its classrooms, but there are some classes that are larger. Because of the state’s school funding formula and the loss of state aid to the district, there is concern that class sizes will increase and have a negative impact on students.

It should be clear that the overall set of strategies deployed in this school is aligned with the theory of improvement built into the Evidence-Based model. The school has a school wide curriculum in reading and math that is well articulated. The school is serious about collaborative groups, establishing Professional Learning Communities and has employed some of the country’s top experts in designing and operating PLCs to help the faculty organize and run their

PLCs. Teachers in this school work in collaborative, PLC groups, which meet at least once a week, using multiple sets of student data in an effort to continuously improve the instructional program, identify students who need extra help or interventions, and monitor the impact of those interventions on students over time.

The school has a “watch” list for any student performing in the bottom half. For each of those students an individualized learning program is developed that provides multiple interventions to help them get back on track and remain on a course toward proficiency. The interventions begin with one-to-one tutoring in the early grades and continue with small group tutoring and before and after school academic help. The school also seeks to maximize its access to online content available to all 7<sup>th</sup> and 8<sup>th</sup> graders as a result of the Maine Laptop Initiative.

The school views itself as having a professional culture that is academically focused and has high expectations for all students, regardless of their family or economic background. All these strategies are reinforced by class sizes that generally are under 20 students. Over the past three years, the school has produced impressive results not only for its students overall but also for its economically disadvantaged students, so the school has pushed forward both on excellence and equity.

## **PHILLIPS ELEMENTARY SCHOOL CASE STUDY**

By Anabel Aportela, Associate, Lawrence O. Picus & Associates

Phillips Elementary School is part of Maine Administrative School District Number 58, located approximately 60 miles northwest of Augusta, Maine. The district encompasses a large area, including the communities of Phillips, Strong, and Kingfield—each with its own elementary school of approximately 150-170 students each. The district also has one high school, serving approximately 245 students.

The school district is the major employer in Phillips. There is some employment in the logging industry, a few small businesses in town, and there's a masonry trade school down the road from the elementary school, but the community suffers from significant unemployment. At one point, Phillips had some Section 8 housing available for low-income families, but that is no longer the case.

Despite the economic conditions, families tend to stay in the community and there is very little mobility in the student population of the school. However, there is a small percentage (approximately 5%) of families who remain in the district, but move from town to town or neighborhood to neighborhood, presumably searching for affordable housing. The district's enrollment has remained fairly steady over the last four to five years.

Phillips Elementary School currently serves 155 students in grade K-8. The school also houses a Head Start program for low-income children. Over 70% of students in Phillips are eligible for free or reduced-priced lunch, 18% are identified as requiring special education, and no students are English Language Learners. Occasionally, the school will enroll an ELL student who is served by a district ELL teacher currently housed in another school.

Student performance at Phillips has improved dramatically in several subject areas and grade levels in recent years. Table 1 provides performance data on the New England Common Assessment Program (NECAP) from 2010 to 2012 in math, reading, and science. Percent Proficient/Advanced and percent Advanced exists for each subject area at different grade spans. Notable data in Table 1 includes:

- Performance in Math Grades 3-5 has increased from 48% to 68% Proficient/Advanced. The Advanced category increased more than quadrupled from 5% to 23%.
- Performance in Math Grades 6-8 has increased from 60% to 83% Proficient/Advanced. The Advanced category increased dramatically from 8% to 36%.
- Performance in Reading Grade 6-8 has increased dramatically from 31% to 83% Proficient/Advanced. The Advanced category quadrupled from 4% to 17%.

**Table 1**  
**Phillips Performance (2010-2012 NECAP)**  
**All Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	48%	55%	68%
Advanced	5%	12%	23%
<b>Grade 6-8</b>			
Proficient/Advanced	60%	93%	83%
Advanced	8%	49%	36%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	64%	59%	65%
Advanced	11%	16%	8%
<b>Grade 6-8</b>			
Proficient/Advanced	31%	79%	83%
Advanced	4%	9%	17%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	48%	55%	53%
Advanced	4%	10%	0%
<b>Grade 8</b>			
Proficient/Advanced	83%	46%	74%
Advanced	25%	8%	11%

Table 2 exhibits the same information for students identified as Economically Disadvantaged (ED). These performance indicators exhibit exceptional gains in certain subcategories of the NECAP assessment. Table 2 gives details on the movement of performance scores for ED students from 2010 to 2012 and shows the following:

- Performance for ED students in Math Grades 3-5 has increased from 47% to 63% Proficient/Advanced. The Advanced category increased from a low of 0% to 16%.
- Performance for ED students in Math Grades 6-8 has increased from 51% to 80% Proficient/Advanced. The Advanced category tripled from 11% to 33%.
- Performance for ED students in Reading Grade 6-8 has increased dramatically from 27% to 80% Proficient/Advanced. The Advanced category quadrupled from 5% to 20%.

**Table 2**  
**Phillips Performance (2010-2012 NECAP)**  
**Economically Disadvantaged Students**

<b>Subject and Performance Level</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	47%	49%	63%
Advanced	0%	7%	16%
<b>Grade 6-8</b>			
Proficient/Advanced	51%	90%	80%
Advanced	11%	46%	33%
<b>Reading</b>			
<b>Grade 3-5</b>			
Proficient/Advanced	66%	56%	63%
Advanced	5%	12%	7%
<b>Grade 6-8</b>			
Proficient/Advanced	27%	83%	80%
Advanced	5%	12%	20%
<b>Science</b>			
<b>Grade 5</b>			
Proficient/Advanced	50%	53%	53%
Advanced	6%	0%	0%
<b>Grade 8</b>			
Proficient/Advanced	75%	40%	69%
Advanced	25%	0%	13%

This case study provides information regarding how Phillips Elementary achieved such increases in academic performance. The case is based on written documents as well as fall 2013 interviews with the former principal and key staff. The case is part of a study of the Maine school funding system being conducted for the Maine Legislature by Lawrence O. Picus & Associates. The case has the following eight sections: School Staff, Goals, School Schedule, Curriculum and Instruction Program, Assessments, Interventions, Professional Development, School Culture, and a Summary.

### **School Staff**

Phillips employs 16.6 full time certified staff, 4.4 paraprofessionals (4 of whom are special education technicians), and 5.0 classified staff. Staff FTE are listed below:

- 1.0 Principal

- 9.0 Core Classroom Teachers (for an overall class size average of 17)
- 1.7 Specialist Teachers
  - 0.8 Music
  - 0.4 Art
  - 0.5 Physical Education
- 2.0 Extra Help Staff
  - 2.0 Title 1 Resource Teachers
- 0.9 Pupil Support
  - 0.4 Speech Teacher
  - 0.5 Nurse
- 2.0 Special Education Certified Staff
  - 2.0 Special Education Teachers (pull-out)
- 4.0 Special Education Technicians
  - 4.0 Special Education Technicians
- 0.4 Library Technician
- 1.0 Secretary
- 2.0 Cafeteria staff
- 2.0 Custodians

As in other small schools, some school staff wear multiple hats. The library technician and one of the custodians also serve as bus drivers for the school. There is also shared administration across schools in the district. For example, the high school's Athletic Director also performs similar functions for the elementary schools as needed. Some positions also come and go, depending on the district's budget for the year. For example, the school has had a .5 assistant principal in past years, but does not this year and the .5 Physical Education FTE the school has this year is an increase in allocation compared to previous years, but art and music FTEs are fewer.

During the time covered by the assessment results in the previous section (2010-2012), the school had a 1.0 literacy coach who worked with teachers on improving instruction. Due to budget cuts, the school no longer has a literacy coach position and the former literacy coach has moved on to be principal at another elementary school in the district. The school also lost a volunteer coordinator position funded by another municipality that tuitioned students into the district.

## **School Goals**

Phillips Elementary is a school wide Title 1 school and its goals are:

- Improve reading instruction in the primary grades.
- Provide tutoring for students in danger of not meeting standards for ELA, math, and/or science.
- Implement local English language arts and math assessments to progress monitor students with RTI plans.

- Participate in district wide professional development focusing on literacy and numeracy across the content areas and aligning curriculum with the Common Core for English Language Arts and social studies, science and technology and math. All teachers will participate in the alignment of curriculum with Common Core Standards using e-Curriculum.
- Parent meetings designed to help them support their students' learning will be offered throughout the year.

The performance indicators for these goals are:

- 70% of students grades 1-8 will meet their NWEA growth targets from fall to spring in math (62.4%), reading (39.5%) and language (58%).
- NECAP scores will show a 5% increase in the number of students who are proficient.
- All grades 3-8 will meet the Maine AYP target for reading 83% and math 80% on the NECAP.

### **School Schedule**

The school day for the elementary grades (K-4) begins with breakfast at 8:00 and class at 8:25 to 2:20 with 50 minutes for lunch and recess in the middle of the day. Each elementary grade classroom is self-contained, meaning that students are with the same teacher all day, except for art, music, and PE. The exact number of instructional minutes varies from day to day and classroom to classroom but, on average, elementary grades spend 90 minutes daily on English Language Arts (reading and writing), and 50 minutes daily on math. In addition to the ELA classes, each grade's schedule has time for additional reading and writing activities.

The middle grades' (5-8) instructional day is 8:00 to 2:30 with 50 minutes for lunch and recess in the middle of the day. Middle grades begin and end the day with 10 minutes of homeroom and move to different classrooms for different subject areas. Students have five 55-minute periods plus a 25 minute learning lab for small group work with a teacher.

Typically, middle grade students have one period for English Language Arts, math, science and social studies each day. However, there are not enough specialist teachers to accommodate a special class every day, so students double up on one of the core subjects on some days. This varies from grade to grade. For example, 5<sup>th</sup> grade students have 6 periods of math and science during the week and 7<sup>th</sup> graders have 6 periods of English Language Arts.

### **Curriculum and Instructional Program**

The school uses a reading curriculum that was adopted when the school became part of the Reading First initiative. The grant, introduced by the U.S. Department of Education with No Child Left Behind in 2001, supports schools and districts that apply scientifically based research on reading and the proven instructional and assessment tools consistent with the research to the goal of ensuring that all students can read by the end of third grade. Through the grant, teachers



in Phillips were provided training in the evidence-based practices and ongoing professional development. This, along with Reading Recovery, forms the basis of Phillips' approach to literacy. The core reading program is supplemented with the *Fountas and Pinnell* leveled reading books. The school also uses the *Six Plus One Writing Traits* approach for writing instruction.

Phillips uses Houghton Mifflin's *Saxon Math* for math instruction at all grade levels. The school uses Hands on Science, a series of science kits for the elementary grades. In the middle grades, the science curriculum rotates through a series of science units covering the breadth of disciplines (e.g., biology, chemistry, etc.).

In recent years, there has been an effort to increase the amount of instruction that happens in smaller student groups. The school's prior emphasis on Maine's Learning Results has now shifted to the Common Core, with teachers aligning existing curriculum and materials to the more rigorous standards.

## Assessments

Table 3 shows the core elements of Phillips' instructional program, along with the interventions in place for struggling students and the assessments used for screening, monitoring, and measuring student progress. The primary summative assessment used is the state assessment, NECAP, administered in the fall of the school year to students in grades 3-8. In addition to the state assessment, Phillips uses the Northwest Evaluation Association's *Measure of Academic Progress (MAP)*, a set of online computer adaptive tests, as benchmark assessments to monitor progress over the course of the year.

**Table 3**  
**Core Elements of the Reading and Math Programs, Interventions, and Assessments**

	Reading Program	Math Program
<b>Core Curriculum/Program</b>	Houghton Mifflin	Saxon Math
	Six Plus One Writing Traits	
	Fountas and Pinnell	
<b>Core Program Augmentation</b>	Reading Recovery	Small group instruction
	Read Naturally	
	Guided reading	
<b>Assessments</b>	Observation Survey (Kindergarten and Grade 1)	
	Spelling Inventory (K-4)	
	Running Records K-8	
	NECAP	NECAP
	NWEA's MAP (1-8)	NWEA's MAP (1-8)

Teachers use assessments to identify students in need of interventions at various times throughout the year. In the elementary grades, teachers use a fluency assessment at the beginning of the year to target those students who need help with fluency and comprehension. Teachers

administer the Reading Recovery Observation Survey at the end of Kindergarten and first grade to identify interventions in the following year. There's also a running record of reading for children receiving interventions in K-8 done throughout the year.

In addition to the assessments listed, teachers use a number of classroom assessments to monitor student progress and the identification of students in need of additional instructional interventions.

## **Interventions**

Phillips is a Reading Recovery school, with one Title 1 teacher who is trained in Reading Recovery. Reading Recovery is a short-term intervention of one-to-one tutoring, some push-in and some pull-out, for students who are not reading at appropriate levels. Students work with the Title 1 teacher and do a lot of guided reading. Reading Recovery is focused on the early elementary grades, specifically first grade, but the Title 1 teacher works with students in all grade levels and also provides some extra help in math.

The school also uses *Read Naturally* in the elementary grades as an intervention resource for struggling readers. *Read Naturally*'s structured intervention programs combine teacher modeling, repeated reading, and progress monitoring — three strategies that research has shown are effective at improving students' reading proficiency.

Interventions for students struggling in math happen on an individual basis. Some teachers use Tier 2 interventions in the classroom, implementing focused, small group instruction. The middle grades at Phillips have a 25-minute Learning Lab, where students are grouped for focused instruction based on their NWEA results.

The school does not offer before or after school extra help for struggling students. Students can choose to attend after school study hall, which is staffed with a teacher, but the time is not used for direct instruction. The school currently offers summer school for special education students whose Individualized Education Plans call for it.

## **Professional Development**

Although the former principal, literacy coach and teachers acknowledge the importance of professional development, scheduled time for PD is rather limited. Table 4 shows a summary of the time allocated for PD at Phillips. In the past, the school has been able to schedule 30-minute blocks for teachers to plan and prepare lessons, but because of the cuts to specialist teachers, this is no longer happening. Instead teachers use before and after school time for planning and preparation.

The second staff meeting of the month is meant for teacher teams to work with each other; this provides about one hour each month. Teachers do have 8 early release days during the school year, each providing 3 hours of pupil-free time and that time is used for district-wide PD or collaborative work with other teachers. When the district uses this time, however, the time

required for teachers to travel (10-20 miles or more) to different schools eats into the time spent on the PD activity itself, resulting in PD time that is closer to 2 hours.

In addition to early release days, teachers have 5 workshop days which happen mostly in the summer. Most of this time, the district provides the PD. This year, three of these days were spent mapping and aligning the curriculum to the Common Core State Standards using the *Revolutionary Schools* eCurriculum software. Another two days were spent on beginning- and end-of-year activities.

**Table 4**  
**Professional Development for Teachers at Etna-Dixmont**

Type	Time Allocated
Individual planning	30 minutes before and after school
Collaborative Work with other teachers	1 hour per month for teams
Pupil-free days for PD	8 Early release days (approx. 2 hours, each)
	5-6 workshop days

Even though the school schedule does not include weekly time for collaborative work with other teachers, the middle grades (5-8) teachers meet once per week for 40 minutes, during their lunch hour. This is not a requirement, but because they see this time as important, they have worked out a way to cover lunch duties so that they can meet. During this time teachers review data, discuss student progress and plan interventions. Teachers also make time to work with each other before and after school or whenever they have some common time without students or duties. This happens organically and the time spent in these informal collaborations varies by teacher.

The district does support teacher professional development by providing funding for teachers to participate in professional development workshops outside of the district and it reimburses teachers for university courses. Teachers take advantage of these resources and this has led to all teachers in Phillips completing their Master's degree. The first grade teacher is also certified Reading Recovery and the 2<sup>nd</sup> and 4<sup>th</sup> grade teachers are also certified special education.

### **School Culture**

Teachers described the school as welcoming and inviting to parents and community members. "We're professional people, but approachable," is how one teacher put it. This professional yet approachable spirit is what allows teachers to build relationships and trust with students, parents, and each other.

The school has a veteran staff—the majority of teachers have been at the school for at least 20 years—and they are rooted in the community. They know their students well, know what their individual challenges are (sometimes before they arrive in their classroom), and they adjust their

instruction accordingly. In the middle grades, teachers see students for four years and get to know them very well. It would be very hard for a student to get lost or fall through the cracks in a school like Phillips.

Teachers are very close as a staff; they have a monthly breakfast together and they have held the school together through frequent changes in school and district leadership. Teachers have learning expectations of students and encourage students to take pride in their school, make better decisions, and be more focused in the classroom. Some of the teachers at Phillips are trained in the Positive Behavioral Incentives and Support approach to student discipline and use some of these strategies in their classrooms.

Parents and the community are supportive with volunteers regularly helping at the school. In prior years, the school had a volunteer coordinator funded by another district that tuitioned students into MSAD 58, but the position has been eliminated, leaving a question as to how the school will continue to make use of volunteers.

## **Summary**

Phillips Elementary School functions as a small, closely knit, professional community within a small community. A stable teaching staff and largely stable student population allows students to build comfort and trust in their teachers and it allows teachers to get to know students very well, over multiple years, and tailor instruction to individual needs.

The school has worked in a focused manner during the past several years to improve student performance in reading and mathematics and has been successful at that task.

The school uses two research based curriculum programs for these subjects: a reading curriculum from the Reading First initiative launched a decade ago and *Saxon Math*. Both serve as the core for instruction in the two areas where the school has produced large gains in student learning, for all students as well as ED students.

As they implement these curriculum programs, teachers work collaboratively with multiple assessments to strengthen the ongoing curriculum program, and identify and progress monitor struggling students. The school also draws from multiple interventions to augment the core instructional program, ranging from Tier 2 small group instruction in math, to one-to-one and small group work provided by the Title 1 teachers. The Learning Lab in the middle grades also serves as a way of providing every day small group instruction to students based on need. Further, because of choices made due to budget cuts, students in middle school receive an extra period of math in grade 5 and an extra period of reading/language arts in grade 6, a serendipitous strategy behind the dramatic student performance gains in these subjects.

It should be noted that during the time of the student performance gains, the school had a full time literacy coach funded by the Reading First grant.

Although district investments in professional development have always been minimal, grant and Title 1 investments made in prior years, through Reading First and Reading Recovery are still paying off because teachers in Phillips tend to stay in Phillips. Teachers continue to place a high value on collaboration and some have found ways to make time to work with each other, even though the time is not built into the school schedule. They make use of duty-free lunch times and before and after school time to work with each other.

There are a number of potential challenges for continued improvement at Phillips Elementary—the transition to the Common Core, the new Smarter Balanced assessment and the state’s new requirements for teacher evaluation. But given what has led to the improvements in achievement so far, a bigger challenge might be the cuts in recent years, from multiple sources, that have resulted in the loss of specialist teachers, the literacy coach, and the volunteer coordinator. There is concern that continued cuts will result in the loss of the two Title 1 teachers—a loss that the district cannot fund otherwise and that would severely limit the school’s ability to provide interventions for struggling students and might undo much of the great work currently going on in the school.

Phillips Elementary School provides a good case of the potentially large impacts that can be made with the improvement approach built into the Evidence-Based funding model. Phillips Elementary School’s version of this model has produced impressive results not only for all students but also for students from economically disadvantaged backgrounds who constitute 70% of the school’s enrollment. Demographics did not determine education outcomes in this school. Teachers using a cohesive set of evidence-based practices produced meaningful results despite the high incidence of poverty in the community and the school.

## **WINDSOR ELEMENTARY SCHOOL CASE STUDY**

By Michael Goetz, Associate, Lawrence O. Picus & Associates

About 20 miles east of the state capital sits Windsor School, serving K-8<sup>th</sup> grade students in Sheepscot Valley Regional School Unit #12 (RSU 12). RSU 12 includes six towns that cross about 30 miles, stretching from Chelsea in the north to the Atlantic Ocean in the south. A founding member of RSU 12 in SY2009-10, the occupants of the 23,000 resident rural community are primarily blue collar, religious, and family-oriented. As the lumber and paper mills have left the region, adults mainly fill retail positions in the capital or work in the service industry on the coast.

Windsor serves about 320 students, who are primarily white (98.9 percent) and increasingly economically disadvantaged (ED) (61.0 percent), as identified by free and reduced priced lunch counts. Windsor hosts a Head Start pre-kindergarten (PK) program, which exists as a separate entity in the building. In 2012-13, Windsor absorbed about 25 K-5 Somerville students, who are primarily categorized as ED. Interactions with this influx of students has had an impact on the quantity of students who receive extra help, but not yet on assessment results, as the testing data included in this study pre-dates the additional students.

Student performance has improved dramatically in several subject areas and grade levels in recent years. Table 1 provides performance data on the New England Common Assessment Program (NECAP) from 2010 to 2012 in math, reading and science. Percent proficient/advanced and percent advanced exists for each subject area at different grade spans. Notable data in Table 1 includes:

- Performance more than doubled in percent advanced for math, grade span 3-5; reading, grade span 3-5; science, grade 5; math, grade span 6-8; and reading, grade span 6-8.
- Percent proficient/advanced improved from 2010 to 2012 in all subject areas and grade spans, including impressive score improvement in all subjects tested in grades 3 through 5.

Table 2 exhibits the same information for students identified as economically disadvantaged. These performance indicators also exhibit exceptional gains in certain sub-categories of NECAP assessment. Table 2 gives details on the movement of performance scores for ED students from 2010 to 2012 and shows the following:

- Performance indicators more than doubled in terms of percent advanced in all subject and grade spans, except for 8<sup>th</sup> grade science.
- Significant improvement in proficient/advanced percentages in all subjects for the 3-5 grade span. Reading (grade span 6-8) and science (grade 8) show improvement while

math in grade span 6-8 shows a decrease in percent proficient/advanced. Percent advanced dropped precipitously in grade 8 science.

**Table 1**  
**Windsor School Performance (2010-2012, All Students)**

<b>Subject and Performance</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>	<b>Grades 3-5</b>		
Proficient/Advanced	52%	55%	69%
Advanced	7%	13%	15%
<b>Reading</b>	<b>Grades 3-5</b>		
Proficient/Advanced	64%	79%	86%
Advanced	10%	20%	32%
<b>Science</b>	<b>Grade 5</b>		
Proficient/Advanced	65%	65%	84%
Advanced	0%	5%	23%
<b>Math</b>	<b>Grades 6-8</b>		
Proficient/Advanced	58%	62%	61%
Advanced	13%	21%	27%
<b>Reading</b>	<b>Grades 6-8</b>		
Proficient/Advanced	71%	79%	85%
Advanced	15%	37%	41%
<b>Science</b>	<b>Grade 8</b>		
Proficient/Advanced	74%	71%	76%
Advanced	14%	23%	16%

Source: Lawrence O. Picus and Associates calculations from ME State NECAP data.

This case study provides information regarding how Windsor School achieved such increases in student academic performance. The case is based on written documents as well as fall 2012 interviews with the principal and lead certified staff. The case is part of a study of the Maine school funding system being conducted for the Maine Legislature by Lawrence O. Picus and Associates. The case has the following six sections: School Staff, Goals, School Schedule, Curriculum and Instruction Program, Assessments, Interventions, Professional Development, School Culture and a Summary.

**Table 2**  
**Windsor School Performance (2010-2012, Economically disadvantaged (ED) Students)**

<b>Subject and Performance</b>	<b>2010 NECAP</b>	<b>2011 NECAP</b>	<b>2012 NECAP</b>
<b>Math</b>	<b>Grades 3-5</b>		
Proficient/Advanced	41%	40%	63%
Advanced	0%	6%	13%
<b>Reading</b>	<b>Grades 3-5</b>		
Proficient/Advanced	59%	80%	79%
Advanced	3%	17%	30%
<b>Science</b>	<b>Grade 5</b>		
Proficient/Advanced	46%	71%	75%
Advanced	0%	0%	19%
<b>Math</b>	<b>Grades 6-8</b>		
Proficient/Advanced	61%	53%	52%
Advanced	6%	11%	17%
<b>Reading</b>	<b>Grades 6-8</b>		
Proficient/Advanced	76%	73%	79%
Advanced	9%	24%	31%
<b>Science</b>	<b>Grade 8</b>		
Proficient/Advanced	70%	69%	75%
Advanced	10%	23%	0%

Source: Lawrence O. Picus and Associates calculations from ME State NECAP data.

### **School Staff**

Windsor currently employs 24.6 full-time certified staff and 12 paraprofessionals (9 of whom are special education technicians), excluding the PK program, which functions with little support from the school. The positions are broken into the following full-time equivalents (FTE):

- 1.0 Principal
- 1.5 Secretaries
- 1.0 Technology Coach
- 2.0 Kindergarten Teachers
- 1.0 Second Grade Teacher
- 2.0 Third Grade Teachers
- 2.0 Fourth Grade Teachers
- 2.0 Fifth Grade Teachers
- 2.0 Sixth Grade Teachers
- 4.0 Seventh/Eighth Grade Teachers
- 3.6 Specialist Teachers, including:
  - 1.0 Art Teacher
  - 1.0 Librarian



- 0.6 Music Teacher
- 1.0 Physical Education Teacher
- 3.5 Extra Help Staff
  - 0.5 Reading Recovery Tutor (Title I)
  - 3.0 Title I Education Technicians (Tutors)
- 2.5 Pupil Support Staff, including
  - 1.0 Behavior Lab Teacher
  - 1.0 Counselor
  - 0.5 Nurse
- 13.7 Special Education Staff
  - 2.5 Resource Room Teachers
  - 1.0 Life Skills Teacher
  - 6.0 Resource Room Technicians
  - 3.0 Life Skills Education Technicians
  - 0.4 Occupational Therapist
  - 0.8 Speech Therapist

In summary, the school's administrative team includes a principal (1.0), a technology coach (1.0), and secretaries (1.5). In the regular education program, Windsor has grade-level teachers (16.0) and specialist teachers (3.6), which includes a librarian. Extra help personnel come in the form of a tutoring team, including a part-time Reading Recovery Teacher (.50) and tutor paraprofessionals (3.0). Pupil support staff (2.5) round out the regular education personnel.

Windsor's mainstreamed (social studies and science) and pull-out programs (reading, math, and writing) include resource room teachers (2.5) and resource room paraprofessionals (6.0). A Life Skills Teacher (1.0) and Education Technicians (3.0) work with about 10 students in a self-contained classroom. A part-time Occupational Therapist (.40) and Speech Therapist (.80) serve students in both programs.

Regular class sizes range from 15 to 23 students in K-3 (average ratio: 17-1) and 18 to 21 students in grades 4-5 (average ratio: 19-1). Sixty-six 7-8 grade students are shared among four core subject teachers, who emphasize math, English, literature, social studies, and science.

### **School Goals**

The current goals of Windsor are similar to past goals in form and function. Each is a specific, attainable goal within the confines of improving math and reading scores across the grade levels. They consist of:

- With the use of Accelerated Reader, the goal for total words read during the school year is 265 million. This word total is split between students (175 million words), staff (65 million words), and the community (25 million words).
- The school will complete 13,000 objectives/facts in the Accelerated Math and Math Facts in a Flash programs (10,000 by students and 3,000 by staff).

- An increase in math proficiency by 2 percent, as measured by the Northwest Evaluation Association (NWEA).

This year, if the school meets these goals, during an assembly, the principal has agreed to become a human sundae during an assembly and every person in the school will receive sundaes at lunch.

## **School Schedule**

A Windsor school day is from 8:00 AM to 2:20 PM. Elementary students have 30 minutes for lunch and a 15-minute recess. Students experience about 120 minutes of reading/literacy, 45 minutes of social studies or science, and 60 minutes of math. Teachers have about 40 minutes of non-teaching time while students are in specialist classes—art, music, library, or physical education. During this time, teachers are free for planning and preparation or additional time tutoring students who are pulled out of the class, if they decide to do so.

Seventh and eighth grade students have 20 minutes for homeroom, 30 minutes for lunch, and 30 minutes for “Wildcat.” Students experience one hour each of math, literature, English, and social studies/science. They attend two specialist classes in core subject areas, art, music, library, physical education, or study hall. In the latter, they may receive Response to Intervention (RTI)-based instruction, provided by Title I paraprofessionals, classroom teachers, or other teachers. Students are also sometimes pulled out of library time or science/social studies for this instruction. Teachers instruct five out of six periods, have a 30 minute lunch, and about 40 minutes of non-teaching time, which is used for planning and prep or additional help for struggling students.

## **Curriculum and Instructional Program**

Winsor is a school dedicated to improving the academic achievement of students and systematically pinpointing areas in which individual students struggle to achieve learning goals. While the core programs, core program augmentation, interventions, and assessments are intertwined in the school’s functions, this section attempts to put forth the overall curriculum and instructional program. The types of subject-specific curriculum, augmentation programs, and assessments used by Windsor are located in Table 3.

Coupling a home-grown English Language Arts (ELA) program (based on the Learning Results and, increasingly, the Common Core Standards) with an Accelerated Reading (AR) supplemental strategy, Windsor focuses on reading. Accelerated Reading is an on-line assessment system by which students and teachers receive recommended curriculum, such as books at different lexiles (or in the case of AR: *ATOS Readability Formula for Books* mechanism) based on a student’s performance on AR-designed quizzes. Teachers also create assessment questions to augment those provided by the software. Teachers suggest that the AR program challenges students to read more and at an appropriate level.

Windsor has purposefully implemented a variety of goals and rewards for literacy. Students, teachers, administration, and recently, the community, compete for prizes and recognition for the quantity of level-appropriate reading they accomplish. The curriculum and pedagogical strategies are designed to isolate areas for improvement via assessment, online, adaptive programs, and other various supplemental reading/language arts learning strategies.

**Table 3**  
**Core Elements of the Reading and Math Programs, Augmentations and Interventions**

	<b>Reading Program</b>	<b>Math Program</b>
<b>Core Program</b>	Curriculum based on Learning Results Curriculum and Common Core Curriculum Maps (K-8)	Everyday Math (K-6) Saxon (7-8)
<b>Core Program Augmentation</b>	Accelerated Reading (K-8)-suggested leveled readers	Accelerated Math (K-8) on-line assessments for leveled math
	Lexia (K-8) computerized phonic program	Math Facts in a Flash (K-3)
	Writing Prompts (K-2)	ALEKS online, adaptive math program
<b>Assessments</b>	Early Prevention of School Failure (EPSF) (K-1)	Early Prevention of School Failure (EPSF) (K-1)
	Developmental Reading Assessment (DRA-1) (K-3) DRA-2 (4-8)	
	NECAP (3 <sup>rd</sup> -8 <sup>th</sup> grade)	NECAP (3 <sup>rd</sup> -8 <sup>th</sup> grade)
	NWEA (K-8)	NWEA (K-8)

While the primary focus of Windsor is literacy, the school is increasingly targeting math academic growth. The K-6<sup>th</sup> grade Everyday Math program, Windsor's main K-6 math curriculum, is based on real-life examples, multiple exposure to concepts and basic skills, and problem-solving strategies. Saxon Math, focused on problem solving algebraic thinking is the base of the Jr. High math program. The school couples the Everyday Math and Saxon programs with Accelerated Math (AM), a system by which students and teachers receive recommended curriculum based on a student's performance on AR-designed quizzes. Teachers also create assessment questions to augment those provided by Math Facts in a Flash software. Additionally, this year, students may access the ALEKS math program (an on-line, adaptive program similar to Khan Academy) that produces worksheets on areas on which students need additional help.

### **Assessments**

Windsor uses a combination of benchmark and summative assessments to evaluate student knowledge and skills and to guide the score and sequence of the curriculum. For Windsor  
FINAL REPORT Part 2: December 1, 2013 (Revised 12-24-2013)

School, the primary summative assessment data exist from student participation in the NECAP math, (3<sup>rd</sup>-8<sup>th</sup> grade), reading (3<sup>rd</sup>-8<sup>th</sup> grade), and science (5<sup>th</sup> and 8<sup>th</sup> grade) subject assessments. The NECAP serves as a guide to overall strengths and weakness of students, and the Northwest Educational Assessment (NWEA) for math and reading (K-8) serves as a major guide for the particular sub-skill foci for students in the school. Additionally, other assessment drivers of knowledge and skill development include the Accelerated Math and Accelerated Reading on-line programs, as they assess student comprehension of math and reading concepts and skills before recommending an individualized plan on which to move forward in specific academic areas.

Results of NWEA assessments (winter and spring, as well as fall for new students from other districts) are one of many indicators to differentiate and drive the curriculum and instruction of students. The results are used as a starting point in the RTI process as well as an indicator of growth.

## **Interventions**

Windsor, along with all other schools in Maine, has a Response to Intervention (RTI) strategy. The goals have been not only to catch students before they are referred to special education, but to appropriately understand where all struggling students lack knowledge or skills. Tier I students experience the regular and supplemental program, Tier II students receive additional programmatic support, and Tier 3 students receive the most intensive strategies in special education environments.

Windsor has had two Student Intervention Teams (SIT) for about five years. One team is dedicated to K-4<sup>th</sup> grade students the other for 5-8<sup>th</sup> grade students. Typically a combination of the SIT lead, applicable classroom teacher, technicians (aides), and Title I personnel, the teams meet at least monthly to discuss students in the RTI program. They also meet when staff refer a student so as to determine what the goals for the student should be. Student placement within the RTI program ebbs and flows, typically with about 15 students assigned to each team with two to three students cycled in and out each year. These students are placed in Tier I, Tier II, and Tier III based upon their performance in math, reading, and/or behavior. Currently, half of the students experiencing RTI are placed for behavioral reasons and the other half for academic performance or learning issues.

Tier I includes universal in-class instruction. Assumed to be about 75 percent of the student body, the base and supplemental curriculums are combined with typical pedagogical methods to promote student growth. This instruction also includes some of the supplemental tools that are used with more emphasis in Tier II.

Tier II is designed for students with moderate risk (about 15 percent of student body). It combines Tier I strategies with differentiated instruction and targeted, scientifically-based programs in and out of the classroom. Two of the main programs that Windsor uses to increase struggling students' performance in reading and math are the Accelerated Reading and Accelerated Math programs (Renaissance Learning). In addition, Windsor uses Lexia, a computer-based phonetic awareness program in the upper grades. About 20 students in 4-8<sup>th</sup>

grade also use Lexia as an intervention strategy. The use of these programs is coupled with individual tutoring sessions, when necessary. Each of these interventions is aided by the fact that every 7<sup>th</sup> and 8<sup>th</sup> grader has a laptop computer and all students have access to an impressive computer lab. K-2 classrooms each have two iPads and/or Nooks for independent practice.

Tier 3 students (designed to serve about 10 percent of students) have individual education plans (IEPs) which prescribe pullout or contained settings and specialized programs in addition to those received by students in Tier II. While most special education students are mainstreamed and/or participate in pull out programs, about ten students are taught in self-contained classrooms. These students are unable to function in the regular educational setting. Primarily under academic IEPs, these students may be multiply handicapped, and they come from the entire district to this program. While the program serves too many students, according to school leaders, some special education services are not meeting the needs of the student population (e.g., 12 students are identified as needing speech therapy, but only 7 students receive services). Tier 3 students are assessed weekly against performance goals.

### **Professional Development**

Over the last five years, once a month, the school has an early release day to plan and prepare for a new state teacher evaluation system, student questionnaires, and the Common Core State Standards (CCSS). Curriculum development and mapping was a large part of the professional development schedule, including work with the ATLAS program and CCSS to construct the school's curriculum scope and sequence. The ATLAS program is a software system that promotes curriculum mapping and implementation and gives teachers access to standards, abstracts, resources, and curriculum outlines that align to the Common Core State Standards.

Windsor School is a recipient of a five-year Teacher Incentive Fund (TIF) grant via the Maine Schools for Excellence initiative and the U.S. Department of Education. Structured professional development is currently consumed by TIF implementation in this second year (of four years) of the grant. TIF grant-associated work takes up of the vast quantity of teachers' current professional development time.

Hesitancy of such focused work has caused unrest with the school staff. Teachers and leadership suggest that early release times take away from teacher's time with students and that professional development is all tied into TIF design, standards, and implementation. Multiple staff members mentioned that they believe the time spent on TIF is taking away from professional development to help them teach more effectively, immediately. Acknowledged by teachers and school/district administrators alike, the feeling is that there does not exist enough useful professional development.

Targeted professional development does occur. Teachers meet in grade groupings. For example, K-2<sup>nd</sup> grade teachers meet monthly with Title I staff, therapists, education technicians, and others to discuss book shares, common writing prompts, and engage in some focused professional development. Team leaders meet monthly to discuss goals and processes by which to educate

students more effectively. The principal evaluates every teacher every year, providing feedback on practice.

In all, five non-student days exist in the teacher contract, and two of these days are used for parent-teacher conferences and classroom set-up and break-down.

### **School Culture**

Understanding the Windsor School's culture is important to answering the question of how the school has so dramatically improved student performance. Windsor teachers and administrators have established a culture of student academic success in the school. Windsor discourse is pervaded by a key tenant: *how will this help the kids?* This question must be answered for any academic or behavioral policies or programs. Teachers live up to an expectation that they put forth all effort necessary to improve student learning. As one teacher said, "teachers will jump over ten hurdles to help a kid." They feel that it is their responsibility to find out where a student has holes in competencies and then fill them through regular classroom instruction or, if necessary, intervention strategies. Academic performance is tied to incentives such as time with the principal, participation in skits about the NECAP, and recognition at assemblies.

Teachers suggest the school culture is warm, welcome, and relaxed. They feel supported by administration, feeling comfortable about sharing feelings and suggest they are listened to. Indeed teacher leaders suggest the principal is the key ingredient to the school's culture, specifically his interest in the students and how they will achieve. At the same time, the school culture is built around achievement, Windsor expects the community will support endeavors to this end. While often supportive in events (e.g., it is not unusual to have 500 parents at a music event), the school has pulled the community into its academic focus. For example, reading is a student goal, a classroom goal, a school goal, and now a community goal, with the community caught up in reading contests.

The family environment that the school portrays has its effect on the staff and community. Little turnover exists at Windsor; teachers leave the school when they retire, not before. The principal considers the school a family atmosphere inside and out. If families need clothes, oil, or food, the school will step into the situation to ensure these basic necessities. This type of familial, academic, goal-driven atmosphere, allows for the school's structures to work towards academic achievement.

### **Summary**

Teachers and administrators at Windsor suggest multiple reasons for the increased performance of students during this time. They note the introduction of the RtI program, the development of a student performance-driven culture, and relentless attempts to offer substantive extra help to students struggling to learn.

The next key area on which the school needs to focus is professional development. Evaluating, planning, and implementing a cohesive PD plan would further increase the effectiveness of the programs and policies it has put into place to-date. Intensive, embedded professional

development is the method by which the impressive growth in student performance will continue.

The number of Special Education staff is high. Even taking into consideration the high cost special education students in the Life Skills program, which the school has little control over, staff remains high for the low-cost, high incident special education students.



# CHAPTER 5: SIMULATING OPTIONS TO THE EPS

## INTRODUCTION

As part of Lawrence O. Picus and Associates' review of Maine's Essential Programs and Services (EPS) school funding system, we were asked to provide the Joint Standing Committee on Education and Cultural Affairs (hereinafter referred to as the Committee) with the capacity to simulate the Evidence Based (EB) model and consider alternative resource allocations for the components of the EB model (see chapter 3 of this report). In addition, we sought to build the model so that we could analyze the funding implications and tax implications of the EB model; and we included a distribution model that allows consideration of per capita income as an alternative measure of fiscal capacity.

The purpose of this model – which we will provide to OPEGA for continued use – is to **estimate** the impact of alternative EB parameters, funding distribution choices and fiscal capacity measures on the total estimated cost of the EB model in Maine. Conceptually, any set of EB parameters will result in a new total cost of education for Maine. Once that total has been estimated, the model then allows estimation of state and local percentage shares. While the state percentage share of the current EPS is approximately 45% of the total, the state's goal is to shift that to 55%. Our model allows for estimates of state and local percentage shares using the current state percent share, a state share of 55%, or by holding the required tax rate (RTR) constant and allowing the state local shares to vary depending on the cost of the EB model that is simulated. In short, the model allows users to vary funding system parameters in a number of ways including changes in:

- The parameters and formulas of the EB model (e.g. changing class sizes or the allocation of certified teachers to serve struggling students)
- The state required tax rate for raising the local share of EB revenue
- The percentage of total EB funding provided by the State
- Whether or not to include a measure of income in the computation of each SAU's fiscal capacity.

There are infinite possible simulation options available within the model. This chapter focuses on a limited number of those options, generally from the Committee's requests, and provides summary data on the simulations that were run. Appendix A of this report provides additional analytical tables with more detailed output from the simulations described herein. Appendix B provides SAU by SAU summary results from two of the simulations we tested.

At the August 1, 2013 Committee meeting we were also asked to reconcile our model's calculation of total state and local education funding with the funding level displayed on acting Commissioner Rier's annual funding graph. Reconciling these figures was a complex undertaking and we have attached a Memorandum of Understanding between the Department of Education and Lawrence O. Picus and Associates indicating how the figures were reconciled and



stating that both parties agree with the approach and results of this effort. This memorandum is in Appendix C of the report.

At our October 29<sup>th</sup> meeting with the Committee, we presented a memorandum summarizing several simulation outcomes. Following the discussion with the Committee, several adjustments were made to the model. The memo we prepared for the Committee was revised accordingly, and the November 15 revision of our October 29<sup>th</sup> memo is included as Appendix D to this report.

Before proceeding to the findings, it is important to emphasize that the results of the simulations reported here are only **estimates** of the revenue and tax impact on each SAU. Should the exact parameters simulated in one of these options become the operational definition of the state's education funding system in the future, actual revenues and tax rates will vary as student enrollments, property values, local tax decisions, and other state programs not specifically part of the EB or EPS models are certain to change by the time a new model is fully in place.

Thus the purpose of these simulations is not to show actual revenue distributions – that is the role of the Maine Department of Education – but rather to provide detailed estimates of the impact of these changes. The simulations will allow members of the Committee and the Legislature to understand the fiscal and tax impact of alternative approaches, and to have a close approximation of the total state and local costs of the system, as well as the distribution of state and local revenues to each SAU. As the Committee establishes policy goals for education funding in the future, this model will demonstrate the impact of those policies on each SAU.

In the presentation that follows, recall that we are simulating state and local aid and tax rates for the 2012-13 school year. The results of each simulation are thus comparable to actual state and local revenues for that year. The data set we use for the simulations includes EPS funding at 97% of the total, as well as adjustments for the curtailment of \$12.5 million enacted in the middle of the 2012-13 school year. As a result, our base simulation uses a required local tax rate (RTR) of 7.8 mills to fund the EB model.

## **SIMULATING THE EVIDENCE BASED MODEL**

Because of the flexibility of our model, many alternative simulation options can be considered. For this report – and our presentation to the Committee on December 10, 2013, we have focused on two major options. The first is the EB model as we originally presented it to the Committee.<sup>24</sup> The second simulation we present is the EB model with the modifications suggested by the Committee as well as one alternative simulation requested by Rep. Hubbell that provides the minimum receiver districts with at least 100% of special education costs. A number of additional questions were asked of us as we completed the simulations. The discussion that follows includes the following:

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<sup>24</sup> Details on the model components, the rationale for the parameters we recommend and how they compare to the elements of the EPS model can be found in Chapter 6 of our Part 1 Report.

- Simulation of the EB model
- Simulation of the Committee EB model
- Simulation of the Hubbell alternative
- Simulation of Fiscal Capacity options

### Simulation of the EB model

Our first simulation was of the EB model as presented to the Committee in our Part 1 Report. Chapter 6 of that report describes the EB model in detail, provides the rationale for each of the component recommendations contained in the EB model and compares each element of the EB model with the current EPS model to the extent that is possible. The total cost of the EB Model using 2012-13 data is \$2.24 billion or \$360.8 million more than the 2012-13 spending for EPS.<sup>25</sup> This represents funding of \$11,899 per pupil or an increase of \$1,921 per pupil over EPS.

We ran three simulation options for the EB model as follows:

- Maintaining the current state share percentage of funding at 45.4%
- Maintaining the current RTR of 7.8 mills
- Increasing the state share percentage of EB funding to 55%<sup>26</sup>

Table 5.1 displays the impact of these options on the change in state and local funding as well as the RTR. Appendix A provides summary data for these simulations, and Appendix B provides SAU by SAU results for simulation E1.

**Table 5.1: Impact of Alternative State Share and RTR Assumptions on EB Funding**

Simulation	Change in Costs (\$ millions)			Percent of Total EB Revenues (%)		RTR (mills)
	Total	State	Local	State	Local	
E1: Current State Share	360.8	151.9	208.9	45.5	54.5	8.90
E2: Current RTR	360.8	279.8	81.0	51.0	49.0	7.80
E3: State Share at 55%	360.8	373.3	(12.5)	55.0	45.0	7.05

The simulation displays several important factors for policy makers to consider as they determine how to fund Maine's schools. First, there is a clear – and expected – relationship

<sup>25</sup> The EPS comparison assumed 97% funding of EPS plus the \$12.5 million mid year curtailment.

<sup>26</sup> In EPS, state share percentage includes SAU revenue from the state and state revenue for state-only programs/adjustments. In EB, state share percentage includes SAU revenue from the state, state revenue for state-only programs/adjustments, and the state-run pension program. In neither case are over-EPS or over-EB funds included.

between the state share percentage of funding and the local district required tax rate. Given that total revenues under the EB model increase in total by \$360.8 million, the larger the state share percentage, the lower the local share, and thus the lower the RTR necessary to fund the EB model.

If the state share percentage of 45.5% is maintained, the local tax rate increases to 8.90 mills and requires an additional \$208.9 million in local revenue to fully fund the EB – with the state funding increasing by \$151.9 million. Even if the RTR is held at the current 7.8 mills, local revenues increase by \$81.0 million. This is the result of tax rates in minimum receiver districts increasing to cover those districts' higher EB revenue. We assumed in the simulation that minimum receiver districts that currently have tax rates below 7.8 mills would increase their tax rate by the millage required to fully fund their local share of the EB, or to 7.8 mills. As a result, increases in local tax rates account for the increase in local funds. Another component of the \$81.0 million local increase is tax rate increases in districts that currently are equalized through the EPS – that is receive state funding to reach the EPS level – but do not currently levy the RTR. We assumed all of those districts would increase their tax rate to the RTR. We made that assumption because the state currently has statutes in place that will require all non-minimum receiver districts to levy the RTR within three years.

Finally it is important to note that when the state share is increased to 55% with a commensurate decrease in the RTR to 7.05 mills, local tax collections decrease by almost \$13 million with the state picking up the balance. As a result under the 55% state share option, the state's costs increase by \$13 million more than the total increase in funding for EB.

### ***Decomposing the EB Cost Increase***

One question raised in earlier discussions of the EB simulation is what are the components of the \$360.8 increase in costs? Table 5.2 shows the major factors that caused those increased costs. The first occurs because the state only funded EPS at 97% and then in mid-year reduced the appropriation by an additional \$12.5 million. If EPS had been fully funded, it would have been \$42 million higher, reducing the cost increase by that amount. Similarly there was an additional \$9 million budgeted for EPS but was not allocated to SAUs in the data we were provided. Combined, the first two lines of Table 5.2 represent \$51 million of the \$360.8 million increase between EPS as funded and 100% of the EB model as estimated for 2012-13.

Two other large cost increases are the result of the EB model providing substantially more funding for professional development (\$97 million) and for Economically Disadvantaged (ED) students (\$124 million). When combined with the \$51 million above, these two functions explain a total of \$272 million of the \$360.8 million difference.

There are two more areas where EB provides more resources than EPS. Specifically, as shown in Table 5.2, EB provides \$47 million more in its adjustment for small SAUs and the costs of PK education in the EB model are about \$10 million more than in EPS. When this \$57 million is added to the \$271 million above, the total amounts to \$329 million.

There are three areas where EB funding levels are lower than EPS. They are, ELL (-\$14 million), Gifted and Talented (-\$6 million) and the Regional Cost Adjustment (-\$45 million) for a total of -\$65 million. When subtracted from the \$349 million difference identified above, we can explain \$263 million of the \$360.8 million difference between the two models.

**Table 5.2: Components of the Increase in Costs from EPS to EB**

<b>Programmatic Element</b>	<b>Estimated Cost Differences Between EPS and EB Models (\$ Millions)</b>
Funding of EPS at 97 percent	42
Miscellaneous elements in budget not allocated to SAUs	9
Economically disadvantaged Pupils	124
Professional Development (Instructional Coaches, 5 additional days, funds for training)	97
Small SAU Adjustment	47
Preschool	10
<b>Total Major Cost Increases</b>	<b>\$329</b>
ELL	- 14
Gifted and Talented	-6
Regional Cost Adjustment	-45
<b>Total Major Cost Decreases</b>	<b>-65</b>
<b>Net Major Cost Increases and Decreases</b>	<b>\$264</b>

The difference between the \$264 and \$360.8 million consists of components we are smaller cost components or those we are not able to tease out the EPS and EB models due to lack of specificity in parts of the EPS. For example, the staffing ratios in the EPS model include Title 1 teachers that are not included in the EB staffing ratios. If the Title I teachers were eliminated in the EPS ratios, the Maine DOE estimates that the EPS model ratios would rise by about one to 1:18 for Elementary, 1:17 for Middle and 1:16 for High Schools. These figures are closer to the EB core and elective teacher ratios of 14.4:1 for elementary schools, 20.8:1 for middle schools and 18.75:1 for high schools. Moreover, if instructional coaches are included in the EB ratios, the EB ratios would decrease to approximately 13.45 for elementary schools (lower than the Title I adjusted EPS ratios), 18.9 for middle schools (slightly higher than the Title I adjusted EPS

ratio) and 17.14 for secondary schools (closer to the Title I adjusted EPS ratio). In other words, though developed using alternative approaches, the overall staffing ratios for certified teaching staff between the two models are more similar than different.

### ***Adjusting the EB model to EPS funding Levels***

One of the questions we were asked to consider by the Committee is what recommendations we would make to change the parameters of the EB model if total available funding were equal to the 2012-13 EPS funding level. Below we make some suggestions as to how we would prioritize decisions for such changes, although we want to emphasize that the EB represents our best judgment as to the level of funding necessary to meet the state's student performance standards (and the Common Core Curriculum Standards) over time and lower funding levels would likely result in slower progress toward that goal.

With that caveat, an easier way to think about this question is what components of the EB model would we add first to grow spending by the \$360.8 million over time. We emphasize that this represents the choices we would make, and that such choices should be made by the Legislature after appropriate debate and public input. That said, if we started from the EPS funding level, our funding priorities would be as follows:

- Funds for professional development – this includes five additional paid teacher professional development days, funds for instructional coaches and funds for training at each school.
- The more comprehensive program for ED students embedded in the EB model
- A more robust PK program
- The adjustments for small SAUs

As the Committee decides how to proceed, Table 5.2 shows potential EPS funding areas that could be enhanced to approximate the EB model and identifies which elements of the EB model are the largest drivers of the \$360.8 million increase.

The Committee also thought it would be helpful to develop a line-by-line comparison of the cost elements of the EPS and EB models. This is a very complex undertaking given the multitude of options available for change and the dynamic operation of both models – that is, changing one component, say the class size, impacts a number of other model components meaning that simply changing one component by some dollar amount is unlikely to change the total in either model by that same amount. Appendix E of this report provides a line-by-line comparison to the extent such is possible, and discusses in more detail the complexities of making this comparison. The purpose of the simulation we developed as part of this study, was designed to take the place of this line by line comparison process and allows the Committee – or any other policy maker with access to the model – to consider the cost implications of a wide variety of alternatives, making it far more powerful than the line by line comparison displayed in Appendix E.

## Simulation of the Committee's EB Model

Following a review of the EB simulation, and discussion of the stakeholder feedback received through the PJP and stakeholder forums, the Committee made the following four modifications to the EB model:

- Reduce the core teacher to pupil ratio to 20:1 for grades 4 and 5
- Use current per pupil allocations for technology of \$95 for (P) K-8 and \$288 for 9-12
- Increase per pupil allocations for instructional materials to \$377 for (P)K-8 and to \$466 for 9-12
- Increase gifted and talented funding to the greater of \$25 per pupil (total SAU enrollment) or the current grant funding received by the SAU for gifted programs

The total cost of the Committee EB amounts to \$2.35 billion, an increase of \$403.0 million above 2012-13 EPS funding. This is \$42.2 million more than the EB model we recommended, and represents funding of \$12,123 per pupil, an increase of \$2,145 per pupil over EPS. Table 5.3 summarizes the state/local cost changes as well as the relative shares and required tax rates to fund the Committee EB using the same three alternatives reported above:

- Maintaining the current state share of funding at 45.5%
- Maintaining the current RTR of 7.8 mills
- Increasing the state share of EB funding to 55%

**Table 5.3: Impact of Alternative State Share and RTR Assumptions on Committee EB Funding**

Simulation	Change in Costs (\$ millions)			Percent of Total EB Revenues (%)		RTR (mills)
	Total	State	Local	State	Local	
F1: Current State Share	403.0	170.8	232.1	45.5	54.5	9.06
F2: Current RTR	403.0	318.5	84.4	51.7	48.3	7.80
F3: State Share at 55%	403.0	396.2	6.7	55.0	45.0	7.18

The most noticeable difference between the cost of the Committee EB and the EB is the somewhat higher RTR required in options F1 and F3. The RTR increases to 9.06 mills to fully fund the Committee EB if the state share remains at 45.5%. If the state share percentage is increased to 55%, then the RTR increases from 7.05 under the EB to 7.18 and the local funding is \$6.7 million.

## Simulating the 100% SPED Alternative

The Committee also asked us to estimate the cost of the model at a 55% state share with the minimum receiver SAUs receiving 100% of special education funding. Table 5.4 summarizes this option that was specifically requested by Rep. Hubbell. The table shows this has a small impact on the allocation of resources statewide. The RTR to fund this option increases the state percentage share to 55.6 to fund the 100% special education minimum.

The total cost of the Committee EB with minimum receiver SAUs receiving 100% SPED funding amounts to \$2.35 billion, an increase of \$403.0 million above 2012-13 EPS funding. This represents funding of \$12,123 per pupil or an increase of \$2,145 per pupil over EPS. Table 5.4 summarizes the state/local cost changes as well as the relative shares and required tax rates to fund the Committee EB with the additional attribute of 100% SPED funding. The major difference between this simulation and the Committee EB simulation is the likely shifting of some funds from lower wealth SAUs to the minimum receivers that receive more funds with the 100% of special education serving as the minimum state funding level.

**Table 5.4: Impact of Committee EB Model with 55% State Share and 100% Special Education Funding for Minimum Receivers**

Simulation	Change in Costs (\$ millions)			Percent of Total EB Revenues (%)		RTR (mills)
	Total	State	Local	State	Local	
G1: State Share at 55% & 100% SPED to min. receivers	403.0	407.4	-4.4	55.5	45.5	7.20

## Using an Alternative Measure of Fiscal Capacity

When the Committee met on October 29, we provided them with a simulation using a multiplicative income based index as the measure of state valuation. Specifically, we used the ratio of SAU per-capita income to state median per-capita income, bounded that ratio by 0.5 and 1.5 and applied it to the state valuation. We weighted this computation at half of the adjusted valuation, with state valuation alone representing the other half of the adjusted state valuation.

On seeing the relatively small impact this had on the distribution of funds to SAUs in High Property Wealth/Low Household Income SAUs, the Committee decided to look for alternative approaches to meeting the needs of low income property tax payers in those (and potentially all) SAUs. However, the Independent Review Advisory Committee asked us to consider the impact of eliminating the bounds on the income ratio to see if that made a difference in the allocation of resources. Table 5.5 displays the results of two simulations. Both are based on the EB model. He first uses the income adjustment to state valuation weighted as half of the adjusted state



valuation computation while H2 uses 100% application of the income ratio. Simulation H1 includes bounds of 0.5 and 1.5 on the income index while simulation H2 removes those bounds. Both simulations assume the state share remains at its current 45.5 percent.

A review of the table shows very little difference between the two simulations. When the bounds on the income component of adjusted state valuation are relaxed, the distribution changes very slightly, with a tax rate variation of less than 0.09 mills. When the bounds are removed, and the tax rate shifts down, the state contribution decreases by about \$0.7 million while the local contribution increases by the same amount. The shift of \$0.7 million is small, but suggests that without bounds, some wealthy SAUs pay a slightly larger share of their EB revenues from local sources. It would appear from this exercise that the impact of the bounds on the income adjusted state valuation has very little impact on the distribution of funds, and thus the Committee's conclusion that the income adjustment for fiscal capacity will not meet the concerns they have for high property wealth/low per-capita income SAUs still holds.

**Table 5.5: Impact of Adjusting State Valuation by an Income Index using the EB Model with the current State Share of Funding**

Simulation	Change in Costs (\$ millions)			Percent of Total EB Revenues (%)		RTR (mills)
	Total	State	Local	State	Local	
H1: Bounds on Income Index	360.8	152.0	208.9	45.5	54.5	8.71
H2: No Bounds on Income Index	360.8	151.3	209.5	45.5	54.5	8.62





## CHAPTER 6: REGIONAL COST ADJUSTMENTS<sup>27</sup>

An issue that gained prominence in school finance beginning in the 1970s and remains relevant today is the difference in prices that school districts face in purchasing educational resources. Districts not only purchase a different market basket of educational goods (just as individuals purchase a different market basket of goods), but they also pay different prices for the goods they purchase. District expenditures determine quantity issues (numbers of different types of educational goods purchased, such as teachers, books, buildings, etc.), the level of quality of those goods, and the cost of or price paid for each good. The variety, number, quality, and price of all educational goods purchased determines school district (and/or school) expenditures. While “expenditures” are often referred to as “costs” in school finance parlance, there is a difference between these two economic terms. “Expenditure” refers to the money spent on school resources; “cost” refers to the money spent on school resources to receive a certain level of output or to provide a certain quality of service. So comparing just expenditures would not indicate differences in costs; the comparison would have to be for expenditures for the quality of service – or teacher.

Prices that school districts (and/or schools) face in purchasing educational resources differ across school districts, and many states, like Maine, have taken an interest in trying to adjust school aid allocations to compensate for geographic cost or price differences. For example, a teacher of a certain quality will probably cost more in an urban area, where generally costs of living are higher, than in nonurban areas, where generally costs of living are lower. But prices or cost variations that districts must pay for teachers of the same quality also differ among school districts because of variations in the nature of the work required, the quality of the working environment, and the characteristics of the local community. Teachers might accept marginally lower salaries if, for example, they teach four rather than five periods a day or have smaller classes, or if there are numerous opportunities for staff development, relative to other districts. Or teachers might want marginally higher salaries if there are few cultural opportunities in the surrounding community. The combination of differences in general cost of living, working conditions, and the amenities of the surrounding community produces differences in prices that districts must pay for teachers of a given quality.

Though several different approaches can be taken in constructing cost-of-education indices (Chambers, 1981), there is substantial correlation among price indices constructed with different methodologies (Chambers, 1981). Whatever methodology is used, price differences can vary substantially across districts. In earlier studies of California (Chambers, 1980), Missouri (Chambers, Odden, and Vincent, 1976), New York (Wendling, 1981), and Texas (Monk and Walker, 1991), within-state price variations ranged from 20 percent (10 percent above and below the average) in California to 40 percent (20 percent above and below the average) in Texas. And price ranges remain about the same according to more recent studies of Wyoming and Texas (e.g., Baker, 2005; Taylor, 2004). These are substantial differences. These results mean that high-cost districts in California must pay 20 percent more for the same educational goods as low-

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<sup>27</sup> Much of this discussion draws on Odden and Picus, 2014.

cost districts; thus, with equal per-pupil revenues, high-cost districts are able to purchase only 75 percent of what low-cost districts can purchase. The differences in Texas are even greater. Such price differences, caused by circumstances and conditions essentially outside the control of district decision makers, qualify as a target for adjustments in some state aid formulas.

In early 2001, Fowler and Monk (2001) created a primer on how to develop price indices in education, using largely the hedonic index approach. Shortly after this primer was developed, however, a new approach to developing geographic adjustments for teacher salaries entered into school finance scholarly and policy debates. Rather than using the hedonic approach, which had been used for the preceding 30 years, the new method takes a “comparable wage” approach. Under this new approach, the adjustment for teachers is taken from salary variations in occupations other than teaching (for a recent study, see Taylor, 2010). Taylor and Fowler (2006) used all occupations requiring a bachelor’s degree or greater while Imazeki (2006) used salaries only for occupations that were similar to teaching. Imazeki’s analysis showed, moreover, that the indices produced for all occupations were different from those produced only for occupations similar to teachers.

States can take two different approaches in using a price or cost-of-education index. First, state aid can be multiplied by the price index, thus ensuring that equal amounts of state aid will purchase equal amounts of educational goods. But this approach leaves local revenues unadjusted by price indices. A better method is to multiply the major elements of a school aid formula by the price index to ensure that total education revenues can purchase the same level of resources. Thus, the price index is applied to the foundation expenditure level in a foundation program, the tax base guaranteed by the state in a GTB program, the state-determined spending level in a full-state-funding program, or total current operating expenditures for a percentage equalizing formula.

As such, including a price index in a school finance formula is relatively simple. And the National Center for Education Statistics (NCES) has recently produced comparative wage indices that can be used for all districts and all states, including Maine (Taylor and Fowler, 2006) with updated figures for 2011 (at [http://bush.tamu.edu/research/faculty/taylor\\_CWI/](http://bush.tamu.edu/research/faculty/taylor_CWI/)) with documentation and a users’ guide.

While the existence of the NCES price indices alleviates the need for analysis, price indices do alter the distribution of state aid. In general, education price indices are higher in urban and metropolitan areas than in rural areas. Thus, with a given amount of state aid, use of a price index shifts the shares of state aid at the margin from rural to urban school districts. This distributional characteristic injects an additional dimension to constructing a politically viable state aid mechanism. Nevertheless, prices vary across school districts and affect the real levels of education goods and services that can be purchased. Including an education price index in the school aid formula is a direct way to adjust for these circumstances that are outside the control of school district policymakers.

Maine currently uses a regional adjustment factor that was developed, using 2004-05 data, for 35 geographic regions in the state and compares the average teacher salary in the region to the state average.

The index represents the differences in teacher salaries at the time that it was developed whether the differences were caused by different local choices on teacher salary levels, differences in the ability to raise educational revenues and pay teachers or differences in the purchasing power of the education dollar. The EB approach suggests that Maine develop either an Hedonic wage index or a Comparable Wage Index, or use those indices that have been developed by the NCES, instead of the current regional cost adjustment in the formula.

Our model allows simulation of alternative Cost of Education (CEI) adjustments. The examples in Chapter 5 above all use a CWI developed by NCES in 2011. Table 6.1 displays the results of the EB simulation using the Maine Regional Cost Adjustment in place of the CWI. The first thing one should note is that the use of Maine's index reduces the additional cost of the EB by \$44.8 million to \$316.1 million over EPS. Maintaining the current state share of 45.5% requires a slightly lower RTR of 8.72 mills (compared to 9.06 mills for the EB with the CWI).

**Table 6.1: Outcome of EB Model with Maine CEI and State Share at Current Level of 45.5%**

Simulation	Change in Costs (\$ millions)			Percent of Total EB Revenues (%)		RTR (mills)
	Total	State	Local	State	Local	
J1: Maine CEI, State Share 45.5%	316.1	130.6	185.5	45.5	54.5	8.72

However, buried in these data are potentially substantial differences in the impact the index will have on individual SAUs. The best way to estimate this is to compare the value of the index across all three possibilities, the Maine Regional Cost Adjustment, the 2006 NCES CWI and the 2011 NCES CWI. Table 6.2 provides the index values for all three indexes for all SAUs in Maine. The impact on an individual SAU can be determined by comparing the value for the Maine Regional Cost Adjustment to the other two. If an alternative index is higher, the district will gain more revenue under the alternative, if the value is lower, then the district will gain more revenue under the Maine Regional Cost Adjustment.

**Table 6.2: Comparison of Regional Cost Adjustments for Maine SAUs**

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1000	Acton School Department	1.03	1.12	1.11
1001	Alexander School Department	0.96	0.91	0.91
1004	Appleton School Department	1.00	0.96	0.96
1007	Auburn School Department	0.98	1.08	1.08
1008	Augusta Public Schools	0.95	0.99	0.99
1009	Baileyville School Department	0.96	0.91	0.91
1010	Bancroft School Department	0.88	0.91	0.91
1011	Bangor School Department	1.02	1.06	1.09
1012	Bar Harbor School Department	0.93	0.96	0.96
1014	Beals School Department	0.84	0.91	0.91
1015	Beddington School Department	0.84	0.91	0.91
1016	Biddeford School Department	1.09	1.12	1.11
1017	Blue Hill School Department	0.95	0.96	0.96
1018	Bowerbank School Department	0.95	1.06	1.09
1020	Bremen School Department	1.03	1.00	1.00
1021	Brewer School Department	1.02	1.06	1.09
1022	Bridgewater School Department	0.90	0.91	0.91
1023	Bristol School Department	1.03	1.00	1.00
1024	Brooklin School Department	0.95	0.96	0.96
1025	Brooksville School Department	0.95	0.96	0.96
1026	Brunswick School Department	1.02	1.12	1.11
1028	Calais School Department	0.96	0.91	0.91
1029	Cape Elizabeth School Department	1.08	1.12	1.11
1031	Carroll Plt School Department	0.86	1.06	1.09
1032	Castine School Department	0.95	0.96	0.96
1033	Caswell School Department	0.90	0.91	0.91
1035	Charlotte School Department	0.96	0.91	0.91
1038	Cooper School Department	0.96	0.91	0.91
1039	Coplin Plt School Department	0.96	0.99	0.99
1040	Cranberry Isles School Department	0.93	0.96	0.96
1041	Crawford School Department	0.96	0.91	0.91
1043	Damariscotta School Department	1.03	1.00	1.00
1045	Deblois School Department	0.84	0.91	0.91
1046	Dedham School Department	0.94	0.96	0.96
1047	Dennistown Plt School Department	1.03	0.99	0.99
1048	Dennysville School Department	0.84	0.91	0.91
1050	Drew Plt School Department	0.88	1.06	1.09

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1052	East Millinocket School Department	0.88	1.06	1.09
1053	Easton School Department	0.90	0.91	0.91
1054	Eastport School Department	0.84	0.91	0.91
1055	Edgecomb School Department	1.02	1.00	1.00
1057	Falmouth School Department	1.08	1.12	1.11
1058	Fayette School Department	0.95	0.99	0.99
1061	Georgetown School Department	1.02	1.12	1.11
1062	Gilead School Department	0.93	0.99	0.99
1064	Glenwood Plt School Dept.	0.88	0.91	0.91
1065	Gorham School Department	1.08	1.12	1.11
1067	Grand Isle School Department	0.99	0.91	0.91
1068	Grand Lake Stream Plt School Dept	0.96	0.91	0.91
1069	Greenbush School Department	0.89	1.06	1.09
1070	Greenville School Department	0.95	1.06	1.09
1073	Harmony School Department	0.94	0.99	0.99
1074	Hermon School Department	1.02	1.06	1.09
1076	Highland Plt School Department	1.03	0.99	0.99
1077	Hope School Department	1.00	0.96	0.96
1078	Isle Au Haut School Department	0.95	0.96	0.96
1079	Islesboro School Department	1.01	0.96	0.96
1081	Jefferson School Department	0.95	1.00	1.00
1082	Jonesboro School Department	0.84	0.91	0.91
1083	Jonesport School Department	0.84	0.91	0.91
1084	Kingsbury Plt School Department	0.94	1.06	1.09
1085	Kittery School Department	1.06	1.12	1.11
1086	Lakeville School Department	0.86	1.06	1.09
1088	Lewiston School Department	0.98	1.08	1.08
1090	Lincoln Plt School Department	0.93	0.99	0.99
1091	Lincolnvile School Department	1.01	0.96	0.96
1092	Lisbon School Department	0.98	1.08	1.08
1094	Frenchboro School Department	0.95	0.96	0.96
1095	Machias School Department	0.84	0.91	0.91
1096	Macwahoc Plt School Dept	0.88	0.91	0.91
1097	Madawaska School Department	0.99	0.91	0.91
1102	Marshfield School Department	0.84	0.91	0.91
1104	Meddybemps School Department	0.96	0.91	0.91
1105	Medway School Department	0.88	1.06	1.09
1106	Milford School Department	1.02	1.06	1.09

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1107	Millinocket School Department	0.88	1.06	1.09
1109	Monhegan Plt School Dept	1.03	1.00	1.00
1112	Mount Desert School Department	0.93	0.96	0.96
1114	Nashville Plt School Department	0.90	0.91	0.91
1115	Newcastle School Department	1.03	1.00	1.00
1116	New Sweden School Department	0.90	0.91	0.91
1117	Nobleboro School Department	1.03	1.00	1.00
1118	Northfield School Department	0.84	0.91	0.91
1121	Orient School Department	0.96	0.91	0.91
1124	Orrington School Department	1.02	1.06	1.09
1125	Otis School Department	0.93	0.96	0.96
1127	Pembroke School Department	0.84	0.91	0.91
1128	Penobscot School Department	0.95	0.96	0.96
1129	Perry School Department	0.84	0.91	0.91
1132	Pleasant Ridge Plt School Dept	0.93	0.99	0.99
1134	Portland Public Schools	1.08	1.12	1.11
1135	Long Island School Department	1.08	1.12	1.11
1136	Princeton School Department	0.96	0.91	0.91
1141	Reed Plt School Department	0.88	0.91	0.91
1143	Robbinston School Department	0.96	0.91	0.91
1145	Roque Bluffs School Department	0.84	0.91	0.91
1148	Sanford School Department	1.03	1.12	1.11
1149	Scarborough School Department	1.08	1.12	1.11
1150	Sedgwick School Department	0.95	0.96	0.96
1151	Shirley School Department	0.95	1.06	1.09
1153	South Bristol School Department	1.03	1.00	1.00
1154	Southport School Department	1.03	1.00	1.00
1155	South Portland School Department	1.08	1.12	1.11
1156	Southwest Harbor School Department	0.93	0.96	0.96
1159	Surry School Department	0.93	0.96	0.96
1160	Talmadge School Department	0.96	0.91	0.91
1161	The Forks Plt School Dept	1.03	0.99	0.99
1162	Tremont School Department	0.93	0.96	0.96
1163	Trenton School Department	0.93	0.96	0.96
1164	Upton School Department	0.93	0.99	0.99
1165	Vanceboro School Department	0.96	0.91	0.91
1166	Vassalboro School Department	0.95	0.99	0.99
1168	Waite School Department	0.96	0.91	0.91

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1170	Waterville Public Schools	0.97	0.99	0.99
1173	Wesley School Department	0.84	0.91	0.91
1175	Westbrook School Department	1.08	1.12	1.11
1176	Westmanland School Department	0.90	0.91	0.91
1179	Whitneyville School Department	0.84	0.91	0.91
1180	Willimantic School Department	0.95	1.06	1.09
1183	Winslow Schools	0.97	0.99	0.99
1185	Winthrop Public Schools	0.95	0.99	0.99
1187	Woodland School Department	0.90	0.91	0.91
1188	Woodville School Department	0.88	1.06	1.09
1190	Yarmouth Schools	1.08	1.12	1.11
1191	York School Department	1.06	1.12	1.11
1192	Baring Plt School Department	0.96	0.91	0.91
1193	Medford School Department	0.95	1.06	1.09
1194	Carrabassett Valley School Department	0.96	0.99	0.99
1195	Beaver Cove School Department	0.95	1.06	1.09
1196	RSU 79/MSAD 01	0.90	0.91	0.91
1197	RSU 03/MSAD 03	0.97	0.96	0.96
1198	RSU 80/MSAD 04	0.95	1.06	1.09
1200	RSU 06/MSAD 06	1.08	1.12	1.11
1201	RSU 07/MSAD 07	1.00	0.96	0.96
1202	RSU 08/MSAD 08	1.00	0.96	0.96
1204	MSAD 10	0.99	0.91	0.91
1205	RSU 11/MSAD 11	0.95	0.99	0.99
1206	RSU 82/MSAD 12	1.03	0.99	0.99
1207	RSU 83/MSAD 13	1.03	0.99	0.99
1208	RSU 84/MSAD 14	0.96	0.91	0.91
1209	RSU 15/MSAD 15	1.08	1.12	1.11
1211	RSU 17/MSAD 17	0.94	0.99	0.99
1213	RSU 85/MSAD 19	0.84	0.91	0.91
1214	RSU 86/MSAD 20	0.90	0.91	0.91
1216	RSU 22/MSAD 22	1.02	1.06	1.09
1217	RSU 87/MSAD 23	0.89	1.06	1.09
1218	RSU 88/MSAD 24	0.99	0.91	0.91
1221	MSAD 27	0.99	0.91	0.91
1222	RSU 28/MSAD 28	1.00	0.96	0.96
1223	RSU 29/MSAD 29	0.88	0.91	0.91
1224	RSU 30/MSAD 30	0.86	1.06	1.09



<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1225	RSU 31/MSAD 31	0.86	1.06	1.09
1226	RSU 32/MSAD 32	0.90	0.91	0.91
1227	RSU 33/MSAD 33	0.99	0.91	0.91
1229	RSU 35/MSAD 35	1.06	1.12	1.11
1231	RSU 37/MSAD 37	0.84	0.91	0.91
1234	RSU 40/MSAD 40	1.00	0.96	0.96
1235	RSU 41/MSAD 41	0.95	1.06	1.09
1236	RSU 42/MSAD 42	0.90	0.91	0.91
1238	RSU 44/MSAD 44	0.93	0.99	0.99
1239	RSU 45/MSAD 45	0.90	0.91	0.91
1240	MSAD 46	0.94	1.06	1.09
1243	RSU 49/MSAD 49	0.97	0.99	0.99
1245	RSU 51/MSAD 51	1.08	1.12	1.11
1246	RSU 52/MSAD 52	0.98	1.08	1.08
1247	RSU 53/MSAD 53	0.97	0.99	0.99
1248	RSU 54/MSAD 54	1.03	0.99	0.99
1249	RSU 55/MSAD 55	0.94	0.99	0.99
1251	RSU 57/MSAD 57	1.03	1.12	1.11
1252	RSU 58/MSAD 58	0.96	0.99	0.99
1253	RSU 59/MSAD 59	1.03	0.99	0.99
1254	RSU 60/MSAD 60	1.06	1.12	1.11
1255	RSU 61/MSAD 61	0.94	1.12	1.11
1257	RSU 63/MSAD 63	1.02	1.06	1.09
1258	RSU 64/MSAD 64	0.89	1.06	1.09
1259	RSU 65/MSAD 65	1.00	0.96	0.96
1261	RSU 68/MSAD 68	0.95	1.06	1.09
1262	RSU 70/MSAD 70	0.88	0.91	0.91
1264	RSU 72/MSAD 72	0.94	0.99	0.99
1265	RSU 74/MSAD 74	1.03	0.99	0.99
1266	RSU 75/MSAD 75	1.02	1.12	1.11
1267	MSAD 76	0.95	0.96	0.96
1270	Indian Island	1.02	0.99	0.99
1271	Indian Township	1.02	1.00	1.00
1272	Pleasant Point	1.02	0.99	0.99
1281	Boothbay-Boothbay Hbr CSD	1.03	1.00	1.00
1283	Mt Desert CSD	0.93	0.96	0.96
1284	Airline CSD	0.93	0.96	0.96
1288	East Range CSD	0.96	0.91	0.91

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
1289	Deer Isle-Stonington CSD	0.95	0.96	0.96
1290	Great Salt Bay CSD	1.03	1.00	1.00
1292	Moosabec CSD	0.84	0.91	0.91
1293	Wells-Ogunquit CSD	1.09	1.12	1.11
1294	Five Town CSD	1.00	0.96	0.96
3104	Lake View Plt. School Department	0.95	1.06	1.09
3106	West Forks Plt School Department	1.03	0.99	0.99
3109	Seboeis Plt School Department	0.86	1.06	1.09
3129	East Machias School Department	0.84	1.00	1.00
3130	Lowell School Department	0.86	1.00	1.00
3131	Caratunk School Department	1.03	1.00	1.00
3136	Cutler School Department	0.84	1.00	1.00
3137	Machiasport School Department	0.84	1.00	1.00
3138	Whiting School Department	0.84	1.00	1.00
3149	Chebeague Island School Department	1.08	1.00	1.00
3152	RSU 01 - LKRSU	1.02	1.12	1.11
3156	RSU 02	0.97	1.03	1.02
3157	RSU 04	0.98	1.08	1.07
3158	RSU 05	1.08	1.11	1.10
3159	RSU 10	0.93	0.99	0.99
3160	RSU 12	0.98	0.99	0.99
3161	RSU 13	1.00	1.00	1.00
3162	RSU 14	1.08	1.12	1.11
3163	RSU 16	0.98	1.08	1.08
3164	RSU 18	0.97	0.99	0.99
3165	RSU 19	0.94	1.06	1.09
3166	RSU 20	1.01	0.96	0.96
3167	RSU 21	1.09	1.12	1.11
3168	RSU 23	1.09	1.12	1.11
3169	RSU 24	0.93	0.96	0.96
3170	RSU 25	0.94	0.96	0.96
3171	RSU 26	1.02	1.06	1.09
3172	RSU 34	1.02	1.06	1.09
3173	RSU 38	0.96	0.99	0.99
3174	RSU 39	0.90	0.91	0.91
3175	RSU 67	0.86	1.06	1.09
3184	RSU 78	0.96	0.99	0.99
3198	RSU 73	0.96	1.04	1.03

<b>SAU ID (MEDMS)</b>	<b>SAU Name</b>	<b>Cost Adjustments ME Cost Index</b>	<b>CWI (2006)</b>	<b>CWI (2011)</b>
3199	RSU 50	0.88	0.95	0.95
3206	RSU 09	0.96	0.99	0.99
3208	Portage Lake	1.00	0.91	0.91

Sources include ME Cost Index: DOE file, RegionalSalaryCostIndex\_StarksPortLake.xls; CWI (2006): <http://nces.ed.gov/edfin/adjustments.asp>; CWI (2011): [http://bush.tamu.edu/research/faculty/taylor\\_CWI/](http://bush.tamu.edu/research/faculty/taylor_CWI/).

## CHAPTER 7: CONCLUSIONS

This report (along with our Part 1 Report)<sup>28</sup> provides the findings from our 14-month study of Maine's EPS funding system. The two reports describe the work we have undertaken to describe the current operation of Maine's school funding system and help state policy makers consider options to the current EPS funding system. We begin by restating the conclusions from Part 1 of our study followed by the conclusions for this report.

### SUMMARY OF FINDINGS FROM PART 1 OF THE STUDY

*Overall, we found that the Maine's per pupil expenditures for K-12 education are among the highest in the United States – although they are comparatively low among the six New England States. Moreover, the distribution of revenues to local districts (SAUs) meets accepted levels of equity based on current school finance literature. While expenditures have grown in recent years, student performance has been relatively flat. Test scores compared to the rest of the country are relatively strong but about average in comparison with the other states in New England. The system operates well, but we identified a number of issues the state may want to consider as it moves forward in its efforts to improve learning for all children in its public schools.*

#### Comparison with Other States

The findings from our interstate comparison can be summarized as follows:

##### *Educational Expenditures*

- From 1999-2000 to 2009-2010, state and local revenue for public K-12 education in Maine grew from \$1.62 billion to \$2.35 billion - an increase of just over \$728.6 million or 45%. During the same time period, state and local revenue for K-12 education in all 50 states increased by 49.4% (\$171.6 billion). (U.S. Census, 2012)
- Between 1999-2000 and 2009-2010, Maine's per pupil expenditures grew from \$7,595 to \$12,259-an increase of 61.4%. Average per pupil expenditures on a national level increased from \$6,836 to \$10,600- a 55.1% increase during this same time period. (U.S. Census, 2012)

##### *Student Population*

- Maine has experienced a decrease in student population of 20,533 (10%) over the past

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<sup>28</sup> An Independent Review of Maine's Essential Programs and Services Funding Act: Part 1. Available at: <http://www.maine.gov/legis/opla/EPSReviewPart1%28PicusandAssoc%20%294-1-2013.pdf> and at [http://picusodden.com/wp-content/uploads/2013/09/Review\\_of\\_Maines\\_Essential\\_Programs\\_and\\_Services\\_Program\\_-\\_Part\\_1.pdf](http://picusodden.com/wp-content/uploads/2013/09/Review_of_Maines_Essential_Programs_and_Services_Program_-_Part_1.pdf)

decade (2001-2002 to 2011-2012).

- Average SAU size has declined to 808 students – making the state’s SAUs the 4<sup>th</sup> smallest in the nation with an average enrollment that is 25.4% the size of the average school district in the United States.

### *Staffing*

- Maine has seen an increase in the number of new teachers and a slight reduction in the number of administrators in the past decade.
- When combined with the decline in student enrollments, Maine has one of the lowest student to teacher ratios in the country. The reduced student-to-teacher ratios are a major cause of the state’s increases in per pupil expenditures.

### *Student Achievement*

- In 2011, Maine’s student test results on the National Assessment of Educational Progress (NAEP) in math and reading were mixed when compared to other states
- Maine has a four-year high school graduation rate of 79.9% which is 4.4% above the national average but trails many comparable states. Maine’s New England Common Assessment Program (NECAP) test results have been flat over the past two years and trail the scores of students in New Hampshire and Vermont in math, reading and writing in all grades.

### **Equity Analysis**

Maine has designed a school funding system that provides SAUs with an equitable distribution of resources. However, the differential ability of SAUs to raise funds above what the system requires somewhat reduces the fiscal neutrality and the equity of the system. The funding disparities appear to be based more on fiscal capacity than variation in student needs.

Overall, two patterns consistently emerge from our equity analysis of the Maine school funding system. First, we found that the system, as designed, met (or very nearly) met all of the strict benchmarks established by Odden and Picus (2014) for fiscal neutrality and equity. This finding held when we used multiple measures of both property wealth per pupil and per capita income, and when we used both weighted and unweighted pupil counts in the analysis.

The second important pattern relates to reductions in the equity and fiscal neutrality of the system when we included local revenue raised through property taxes above the level of EPS funding. The revenue equality statistics indicate that funding disparities in Maine arise to a large degree from wealth disparities across SAUs whether measured on the basis of property wealth per pupil or median per capita income. One approach for mitigating this reduction in equity is to add a second equalized tier to the school funding formula, by providing percentage power equalization or a guaranteed tax base to equalize property taxes above the required rate to fund

the required local contribution to the EPS. This would provide aid in inverse relation to an SAU's wealth for decisions to increase taxes to fund expenditures above the EPS level.

Another important finding relates to the vertical equity of the system. The equity of the system changes very slightly for the worse when student counts were weighted by student needs, which implies that the funding disparities were not attributable to meeting the special needs of at risk students. This finding suggests that the state might want to consider new ways of providing funds to SAUs in order to help them meet the needs of their neediest students.

## **Tribal Funding**

Our primary finding from an assessment of Tribal funding in Maine and across the United States is that each state has its own approach for funding schools for Native American children. These approaches rely on a combination of state and Federal sources and are hard to compare across states. If Maine wants to provide more funds for indigenous students, the state could encourage SAUs to take advantage of available Title VII funds. As of 2010, there were 16 SAUs with between 10 and 20 American Indian students enrolled (not including those who identify as American Indian and another race under "two or more races"), only one of which we can confirm is receiving either Title VII or Johnson -O'Malley (JOM) funds. There are 13 SAUs with between 21 and 50 indigenous students (again, not including those who designate themselves as American Indian and another race), only 4 of which have JOM or Title VII-funded programs. Finally, of the five SAUs that enroll over 50 American Indian students, three are part of Maine Indian Education, while two, Calais and Bangor, are not. In particular, the growing number of Indian students in Bangor should be served, as well as those in Calais. Those SAUs could apply on their own or collaborate with one or more of the tribes in Maine; there is no requirement that the American Indians served under these funds be enrolled in any specific tribe.

Likewise, SAUs could collaborate with tribes to extend services under Johnson-O'Malley funding, if the tribes were willing. There is no requirement that students be enrolled in the tribe providing the services, just that they be eligible by the criteria described above. In Anchorage, Alaska, Cook Inlet Tribal Council serves any American Indian or Alaska Native student in their Johnson-O'Malley programs in Anchorage, regardless of their enrolled tribe, so long as they are eligible for the services. This may not be financially viable under the current JOM funding scheme, but it appears that the program may be revived and expanded. The state and its tribes should monitor the efforts to increase JOM funding at the national level and make sure that accurate counts of eligible children are provided to the Bureau of Indian Affairs.

Our specific findings related to tribal funding include:

- The three Maine Indian Education schools appear to receive per pupil revenues that are substantially higher than the state average funding level.
- The mix of state and federal funding for the tribal schools in Maine is set by the Maine Indian Claims Settlement Act of 1980. It would require tribal and federal agreement to modify the Act.

- Most Maine SAUs that are eligible for Title VII funds (districts serving 10 or more American Indian/Alaska Native students) do not receive the funds. SAUs could apply for these moneys, generally about \$300 per student, which are supplemental and can be used for a broad array of approaches to support indigenous students.
- The state of Maine should decide whether or not to provide a different set of options for secondary students exiting the tribal schools, depending on whether there is evidence about whether these students are succeeding in high school.
- The Committee may want to study spending patterns in the tribal schools more closely.

## **Comparison of EPS with EBM**

In Chapter 6 we provided a side-by-side comparison of the elements of Maine’s EPS with the elements of the Evidence Based Model (EB) that we have developed for use in other states. We also provide the research basis surrounding each individual issue<sup>29</sup>.

The EB model uses a similar structure and approach to that used by the EPS in Maine. The EB model provides resources to meet all seven Learning Results categories in Maine and provides additional resources that in our view establish a comprehensive education system as called for in the Resolve. The EB model provides sufficient resources for all schools to offer a full liberal arts curriculum that offers an education program designed to meet college and career standards for all students. The EB approach is also sufficient to allow schools in Maine – if they use the resources in the most effective manner and organize teachers into collaborative groups – to dramatically increase student achievement on standardized performance tests such as the NECAP. Examples of resources that are included in the EB, but are not specifically included in the EPS, include career and technical education, gifted and talented education and co-curricular activities.

The comparisons provided in Chapter 6 show a number of differences in the specific staffing ratios for different grade levels, educational programs and support services, and differences in per pupil funding levels for certain resources. It appears that in some instances the cost of EPS exceeds the EB and in others the reverse is true – EB costs exceed those of the EPS. The simulation we developed provides estimates of the cost differences by specific program area. Examples of areas where EB funding exceeds EPS include an ongoing, systemic and comprehensive professional development program and more extra help resources for at-risk students. We recommend that the Committee assess the differences and similarities between the EB and the EPS, as well as the cost differences between the two identified in Part 2 of this project.

We developed a Microsoft Excel based simulation model that generates estimates of per pupil costs for general education as well as specialized programs for at risk students. The model also estimates site leadership costs, SAU office costs and the costs of operations and maintenance. We used this model to estimate total costs of the EB compared to the EPS model, impacts by

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<sup>29</sup> Readers interested in more detail on the EB should review our textbook, *School Finance: A Policy Analysis*, 5<sup>th</sup> Edition. (Odden & Picus, 2014).

deciles of property wealth per pupil, per capita income and SAU size (i.e., number of pupils). The simulation also includes a district-by-district (SAU) comparison of how our core EB model compares to the EPS, and variations of the EB model suggested during our meetings with the Committee and with stakeholders and professional judgment panels in Maine.

## **Teacher Compensation**

We reviewed the current teacher compensation system in Maine and reviewed other state and SAU level teacher compensation reforms focused on improving teacher effectiveness.

Unfortunately, many of these initiatives have not been carefully studied so the strengths and weaknesses of each are hard to discern. With that context in mind, we reached the following conclusions about teacher compensation issues in Maine:

- Maine’s goal of providing regional adjustments for teacher salary differences is appropriate but the index currently in use does not appropriately control for teacher quality. As a result, it provides more resources for SAUs that have chosen to pay higher salaries in the past and fewer resources to SAUs that paid lower salaries in the past. As a result, all SAUs do not have an equal opportunity to recruit and retain effective teachers.
- State efforts to provide incentives for hard to staff subjects and hard to staff schools, including signing bonuses, have been largely ineffective. Reasons for this appear to be:
  - The incentives are often too low.
  - The incentives are seldom accompanied by aggressive recruitment efforts.
  - An “effectiveness” screen is frequently missing, resulting in both effective and ineffective teachers receiving the incentives.
  - States have not conducted studies to assess implementation and impact of the incentive programs. Consequently policy makers don’t know whether or not the programs were successful.
- Most state efforts to decentralize the design of teacher pay incentives as well as the more ambitious performance pay systems have produced disappointing results.
- Recently adopted teacher evaluation systems that allow local SAUs to set “cut points” for determining different teacher effectiveness categories have not yet been shown to be effective.
- The current teacher salary structure in Maine, which like most salary structures provides pay increases based on years of experience and education, is not linked to teacher effectiveness, with the possible exception of the first two to four years of a teacher’s career.

As a result of these findings, we offer the following recommendations:

1. Maine should replace its approach to providing regional adjustments to teacher salary levels and shift to either a Comparable Wage Index or a Hedonic Wage Index. The goal of these



regional adjustments is to modify resource levels so each SAU is able to purchase educators of the same quality. In contrast, the current approach essentially reinforces prior salary level decisions by SAUs by using actual salaries. As a result, SAUs that pay higher salaries are provided more funds and SAUs that pay lower salaries are provided fewer funds, reinforcing those differences rather than adjusting for them. Both the CWI and the Hedonic Wage Index provide regional adjustments for salaries, but those adjustments are calibrated to allow each SAU to hire educators of the same quality.

2. To determine if current teacher salaries are at the appropriate market level, Maine should benchmark teacher salaries to salaries in Maine for jobs that are comparable to teaching, not to other states or the national average.
3. Maine should be more strategic in recruiting and retaining effective teachers by shifting its teacher salary structure from the current system based on years of experience and education – which is not strongly linked to effectiveness – to an alternative approach such as the Odden-Picus Salary Schedule. The new structure should provide major salary increases when a teacher’s instructional effectiveness improves. Maine could use the results from its current efforts to change how teachers are evaluated to operate such a structure, but we would further recommend that the state, not local SAUs, set the cut-points for the various effectiveness levels, with the recommendation that the lower bound for the effective category be set no lower than the 35th-40th percentile.
4. If, even with these changes, some SAUs continue to have difficulty staffing some schools or subject areas, Maine could provide additional incentives for hard to staff subjects or hard to staff schools. We recommend initial incentives in the \$5,000-6,000 range for teachers moving to new schools or SAUs. We also recommend that teachers who have more than five years of experience would be eligible for the incentive only if they had a performance rating of “effective” or better. Once in the new school or SAU, we recommend ongoing retention incentives of \$4,000 per year, paid as a bonus at the beginning of the year. An incentive program like this should be accompanied by a comprehensive recruitment program making aggressive recruitment an integral component of the program. Finally, we recommend that the state fund ongoing analyses of the implementation and impact of the incentive programs to determine whether they are working to move effective teachers into hard to staff schools and subjects and to retain them at those sites.
5. If Maine decides to create any of these compensation incentives, the key features should be developed at the state level. Nearly all other states that have devolved the design of performance pay incentives to local SAUs have not been satisfied with the results.

## **SUMMARY OF FINDINGS FROM PART 2 OF THE STUDY**

Part 1 of our study was an analysis of Maine’s current EPS funding system. In Part 2 we focused on alternatives the State may want to consider as it reviews the EPS system and seeks to ensure

adequate funding so all Maine Pre-K to 12 students can meet the Common Core Curriculum Standards. We considered a number of issues as requested by the Committee including:

- An analysis of alternative measures of fiscal capacity (Chapter 2)
- Stakeholder feedback on EPS and our EB model through Professional Judgment Panels and Stakeholder Forums (Chapter 3)
- Case studies of improving schools (Chapter 4)
- Development of a simulation model that allows policy makers to understand:
  - The total and SAU by SAU cost of alternative EB models
  - The distributional effects of alternative measures of state valuation
  - The state cost and property tax implications of alternative state percentage shares of EB funding (Chapter 5)
- The policy issues and cost implications of alternative regional cost adjustments in the funding model (Chapter 6)

### **Alternative Measures of Fiscal Capacity**

A major concern in Maine revolves around the distribution of the tax burden for paying for schools. Specifically, there are a number of SAUs with very high state valuation (property value) per pupil due to their location such as along Maine's coast, or near Moosehead Lake. Moreover there are many who argue that the year-round residents of many of these communities have relatively low incomes and as a result have excessive property tax burdens. We were asked to identify possible solutions to the problems of these SAUs, which we identified as High Property Wealth/Low Per-Capita Income (HPW/LHI) SAUs. The question we sought to answer was whether or not there was a way to accommodate the concerns of such SAUs in the design of the distribution formula to fund either the EB or the EPS.

As part of the distribution model we developed (and describe in detail in Chapter 5) we programmed the capacity to include per capita income in the measure of state valuation per pupil used to distribute state and local funds to SAUs. Specifically we developed a multiplicative index that multiplies the ratio of a SAU's per capita income to the state average income times the per pupil state valuation of that SAU. The result of this computation is SAUs with above average per capita income have a higher per pupil state valuation for computation of state and local funding shares, while SAUs with below average per capita income would have a lower state valuation per pupil for the purpose of computing state and local funding shares.

We simulated the distribution effects of our base EB model using the income index as part of the measure of state valuation and found a number of changes in the shares of state and local funds in the SAUs though little change in statewide figures. This led us to conclude that trying to solve the problems of HPW/LHI SAUs through the school funding formula would be difficult and likely very expensive. In discussions with the Committee, we recommended that they consider a circuit breaker approach to focus the assistance more directly on low-income households.

## Professional Judgment Panels

An important component of the study was gathering stakeholder input to the design of Maine's school funding model. We accomplished this through a weeklong series of Professional Judgment Panels (PJP) and a series of evening stakeholder forums. On July 16, 17 and 18, 2013, our firm conducted five PJP sessions and four stakeholder forums. We conducted a PJP and a forum in Presque Isle (July 16), Farmington (July 17) and Bangor (July 17) and two PJPs and a forum in Portland (July 18). The task for the PJPs was to provide input and commentary on the details of the EPS and EB approaches for the purpose of recalibrating the EPS formula. The purpose of the Forums was to gather commentary on any issues related to Maine's school funding system. We believe that the PJPs and Stakeholder Forums provided significant new information that will help the Legislature review and evaluate Maine's school funding structure.

Overall, the feedback we received can be summarized in eight major areas as follows. These are presented without any specific recommendation as general background. They are in no particular order of importance.

1. There was general dissatisfaction with the state's implementation of the voter-approved mandate that the state fund 55 percent of the EPS. This dissatisfaction was twofold: participants in both the PJPs and Forums wanted a clearer definition of what is included in the EPS, and there was unanimous support that the state meet its legal commitment to fully fund 55 percent of the EPS.
2. There was concern that while the EPS was initially intended to define a "minimum" level of school funding, over time the EPS has become the "maximum" amount of support for schools in the eyes of many citizens. There was the hope that recalibration of the EPS could move beyond a minimum, and perhaps to a more comprehensive approach that provides sufficient resources for Maine's educators to offer instruction in all of Maine's Learning Results. Participants also recognized the need to educate a large portion of students to the new proficiency expectations of the Common Core Curriculum Standards.
3. The state's approach to funding transportation services should be re-assessed. Many felt the current approach was insufficient and given the recommendations in the EB model for expanded before and after school and summer school programming, the need for transportation and related funding becomes more urgent.
4. There was significant interest and concern about the issue of high property wealth and low household income SAUs and how the state's school funding system and its overall tax system could be designed to recognize these anomalies.
5. There was general dissatisfaction with the current regional cost adjustment in the EPS formula.
6. There was significant concern, by teachers in particular, that the state may be moving toward a teacher compensation system that includes performance pay (or what some

Maine educators called “merit pay”). The concern centers mainly on the way performance would be measured and a perception that such a system would undermine collaboration if only certain teachers could attain a higher level of pay.

7. Several individuals made proposals to make the EPS formula more transparent regardless of how it is modified in the future. They suggested placing the components and formulas on the web and making it easy to see how each SAU’s EPS funding is calculated.
8. There was dissatisfaction with the uncertainty that surrounds the establishment of the required local property tax rate each year. Concerns focused on the variation in the tax rate and the lateness in the budget cycle at which the final rate was established. Participants at both PJP and Stakeholder Forums felt uncertainties complicated their ability to engage in long term planning and budgeting.

The PJPs strongly supported the following components of the EB model:

- a. Preschool staffing and funding for full day programs
- b. Resources for professional development
- c. Resources for economically disadvantaged students
- d. Elimination of instructional aides and provision of professional teachers to provide extra help for struggling students.

The PJPs also suggested several Maine specific modifications to the EB model which we support. These include:

- a. In place of the EB model’s use of one overall weight for special education students, the PJPs recommended that the state fund 100% of the needs of “high cost” students with disabilities. The “high cost” benchmark would need to be determined over time but they suggested it at approximately \$20,000. For students who did not meet the “high cost” benchmark, a weight for all *other* special education costs would be computed. We estimate this weight would be lower than the current weight of 1.27 and would need to be determined and reviewed over time. The weight would be applied to students identified as needing special education services, which would be all special education students minus those in the high cost category.
- b. For career technical education, the PJPs recommended the state’s current approach remain in place, but that policy makers pay special attention to forthcoming recommendations from a Task Force addressing this issue and its funding.
- c. Several PJP panelists recommended that the state adopt a “newcomer” program for ELL students who have just entered the country. Such a program would provide more intensive services to orient ELL students to the US schooling system and better prepare them to function in a regular classroom and with other ELL students.

The panelists also had several recommendations that we do not support, but recommend the Committee consider in its deliberations. These include:

- Lower class sizes in grades 4-12
- Additional nursing staff
- Higher allocations for gifted and talented students
- More administrative staffing at all three school levels. This took the form of adding an additional assistant principal above the EB recommendations at each prototypical school
- More computer technicians in each school
- More state support for health care costs.

## **Case Studies of Improving Schools**

As part of our study, we identified five schools that demonstrated notable improvements in student achievement over time. To understand how these schools achieved those improvements we conducted in-depth case studies of all five. To the extent possible, we identified improving schools that enrolled a high proportion of economically disadvantaged students. We also tried to capture a cross-section of grade levels and geographic locations. The five schools selected for the case studies represent 1,139 students, approximately 62% of who are economically disadvantaged. The selection of schools was based on improvements in student achievement, as measured by math, reading and science scores on the New England Common Assessment Program (NECAP) from 2010 to 2012.

We found that the five schools employed similar strategies to improve student performance, and that those strategies were closely aligned with the theory of improvement built into the evidence-based model.

These schools:

- Had a clear focus on instruction in core subjects, such as language arts, mathematics and science
- Adopted research-based curriculum programs across the entire school
- Provided intensive, ongoing professional development, focused on the Common Core Curriculum Standards. This often included use of instructional coaches
- Organized teachers into collaborative groups that used student data to continuously improve core instruction, target students who needed interventions and monitor the progress of those students
- Used multiple student assessments to inform instruction, plan interventions and monitor progress
- Provided additional instructional time for struggling students
- Had class sizes smaller than those in the EB model

Since the strategies these schools deployed were similar to the theory of improvement embedded in the EB model, we concluded that the EB model did not need to be adjusted to reflect unique aspects of school improvement in Maine. Moreover, the strategies these schools implemented were also similar to the strategies in the improving schools that were studied by the Maine Education Policy Research Institute (MEPRI).

## Simulating Options to the EPS Funding System

As part of our review of Maine's Essential Programs and Services (EPS) school funding system, we were asked to provide the Committee with the capacity to simulate the Evidence Based (EB) model and consider alternative resource allocations for the components of the EB model. In addition, we sought to build the model so that we could analyze the funding implications and tax implications of the EB model; and we included a distribution model that allows consideration of per capita income as an alternative measure of fiscal capacity.

The purpose of this model – which we will provide to OPEGA for continued use – is to **estimate** the impact of alternative EB parameters, funding distribution choices and fiscal capacity measures on the total estimated cost of the EB model in Maine. Conceptually, any set of EB parameters will result in a new total cost of education for Maine. Once that total has been estimated, the model then allows estimation of state and local shares. While the state share of the current EPS is approximately 45% of the total, the state's goal is to shift that to 55%. Our model allows for estimates of state and local percentage shares using the current state percentage share, a state share of 55%, or by holding the required tax rate (RTR) of the system constant and allowing the state and local percentage shares to vary depending on the cost of the EB model that is simulated. In short, the model allows users to vary funding system parameters in a number of ways including changes in:

- The parameters and formulas of the EB model (e.g. changing class sizes or the allocation of certified teachers to serve struggling students)
- The state required tax rate for raising the local share of EB revenue
- The percentage of total EB funding provided by the State
- Whether or not to include a measure of income in the computation of each SAU's fiscal capacity.

In the model we simulate state and local aid and tax rates for the 2012-13 school year. The results of each simulation are thus comparable to actual state and local revenues for that year. The data set we use for the simulations includes EPS funding at 97% of the total, as well as adjustments for the curtailment of \$12.5 million enacted in the middle of the 2012-13 school year. As a result, our base simulation uses a required local tax rate (RTR) of 7.8 mills to fund the EB model.

We initially ran three simulation options for the EB model (with a total additional cost of \$360.8 million) as follows:

1. Maintaining the current state share percentage of funding at 45.5%
2. Maintaining the current RTR of 7.8 mills
3. Increasing the state share percentage of EB funding to 55%<sup>30</sup>

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<sup>30</sup> In EPS, state share percentage includes SAU revenue from the state and state revenue for state-only programs/adjustments. In EB, state share percentage includes SAU revenue from the state, state revenue for state-

FINAL REPORT Part 2: December 1, 2013 (Revised 12-24-2013)



In addition to this simulation, we produced a similar set of simulations using alternative EB inputs as requested by the Committee. This option increased the total cost of the EB to \$403.0 million. We also ran a variation of the Committee requested model where each minimum receiver SAU received at least 100% of special education funding. The total cost of this option remained the same, but some resources shifted from receiver to minimum receiver SAUs.

Finally, we simulated our base EB model with two variations of the alternative state valuation option. We used the ratio of median per-capita income in each SAU to the state median income, and multiplied that ratio by the state valuation to determine an alternative valuation for distribution of funds to SAUs. We only did this for the base EB model and used the following options:

- Used the multiplicative ratio to compute half of the state valuation (using state valuation for the other half) and constrained the ratio to a low of 0.5 and a high of 1.5
- Used the multiplicative ratio to compute half of the state valuation, without constraining the ratio.

As described in Chapter 3, the results suggested that using the EPS or an alternative EB funding system to resolve the concerns of high property wealth/low per-capita income SAUs would likely be very expensive and a better approach would be to seek a system that targeted aid more directly to low households, wherever they are located in Maine.

## **Regional Cost Adjustments**

Maine currently uses a regional adjustment factor that was developed, using 2004-05 data, for 35 geographic regions in the state and compares the average teacher salary in the region to the state average.

The index represents the differences in teacher salaries at the time that it was developed whether the differences were caused by different local choices on teacher salary levels, differences in the ability to raise educational revenues and pay teachers or differences in the purchasing power of the education dollar. The EB approach suggests that Maine develop either an Hedonic wage index or a Comparable Wage Index, or use those indices that have been developed by the National Center for Education Statistics, instead of the current regional cost adjustment in the formula.

Our model allows simulation of alternative CEI adjustments. In our modeling we used a Comparable Wage Index (CWI) developed by NCES in 2011. We simulated the base EB model with Maine's regional cost adjustment. The impact of this change was to reduce the total cost of the system \$44.8 million to \$316.1 million over EPS, with a resultant reduction in the required tax rate from 8.9 to 8.75 mills (for the EB using the current state percentage share of 45.5% of

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only programs/adjustments, and the state-run pension program. In neither case are over-EPS or over-EB funds included.

EB). This option also changed the EB total for each individual SAU as well. A table at the end of the report summarizes the available regional indexes for each SAU and can be used to determine how a change in the index will impact total EB revenues for each SAU.

## **CONCLUSIONS**

We will present our final recommendations to the Committee on December 10, 2013. In addition we will provide the Legislative Council with a fully operational copy of our Excel based simulation model that will enable Maine policy makers to continue to consider options to the EPS and EB models presented in this report. School Finance is a continually changing policy matter, and solutions that work today may be less viable in the future. Moreover, if the Legislature wishes to modify some of the components of the EPS funding model, the EB model presented in this document offers one set of options and the flexibility to consider alternative funding parameters. If the Legislature wants to also consider variations in state and local percentage shares of total EB funding, this simulation model makes that possible, and shows how changes in the relative percentages impacts the required tax rate to fund the local percentage share. In all instances, statistics by pupil decile as well as SAU-by-SAU results are provided in the simulation itself, making it possible to understand the overall distributional impacts of each option as well as the impact on SAUs.





## REFERENCES

- Baker, Bruce. (2005). *Development of an Hedonic Wage Index for the Wyoming School Funding Model*. Analysis prepared for the Wyoming Legislature under the auspices of Lawrence O. Picus and Associates.
- Chambers, Jay G. (1980). *The Development of a Cost of Education Index for the State of California Final reports, Parts 1 and 2*. Prepared for the California State Department of Education.
- Chambers, Jay G. (1981). Cost and Price Level Adjustments to State Aid for Education: A Theoretical and Empirical View. In K. Forbis Jordan & Nelda Cambron-McCabe (Eds.), *Perspectives in State School Support Programs*. Cambridge, MA: Ballinger.
- Chambers, Jay G., Odden, Allan & Vincent, Phillip E. (1976). *Cost of Education Indices Among School Districts*. Denver: Education Commission of the States.
- Fowler, William Jr., & Monk, David. (2001). *A Primer for Making Cost Adjustments in Education*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Imazeki, Jennifer. (2006). *Regional Adjustments for Washington State*. Paper prepared for the K-12 Advisory Committee of Washington Learns under the auspices of Lawrence O. Picus and Associates.
- Monk, David & Walker, Billy. (1991). The Texas Cost of Education Index. *Journal of Education Finance* 17(2), 172–192.
- Seder, R. (2012). Review and Evaluation of the Method to Calculate School Building Capacity. Report to the Wyoming School Facilities Department. Mimeo, June, 2012
- Taylor, Lori. (2004). *Adjusting for Geographic Variations in Teacher Compensation: Updating the Texas Cost-of-Education Index*. A report prepared for the Texas Legislature Joint committee on Public School finance, The Texas School Finance Project. Austin. Available at [www.capitol.state.tx.us/psf/reports.htm](http://www.capitol.state.tx.us/psf/reports.htm).
- Taylor, Lori L. (2010). *Putting Teachers in Context: A Comparable Wage Analysis of Wyoming Teacher Salaries*. A report prepared for the Wyoming Select Committee on School Finance Recalibration
- Taylor, Lori L. & Fowler, William J. (2006). *A Comparative Wage Approach to Geographic Cost Adjustment*. Washington, DC: National Center for Education Statistics.

Wending, Wayne. (1981). The Cost of Education Index: Measurement of Price Differences of Education Personnel Among New York State School Districts. *Journal of Education Finance* 6(4), 485–504.

# **APPENDIX A:**

## **DETAILED SIMULATION RESULTS**

**Simulation E1**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	45.50%
Mill Expectation	8.90
SAUs State Incr	200
SAUs State Decr	25
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$968,985,650	\$0	\$968,985,650	\$151,920,562
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,266,179,273	\$55,885,638	\$1,322,064,911	\$208,920,229
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$55,885,638	\$2,291,050,561	<b>\$360,840,791</b>
Model PP	<b>\$9,976</b>			<b>\$11,899</b>			<b>\$1,921</b>
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table E1.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$1,114	\$17	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	2.08	\$514	\$2,002	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$350	\$7,196	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$498	\$2,900	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$1,263	(\$91)	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	1.61	\$2,065	\$491	\$9,204	\$11,760
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.22	\$736	\$1,096	\$9,595	\$11,427
1074	Hermon School Departm	932	24%	\$474,181	\$28,520	0.69	\$522	\$791	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$4,181	\$4,337	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departme	218	59%	\$1,085,550	\$21,227	0.00	\$1,194	\$1,726	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.84	\$7,057	\$686	\$8,820	\$16,563
1095	Machias School Depart	318	77%	\$433,246	\$17,638	0.00	\$477	\$2,872	\$8,872	\$12,221
1271	Indian Township	186	86%	\$15,903	\$10,940	1.10	\$17	\$5,727	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$648	\$1,630	\$10,099	\$12,376
1016	Biddeford School Depar	2,637	57%	\$927,624	\$23,988	1.65	\$1,020	\$869	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	1.09	\$984	\$760	\$9,636	\$11,380

**Table E1.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.59	\$981	\$96	\$9,269	\$10,347	22	4
Decile 2	875	42%	\$749,383	\$23,500	0.25	\$562	\$1,074	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$779,892	\$23,941	0.36	\$1,167	\$555	\$9,413	\$11,135	14	3
Decile 4	1,940	42%	\$1,001,677	\$24,543	0.36	\$1,266	\$273	\$9,892	\$11,431	7	3
Decile 5	1,577	35%	\$813,061	\$28,625	0.59	\$904	\$634	\$10,065	\$11,603	11	1
Decile 6	1,323	50%	\$616,535	\$22,276	0.64	\$743	\$1,295	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$972,775	\$23,667	0.25	\$1,185	\$465	\$10,375	\$12,026	8	1
Decile 8	998	56%	\$723,018	\$21,649	1.37	\$1,583	\$647	\$10,130	\$12,360	17	3
Decile 9	1,253	55%	\$895,782	\$24,519	0.74	\$1,203	\$740	\$10,821	\$12,764	14	1
Decile 10	223	60%	\$1,074,182	\$23,154	1.12	\$1,487	\$2,242	\$10,810	\$14,542	72	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.63	\$1,112	\$809	<b>\$9,978</b>	<b>\$11,899</b>	200	25

Table E1.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.48	\$367	\$2,373	\$9,055	\$11,794	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.43	\$486	\$1,729	\$9,624	\$11,839	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.72	\$554	\$1,674	\$10,070	\$12,298	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.79	\$630	\$1,211	\$10,005	\$11,845	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.52	\$734	\$1,091	\$10,022	\$11,847	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	1.13	\$1,087	\$544	\$10,120	\$11,751	7	2
Decile 7	1,055	47%	\$826,075	\$22,846	0.53	\$1,173	\$606	\$9,908	\$11,687	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.66	\$1,455	(\$95)	\$9,900	\$11,259	11	6
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.94	\$2,300	(\$798)	\$10,729	\$12,231	9	5
Decile 10	248	36%	\$2,295,026	\$25,979	0.14	\$2,179	(\$43)	\$10,221	\$12,360	63	12
Weighted Avg	817	47%	\$865,696	\$23,926	0.63	\$1,112	\$809	\$9,978	\$11,899	200	25

Table E1.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.57	\$1,746	\$2,234	\$9,571	\$13,551	129	10
Decile 2	838	52%	\$714,531	\$23,708	0.49	\$759	\$1,444	\$9,623	\$11,827	21	1
Decile 3	1,309	45%	\$835,278	\$24,848	0.39	\$854	\$763	\$9,793	\$11,410	12	2
Decile 4	1,773	43%	\$890,143	\$27,540	0.17	\$987	\$613	\$9,790	\$11,390	9	2
Decile 5	2,103	36%	\$776,274	\$30,047	0.35	\$1,125	\$306	\$10,222	\$11,654	5	4
Decile 6	2,354	50%	\$568,359	\$25,767	0.76	\$648	\$1,294	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.89	\$1,813	(\$411)	\$10,767	\$12,168	5	3
Decile 8	3,102	50%	\$686,413	\$25,192	0.45	\$809	\$886	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	1.19	\$957	\$753	\$9,753	\$11,463	5	1
Decile 10	2,214	54%	\$845,725	\$23,387	0.54	\$1,232	\$497	\$10,321	\$12,053	2	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.63	\$1,112	\$809	\$9,978	\$11,899	200	25

Table E1.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.73	\$639	\$2,410	\$9,885	\$12,935	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.31	\$673	\$1,631	\$9,761	\$12,068	27	1
Decile 3	1,161	54%	\$708,774	\$22,374	0.77	\$961	\$953	\$9,693	\$11,607	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.39	\$1,373	\$868	\$9,971	\$12,212	26	5
Decile 5	2,618	53%	\$795,896	\$23,926	1.05	\$1,434	\$435	\$10,512	\$12,381	5	2
Decile 6	1,758	48%	\$706,821	\$24,317	0.66	\$1,040	\$926	\$9,710	\$11,676	11	1
Decile 7	830	48%	\$657,673	\$25,776	0.68	\$849	\$1,140	\$9,850	\$11,839	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.48	\$1,136	\$395	\$10,121	\$11,651	13	3
Decile 9	762	33%	\$1,358,062	\$30,137	0.40	\$1,716	(\$144)	\$10,194	\$11,766	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.32	\$1,319	(\$398)	\$10,094	\$11,015	9	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.63	\$1,112	\$809	\$9,978	\$11,899	200	25

**Simulation E2**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	51.01%
Mill Expectation	7.80
SAUs State Incr	211
SAUs State Decr	14
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,096,898,433	\$0	\$1,096,898,433	\$279,833,345
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,138,266,491	\$125,547,501	\$1,263,813,991	\$81,007,447
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$125,547,501	\$2,360,712,424	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table E2.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$0	\$1,132	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.98	\$0	\$2,516	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$0	\$7,547	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$2	\$3,396	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$0	\$1,172	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.51	\$1,151	\$1,405	\$9,204	\$11,760
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	\$0	\$1,832	\$9,595	\$11,427
1074	Hermion School Departm	932	24%	\$474,181	\$28,520	0.00	\$0	\$1,312	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$2,679	\$5,839	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	\$0	\$2,920	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$5,462	\$2,281	\$8,820	\$16,563
1095	Machias School Departm	318	77%	\$433,246	\$17,638	0.00	\$0	\$3,349	\$8,872	\$12,221
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	\$0	\$5,745	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$69	\$2,209	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.55	\$0	\$1,889	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	\$146	\$1,597	\$9,636	\$11,380

**Table E2.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.14	\$242	\$835	\$9,269	\$10,347	25	1
Decile 2	875	42%	\$749,383	\$23,500	0.01	\$88	\$1,548	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$779,892	\$23,941	0.01	\$447	\$1,275	\$9,413	\$11,135	17	0
Decile 4	1,940	42%	\$1,001,677	\$24,543	0.09	\$690	\$850	\$9,892	\$11,431	7	3
Decile 5	1,577	35%	\$813,061	\$28,625	0.16	\$156	\$1,383	\$10,065	\$11,603	12	0
Decile 6	1,323	50%	\$616,535	\$22,276	0.14	\$127	\$1,911	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$972,775	\$23,667	0.02	\$292	\$1,358	\$10,375	\$12,026	9	0
Decile 8	998	56%	\$723,018	\$21,649	0.67	\$793	\$1,438	\$10,130	\$12,360	19	1
Decile 9	1,253	55%	\$895,782	\$24,519	0.20	\$487	\$1,456	\$10,821	\$12,764	15	0
Decile 10	223	60%	\$1,074,182	\$23,154	0.50	\$937	\$2,792	\$10,810	\$14,542	72	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	\$9,978	\$11,899	211	14

Table E2.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.15	\$0	\$2,740	\$9,055	\$11,794	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.02	\$7	\$2,207	\$9,624	\$11,839	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.27	\$10	\$2,218	\$10,070	\$12,298	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.28	\$20	\$1,820	\$10,005	\$11,845	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.11	\$13	\$1,811	\$10,022	\$11,847	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.44	\$294	\$1,337	\$10,120	\$11,751	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.02	\$264	\$1,515	\$9,908	\$11,687	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.08	\$357	\$1,002	\$9,900	\$11,259	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.50	\$1,106	\$396	\$10,729	\$12,231	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.12	\$2,090	\$46	\$10,221	\$12,360	63	12
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

Table E2.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.33	\$1,289	\$2,691	\$9,571	\$13,551	130	9
Decile 2	838	52%	\$714,531	\$23,708	0.10	\$275	\$1,928	\$9,623	\$11,827	21	1
Decile 3	1,309	45%	\$835,278	\$24,848	0.08	\$282	\$1,335	\$9,793	\$11,410	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.01	\$399	\$1,200	\$9,790	\$11,390	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.11	\$438	\$994	\$10,222	\$11,654	8	1
Decile 6	2,354	50%	\$568,359	\$25,767	0.26	\$23	\$1,919	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.38	\$959	\$442	\$10,767	\$12,168	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.13	\$96	\$1,599	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.30	\$117	\$1,593	\$9,753	\$11,463	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.19	\$302	\$1,428	\$10,321	\$12,053	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

Table E2.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.29	\$128	\$2,921	\$9,885	\$12,935	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.10	\$95	\$2,210	\$9,761	\$12,068	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.34	\$339	\$1,575	\$9,693	\$11,607	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.30	\$905	\$1,337	\$9,971	\$12,212	26	5
Decile 5	2,618	53%	\$795,896	\$23,926	0.30	\$558	\$1,311	\$10,512	\$12,381	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.26	\$283	\$1,682	\$9,710	\$11,676	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.33	\$240	\$1,748	\$9,850	\$11,839	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.26	\$249	\$1,281	\$10,121	\$11,651	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.22	\$1,027	\$545	\$10,194	\$11,766	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.26	\$567	\$354	\$10,094	\$11,015	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14



**Simulation E3**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	55.03%
Mill Expectation	7.05
SAUs State Incr	213
SAUs State Decr	12
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,190,371,269	\$0	\$1,190,371,269	\$373,306,181
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,044,793,654	\$199,607,826	\$1,244,401,480	(\$12,465,389)
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$199,607,826	\$2,434,772,749	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table E3.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change from Current	State Change from Current	EPS PP	EB PP
1155	South Portland SchoolD	3,103	36%	\$1,204,882	\$28,597	0.00	(\$904)	\$2,035	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.23	(\$350)	\$2,867	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	(\$239)	\$7,786	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	(\$336)	\$3,734	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	(\$861)	\$2,033	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.00	\$528	\$2,028	\$9,204	\$11,760
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	(\$502)	\$2,334	\$9,595	\$11,427
1074	Heron School Departm	932	24%	\$474,181	\$28,520	0.00	(\$356)	\$1,668	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$1,655	\$6,862	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departme	218	59%	\$1,085,550	\$21,227	0.00	(\$814)	\$3,734	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$4,165	\$3,578	\$8,820	\$16,563
1095	Machias School Depart	318	77%	\$433,246	\$17,638	0.00	(\$325)	\$3,674	\$8,872	\$12,221
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	(\$12)	\$5,757	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	(\$326)	\$2,603	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.00	(\$696)	\$2,585	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	(\$425)	\$2,168	\$9,636	\$11,380

**Table E3.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.02	(\$275)	\$1,353	\$9,269	\$10,347	25	1
Decile 2	875	42%	\$749,383	\$23,500	0.00	(\$236)	\$1,873	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$779,892	\$23,941	0.00	(\$44)	\$1,766	\$9,413	\$11,135	17	0
Decile 4	1,940	42%	\$1,001,677	\$24,543	0.04	\$171	\$1,368	\$9,892	\$11,431	8	2
Decile 5	1,577	35%	\$813,061	\$28,625	0.01	(\$355)	\$1,893	\$10,065	\$11,603	12	0
Decile 6	1,323	50%	\$616,535	\$22,276	0.00	(\$293)	\$2,331	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$972,775	\$23,667	0.02	(\$329)	\$1,979	\$10,375	\$12,026	9	0
Decile 8	998	56%	\$723,018	\$21,649	0.30	\$254	\$1,977	\$10,130	\$12,360	19	1
Decile 9	1,253	55%	\$895,782	\$24,519	0.02	(\$129)	\$2,072	\$10,821	\$12,764	15	0
Decile 10	223	60%	\$1,074,182	\$23,154	0.16	\$513	\$3,216	\$10,810	\$14,542	73	7
Weighted Avg	817	47%	\$865,696	\$23,926	0.06	(\$66)	\$1,987	\$9,978	\$11,899	213	12

Table E3.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.05	(\$250)	\$2,990	\$9,055	\$11,794	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.00	(\$319)	\$2,534	\$9,624	\$11,839	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.06	(\$360)	\$2,588	\$10,070	\$12,298	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.04	(\$396)	\$2,236	\$10,005	\$11,845	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.02	(\$478)	\$2,303	\$10,022	\$11,847	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.07	(\$247)	\$1,877	\$10,120	\$11,751	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.00	(\$355)	\$2,134	\$9,908	\$11,687	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.00	(\$403)	\$1,762	\$9,900	\$11,259	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.25	\$217	\$1,285	\$10,729	\$12,231	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.10	\$1,798	\$338	\$10,221	\$12,360	65	10
Weighted Avg	817	47%	\$865,696	\$23,926	0.06	(\$66)	\$1,987	<b>\$9,978</b>	<b>\$11,899</b>	213	12

Table E3.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.25	\$934	\$3,045	\$9,571	\$13,551	130	9
Decile 2	838	52%	\$714,531	\$23,708	0.02	(\$95)	\$2,298	\$9,623	\$11,827	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.01	(\$173)	\$1,791	\$9,793	\$11,410	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.00	(\$106)	\$1,705	\$9,790	\$11,390	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.03	(\$84)	\$1,516	\$10,222	\$11,654	9	0
Decile 6	2,354	50%	\$568,359	\$25,767	0.05	(\$403)	\$2,346	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.20	\$377	\$1,024	\$10,767	\$12,168	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.00	(\$419)	\$2,114	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.05	(\$455)	\$2,165	\$9,753	\$11,463	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.06	(\$332)	\$2,062	\$10,321	\$12,053	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.06	(\$66)	\$1,987	<b>\$9,978</b>	<b>\$11,899</b>	213	12

Table E3.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.18	(\$221)	\$3,270	\$9,885	\$12,935	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.04	(\$299)	\$2,604	\$9,761	\$12,068	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.13	(\$138)	\$2,052	\$9,693	\$11,607	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.27	\$375	\$1,866	\$9,971	\$12,212	28	3
Decile 5	2,618	53%	\$795,896	\$23,926	0.06	(\$39)	\$1,908	\$10,512	\$12,381	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.14	(\$233)	\$2,199	\$9,710	\$11,676	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.18	(\$180)	\$2,169	\$9,850	\$11,839	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.16	(\$367)	\$1,897	\$10,121	\$11,651	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.16	\$497	\$1,075	\$10,194	\$11,766	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.26	\$43	\$878	\$10,094	\$11,015	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.06	(\$66)	\$1,987	<b>\$9,978</b>	<b>\$11,899</b>	213	12

**Simulation F1**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	45.49%
Mill Expectation	9.06
SAUs State Incr	200
SAUs State Decr	25
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$987,881,719	\$0	\$987,881,719	\$170,816,631
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,289,396,593	\$47,147,060	\$1,336,543,653	\$232,137,549
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,277,278,312	\$47,147,060	\$2,324,425,372	\$402,954,180
Model PP	\$9,976			\$12,123			\$2,145
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,486			\$2,145

**Table F1.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.16	\$1,364	\$8	\$10,247	\$11,619
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	2.24	\$589	\$2,113	\$10,651	\$13,353
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,407	(\$0)	\$9,625	\$12,033
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$401	\$7,101	\$8,374	\$15,877
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$570	\$3,134	\$12,275	\$15,979
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.04	\$1,447	(\$78)	\$10,818	\$12,186
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	1.77	\$2,198	\$555	\$9,204	\$11,957
1012	Bar Harbor School Deps	426	15%	\$2,308,224	\$23,926	0.00	\$1,493	(\$0)	\$9,016	\$10,510
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.38	\$843	\$1,204	\$9,595	\$11,642
1074	Hermon School Departm	932	24%	\$474,181	\$28,520	0.85	\$597	\$933	\$9,480	\$11,010
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$4,399	\$4,304	\$9,106	\$17,809
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.29	\$6,232	\$127	\$9,654	\$16,013
1053	Easton School Departme	218	59%	\$1,085,550	\$21,227	0.00	\$1,368	\$1,691	\$9,409	\$12,468
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.90	\$7,174	\$693	\$8,820	\$16,687
1095	Machias School Departm	318	77%	\$433,246	\$17,638	0.00	\$546	\$3,093	\$8,872	\$12,511
1271	Indian Township	186	86%	\$15,903	\$10,940	1.26	\$20	\$5,786	\$10,114	\$15,919
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,801	\$390	\$9,981	\$14,171
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$732	\$1,853	\$10,099	\$12,684
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	1.81	\$1,169	\$934	\$10,983	\$13,086
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	1.25	\$1,106	\$847	\$9,636	\$11,589

**Table F1.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.67	\$1,128	\$199	\$9,269	\$10,596	22	4
Decile 2	958	42%	\$817,260	\$23,391	0.52	\$1,008	\$855	\$9,221	\$11,084	20	1
Decile 3	982	40%	\$725,607	\$24,235	0.13	\$954	\$990	\$9,420	\$11,364	16	2
Decile 4	1,661	44%	\$1,084,597	\$26,098	0.58	\$1,455	\$360	\$9,839	\$11,655	9	3
Decile 5	1,858	36%	\$669,191	\$27,439	0.77	\$935	\$864	\$10,015	\$11,814	8	1
Decile 6	1,535	49%	\$648,024	\$23,599	0.71	\$869	\$1,294	\$9,824	\$11,986	12	1
Decile 7	1,266	54%	\$909,329	\$21,985	0.44	\$1,203	\$870	\$10,158	\$12,231	14	1
Decile 8	1,235	56%	\$770,933	\$21,551	1.40	\$1,812	\$437	\$10,342	\$12,591	13	3
Decile 9	1,243	56%	\$877,820	\$23,966	0.87	\$1,295	\$901	\$10,815	\$13,011	14	1
Decile 10	225	60%	\$1,092,253	\$23,273	1.22	\$1,629	\$2,266	\$10,819	\$14,717	72	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.74	\$1,236	\$909	\$9,978	\$12,123	200	25

Table F1.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.56	\$420	\$2,536	\$9,055	\$12,011	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.55	\$556	\$1,879	\$9,624	\$12,059	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.81	\$633	\$1,819	\$10,070	\$12,521	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.90	\$718	\$1,341	\$10,005	\$12,064	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.64	\$839	\$1,228	\$10,022	\$12,089	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	1.25	\$1,202	\$661	\$10,120	\$11,984	7	2
Decile 7	1,055	47%	\$826,075	\$22,846	0.68	\$1,305	\$718	\$9,908	\$11,931	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.76	\$1,621	(\$51)	\$9,900	\$11,469	11	6
Decile 9	1,384	47%	\$1,191,448	\$23,798	1.06	\$2,502	(\$777)	\$10,729	\$12,453	9	5
Decile 10	248	36%	\$2,295,026	\$25,979	0.17	\$2,391	(\$45)	\$10,221	\$12,570	63	12
Weighted Avg	817	47%	\$865,696	\$23,926	0.74	\$1,236	\$909	<b>\$9,978</b>	<b>\$12,123</b>	200	25

Table F1.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.62	\$1,858	\$2,281	\$9,571	\$13,709	129	10
Decile 2	838	52%	\$714,531	\$23,708	0.58	\$875	\$1,522	\$9,623	\$12,019	21	1
Decile 3	1,309	45%	\$835,278	\$24,848	0.50	\$973	\$906	\$9,793	\$11,672	12	2
Decile 4	1,773	43%	\$890,143	\$27,540	0.25	\$1,117	\$730	\$9,790	\$11,638	9	2
Decile 5	2,103	36%	\$776,274	\$30,047	0.42	\$1,252	\$409	\$10,222	\$11,884	5	4
Decile 6	2,354	50%	\$568,359	\$25,767	0.88	\$739	\$1,434	\$9,977	\$12,150	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	1.04	\$1,966	(\$312)	\$10,767	\$12,421	5	3
Decile 8	3,102	50%	\$686,413	\$25,192	0.55	\$930	\$1,017	\$9,826	\$11,773	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	1.35	\$1,079	\$858	\$9,753	\$11,690	5	1
Decile 10	2,214	54%	\$845,725	\$23,387	0.60	\$1,368	\$554	\$10,321	\$12,245	2	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.74	\$1,236	\$909	<b>\$9,978</b>	<b>\$12,123</b>	200	25

Table F1.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.81	\$714	\$2,536	\$9,885	\$13,135	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.36	\$758	\$1,792	\$9,761	\$12,313	27	1
Decile 3	1,161	54%	\$708,774	\$22,374	0.87	\$1,072	\$1,072	\$9,693	\$11,836	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.43	\$1,533	\$939	\$9,971	\$12,443	26	5
Decile 5	2,618	53%	\$795,896	\$23,926	1.18	\$1,561	\$564	\$10,512	\$12,637	5	2
Decile 6	1,758	48%	\$706,821	\$24,317	0.75	\$1,151	\$1,038	\$9,710	\$11,900	11	1
Decile 7	830	48%	\$657,673	\$25,776	0.77	\$940	\$1,260	\$9,850	\$12,051	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.55	\$1,265	\$469	\$10,121	\$11,855	13	3
Decile 9	762	33%	\$1,358,062	\$30,137	0.47	\$1,892	(\$94)	\$10,194	\$11,992	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.35	\$1,487	(\$349)	\$10,094	\$11,233	9	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.74	\$1,236	\$909	<b>\$9,978</b>	<b>\$12,123</b>	200	25

**Simulation F2**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	51.73%
Mill Expectation	7.80
SAUs State Incr	212
SAUs State Decr	13
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,135,605,332	\$0	\$1,135,605,332	\$318,540,244
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,141,672,980	\$123,127,284	\$1,264,800,264	\$84,413,936
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,277,278,312	\$123,127,284	\$2,400,405,596	<b>\$402,954,180</b>
Model PP	<b>\$9,976</b>			<b>\$12,123</b>			<b>\$2,145</b>
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,486			\$2,145

**Table F2.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$0	\$1,372	\$10,247	\$11,619
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.98	\$0	\$2,701	\$10,651	\$13,353
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,407	<b>(\$0)</b>	\$9,625	\$12,033
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$0	\$7,503	\$8,374	\$15,877
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$2	\$3,701	\$12,275	\$15,979
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$0	\$1,369	\$10,818	\$12,186
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.51	\$1,151	\$1,602	\$9,204	\$11,957
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,493	<b>(\$0)</b>	\$9,016	\$10,510
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	\$0	\$2,047	\$9,595	\$11,642
1074	Heron School Departm	932	24%	\$474,181	\$28,520	0.00	\$0	\$1,530	\$9,480	\$11,010
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$2,679	\$6,024	\$9,106	\$17,809
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.29	\$6,232	\$127	\$9,654	\$16,013
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	\$0	\$3,059	\$9,409	\$12,468
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$5,462	\$2,406	\$8,820	\$16,687
1095	Machias School Depart	318	77%	\$433,246	\$17,638	0.00	\$0	\$3,639	\$8,872	\$12,511
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	\$0	\$5,806	\$10,114	\$15,919
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,801	\$390	\$9,981	\$14,171
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$69	\$2,516	\$10,099	\$12,684
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.55	\$0	\$2,103	\$10,983	\$13,086
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	\$146	\$1,806	\$9,636	\$11,589

**Table F2.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.14	\$274	\$1,052	\$9,269	\$10,596	25	1
Decile 2	958	42%	\$817,260	\$23,391	0.01	\$362	\$1,502	\$9,221	\$11,084	21	0
Decile 3	982	40%	\$725,607	\$24,235	0.00	\$208	\$1,736	\$9,420	\$11,364	18	0
Decile 4	1,661	44%	\$1,084,597	\$26,098	0.10	\$802	\$1,014	\$9,839	\$11,655	9	3
Decile 5	1,858	36%	\$669,191	\$27,439	0.20	\$93	\$1,706	\$10,015	\$11,814	9	0
Decile 6	1,535	49%	\$648,024	\$23,599	0.13	\$123	\$2,039	\$9,824	\$11,986	12	1
Decile 7	1,266	54%	\$909,329	\$21,985	0.05	\$252	\$1,821	\$10,158	\$12,231	15	0
Decile 8	1,235	56%	\$770,933	\$21,551	0.65	\$844	\$1,405	\$10,342	\$12,591	15	1
Decile 9	1,243	56%	\$877,820	\$23,966	0.20	\$437	\$1,758	\$10,815	\$13,011	15	0
Decile 10	225	60%	\$1,092,253	\$23,273	0.50	\$1,004	\$2,891	\$10,819	\$14,717	73	7
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$449	\$1,696	<b>\$9,978</b>	<b>\$12,123</b>	212	13

Table F2.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.15	\$0	\$2,956	\$9,055	\$12,011	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.02	\$7	\$2,428	\$9,624	\$12,059	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.27	\$10	\$2,441	\$10,070	\$12,521	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.28	\$20	\$2,040	\$10,005	\$12,064	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.11	\$13	\$2,053	\$10,022	\$12,089	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.44	\$294	\$1,569	\$10,120	\$11,984	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.02	\$264	\$1,759	\$9,908	\$11,931	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.08	\$357	\$1,212	\$9,900	\$11,469	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.50	\$1,107	\$617	\$10,729	\$12,453	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.14	\$2,260	\$86	\$10,221	\$12,570	64	11
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$449	\$1,696	<b>\$9,978</b>	<b>\$12,123</b>	212	13

Table F2.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.35	\$1,336	\$2,802	\$9,571	\$13,709	130	9
Decile 2	838	52%	\$714,531	\$23,708	0.11	\$313	\$2,084	\$9,623	\$12,019	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.08	\$299	\$1,580	\$9,793	\$11,672	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.01	\$421	\$1,426	\$9,790	\$11,638	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.11	\$464	\$1,197	\$10,222	\$11,884	8	1
Decile 6	2,354	50%	\$568,359	\$25,767	0.26	\$23	\$2,150	\$9,977	\$12,150	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.39	\$989	\$665	\$10,767	\$12,421	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.13	\$96	\$1,851	\$9,826	\$11,773	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.30	\$117	\$1,820	\$9,753	\$11,690	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.19	\$302	\$1,620	\$10,321	\$12,245	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$449	\$1,696	<b>\$9,978</b>	<b>\$12,123</b>	212	13

Table F2.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.30	\$130	\$3,119	\$9,885	\$13,135	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.10	\$95	\$2,455	\$9,761	\$12,313	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.35	\$347	\$1,796	\$9,693	\$11,836	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.32	\$961	\$1,511	\$9,971	\$12,443	27	4
Decile 5	2,618	53%	\$795,896	\$23,926	0.30	\$558	\$1,567	\$10,512	\$12,637	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.27	\$285	\$1,905	\$9,710	\$11,900	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.34	\$243	\$1,957	\$9,850	\$12,051	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.26	\$250	\$1,484	\$10,121	\$11,855	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.23	\$1,087	\$711	\$10,194	\$11,992	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.27	\$620	\$519	\$10,094	\$11,233	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$449	\$1,696	<b>\$9,978</b>	<b>\$12,123</b>	212	13

**Simulation F3**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	55.02%
Mill Expectation	7.18
SAUs State Incr	213
SAUs State Decr	12
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,213,309,657	\$0	\$1,213,309,657	\$396,244,569
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,063,968,655	\$183,765,553	\$1,247,734,208	\$6,709,611
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,277,278,312	\$183,765,553	\$2,461,043,865	<b>\$402,954,180</b>
Model PP	<b>\$9,976</b>			<b>\$12,123</b>			<b>\$2,145</b>
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,486			\$2,145

**Table F3.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	(\$747)	\$2,119	\$10,247	\$11,619
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.36	(\$290)	\$2,991	\$10,651	\$13,353
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,407	(\$0)	\$9,625	\$12,033
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	(\$198)	\$7,700	\$8,374	\$15,877
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	(\$277)	\$3,981	\$12,275	\$15,979
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	(\$712)	\$2,081	\$10,818	\$12,186
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.00	\$636	\$2,118	\$9,204	\$11,957
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,493	(\$0)	\$9,016	\$10,510
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	(\$415)	\$2,462	\$9,595	\$11,642
1074	Hermion School Departm	932	24%	\$474,181	\$28,520	0.00	(\$294)	\$1,824	\$9,480	\$11,010
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$1,833	\$6,870	\$9,106	\$17,809
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.29	\$6,232	\$127	\$9,654	\$16,013
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	(\$673)	\$3,732	\$9,409	\$12,468
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$4,390	\$3,478	\$8,820	\$16,687
1095	Machias School Departn	318	77%	\$433,246	\$17,638	0.00	(\$269)	\$3,907	\$8,872	\$12,511
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	(\$10)	\$5,815	\$10,114	\$15,919
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,801	\$390	\$9,981	\$14,171
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	(\$257)	\$2,842	\$10,099	\$12,684
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.00	(\$575)	\$2,678	\$10,983	\$13,086
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	(\$326)	\$2,278	\$9,636	\$11,589

**Table F3.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.02	(\$154)	\$1,480	\$9,269	\$10,596	25	1
Decile 2	958	42%	\$817,260	\$23,391	0.00	\$42	\$1,821	\$9,221	\$11,084	21	0
Decile 3	982	40%	\$725,607	\$24,235	0.00	(\$159)	\$2,103	\$9,420	\$11,364	18	0
Decile 4	1,661	44%	\$1,084,597	\$26,098	0.05	\$376	\$1,440	\$9,839	\$11,655	10	2
Decile 5	1,858	36%	\$669,191	\$27,439	0.06	(\$321)	\$2,120	\$10,015	\$11,814	9	0
Decile 6	1,535	49%	\$648,024	\$23,599	0.00	(\$243)	\$2,406	\$9,824	\$11,986	12	1
Decile 7	1,266	54%	\$909,329	\$21,985	0.02	(\$227)	\$2,300	\$10,158	\$12,231	15	0
Decile 8	1,235	56%	\$770,933	\$21,551	0.36	\$368	\$1,881	\$10,342	\$12,591	15	1
Decile 9	1,243	56%	\$877,820	\$23,966	0.03	(\$65)	\$2,261	\$10,815	\$13,011	15	0
Decile 10	225	60%	\$1,092,253	\$23,273	0.22	\$640	\$3,255	\$10,819	\$14,717	73	7
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	\$36	\$2,109	<b>\$9,978</b>	<b>\$12,123</b>	213	12

Table F3.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.06	(\$207)	\$3,163	\$9,055	\$12,011	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.00	(\$262)	\$2,697	\$9,624	\$12,059	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.09	(\$296)	\$2,748	\$10,070	\$12,521	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.08	(\$324)	\$2,383	\$10,005	\$12,064	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.03	(\$393)	\$2,459	\$10,022	\$12,089	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.10	(\$153)	\$2,016	\$10,120	\$11,984	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.00	(\$248)	\$2,271	\$9,908	\$11,931	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.00	(\$271)	\$1,841	\$9,900	\$11,469	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.29	\$372	\$1,352	\$10,729	\$12,453	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.12	\$1,997	\$349	\$10,221	\$12,570	65	10
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	\$36	\$2,109	<b>\$9,978</b>	<b>\$12,123</b>	213	12

Table F3.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.27	\$1,039	\$3,100	\$9,571	\$13,709	130	9
Decile 2	838	52%	\$714,531	\$23,708	0.02	\$5	\$2,391	\$9,623	\$12,019	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.02	(\$78)	\$1,957	\$9,793	\$11,672	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.00	\$2	\$1,846	\$9,790	\$11,638	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.04	\$17	\$1,644	\$10,222	\$11,884	9	0
Decile 6	2,354	50%	\$568,359	\$25,767	0.09	(\$329)	\$2,502	\$9,977	\$12,150	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.23	\$508	\$1,146	\$10,767	\$12,421	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.00	(\$329)	\$2,276	\$9,826	\$11,773	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.09	(\$356)	\$2,293	\$9,753	\$11,690	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.07	(\$222)	\$2,144	\$10,321	\$12,245	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	\$36	\$2,109	<b>\$9,978</b>	<b>\$12,123</b>	213	12

Table F3.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.20	(\$159)	\$3,408	\$9,885	\$13,135	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.05	(\$231)	\$2,781	\$9,761	\$12,313	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.17	(\$48)	\$2,191	\$9,693	\$11,836	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.28	\$502	\$1,970	\$9,971	\$12,443	28	3
Decile 5	2,618	53%	\$795,896	\$23,926	0.10	\$65	\$2,061	\$10,512	\$12,637	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.16	(\$142)	\$2,332	\$9,710	\$11,900	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.20	(\$104)	\$2,305	\$9,850	\$12,051	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.16	(\$259)	\$1,993	\$10,121	\$11,855	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.18	\$645	\$1,153	\$10,194	\$11,992	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.27	\$187	\$952	\$10,094	\$11,233	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	\$36	\$2,109	<b>\$9,978</b>	<b>\$12,123</b>	213	12



**Simulation G1**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	55.49%
Mill Expectation	7.20
SAUs State Incr	219
SAUs State Decr	6
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPs Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,224,444,570	\$0	\$1,224,444,570	\$407,379,482
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,052,833,742	\$193,662,263	\$1,246,496,005	(\$4,425,302)
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,277,278,312	\$193,662,263	\$2,470,940,575	\$402,954,180
Model PP	\$9,976			\$12,123			\$2,145
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,486			\$2,145

**Table G1.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	(\$723)	\$2,095	\$10,247	\$11,619
1088	Lewiston School Departu	4,996	69%	\$467,224	\$20,014	0.38	(\$280)	\$2,982	\$10,651	\$13,353
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$1,349	\$1,058	\$9,625	\$12,033
1105	Medway School Departu	194	63%	\$318,605	\$21,030	0.00	(\$191)	\$7,694	\$8,374	\$15,877
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	(\$268)	\$3,972	\$12,275	\$15,979
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	(\$689)	\$2,058	\$10,818	\$12,186
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.00	\$652	\$2,101	\$9,204	\$11,957
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$427	\$1,066	\$9,016	\$10,510
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	(\$401)	\$2,449	\$9,595	\$11,642
1074	Heron School Departm	932	24%	\$474,181	\$28,520	0.00	(\$285)	\$1,815	\$9,480	\$11,010
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$1,860	\$6,843	\$9,106	\$17,809
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.14	\$5,535	\$825	\$9,654	\$16,013
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	(\$651)	\$3,710	\$9,409	\$12,468
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$4,424	\$3,443	\$8,820	\$16,687
1095	Machias School Departu	318	77%	\$433,246	\$17,638	0.00	(\$260)	\$3,899	\$8,872	\$12,511
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	(\$10)	\$5,815	\$10,114	\$15,919
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,579	\$612	\$9,981	\$14,171
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	(\$247)	\$2,832	\$10,099	\$12,684
1016	Biddeford School Depar	2,637	57%	\$927,624	\$23,988	0.00	(\$557)	\$2,660	\$10,983	\$13,086
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	(\$311)	\$2,263	\$9,636	\$11,589

**Table G1.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.02	(\$305)	\$1,632	\$9,269	\$10,596	26	0
Decile 2	958	42%	\$817,260	\$23,391	0.00	(\$71)	\$1,935	\$9,221	\$11,084	21	0
Decile 3	982	40%	\$725,607	\$24,235	0.00	(\$192)	\$2,137	\$9,420	\$11,364	18	0
Decile 4	1,661	44%	\$1,084,597	\$26,098	0.02	\$205	\$1,611	\$9,839	\$11,655	11	1
Decile 5	1,858	36%	\$669,191	\$27,439	0.06	(\$307)	\$2,107	\$10,015	\$11,814	9	0
Decile 6	1,535	49%	\$648,024	\$23,599	0.00	(\$244)	\$2,407	\$9,824	\$11,986	13	0
Decile 7	1,266	54%	\$909,329	\$21,985	0.02	(\$296)	\$2,369	\$10,158	\$12,231	15	0
Decile 8	1,235	56%	\$770,933	\$21,551	0.37	\$384	\$1,866	\$10,342	\$12,591	15	1
Decile 9	1,243	56%	\$877,820	\$23,966	0.04	(\$50)	\$2,246	\$10,815	\$13,011	15	0
Decile 10	225	60%	\$1,092,253	\$23,273	0.22	\$548	\$3,348	\$10,819	\$14,717	76	4
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	(\$24)	\$2,169	\$9,978	\$12,123	219	6

Table G1.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.06	(\$200)	\$3,157	\$9,055	\$12,011	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.00	(\$254)	\$2,689	\$9,624	\$12,059	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.10	(\$286)	\$2,738	\$10,070	\$12,521	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.08	(\$313)	\$2,372	\$10,005	\$12,064	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.04	(\$380)	\$2,446	\$10,022	\$12,089	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.10	(\$138)	\$2,002	\$10,120	\$11,984	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.00	(\$232)	\$2,255	\$9,908	\$11,931	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.00	(\$251)	\$1,821	\$9,900	\$11,469	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.30	\$396	\$1,328	\$10,729	\$12,453	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.08	\$1,318	\$1,028	\$10,221	\$12,570	71	4
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	(\$24)	\$2,169	\$9,978	\$12,123	219	6

Table G1.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.26	\$821	\$3,317	\$9,571	\$13,709	135	4
Decile 2	838	52%	\$714,531	\$23,708	0.02	(\$128)	\$2,524	\$9,623	\$12,019	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.02	(\$145)	\$2,024	\$9,793	\$11,672	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.00	(\$104)	\$1,951	\$9,790	\$11,638	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.04	\$33	\$1,629	\$10,222	\$11,884	9	0
Decile 6	2,354	50%	\$568,359	\$25,767	0.09	(\$318)	\$2,491	\$9,977	\$12,150	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.20	\$381	\$1,273	\$10,767	\$12,421	7	1
Decile 8	3,102	50%	\$686,413	\$25,192	0.01	(\$316)	\$2,263	\$9,826	\$11,773	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.10	(\$341)	\$2,278	\$9,753	\$11,690	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.07	(\$205)	\$2,127	\$10,321	\$12,245	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	(\$24)	\$2,169	\$9,978	\$12,123	219	6

Table G1.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.20	(\$153)	\$3,402	\$9,885	\$13,135	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.05	(\$220)	\$2,770	\$9,761	\$12,313	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.18	(\$35)	\$2,178	\$9,693	\$11,836	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.28	\$396	\$2,076	\$9,971	\$12,443	30	1
Decile 5	2,618	53%	\$795,896	\$23,926	0.11	\$81	\$2,045	\$10,512	\$12,637	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.15	(\$131)	\$2,321	\$9,710	\$11,900	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.15	(\$133)	\$2,334	\$9,850	\$12,051	20	0
Decile 8	1,230	42%	\$882,904	\$27,583	0.15	(\$250)	\$1,984	\$10,121	\$11,855	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.16	\$372	\$1,425	\$10,194	\$11,992	21	1
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.24	(\$73)	\$1,212	\$10,094	\$11,233	16	1
Weighted Avg	817	47%	\$865,696	\$23,926	0.08	(\$24)	\$2,169	\$9,978	\$12,123	219	6

**Simulation H1**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	Alternative Income-Based
% Income-Based	50.00%
State Share	45.50%
Mill Expectation	8.71
SAUs State Incr	196
SAUs State Decr	29
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPs Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$969,028,619	\$0	\$969,028,619	\$151,963,531
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,266,136,304	\$101,472,126	\$1,367,608,430	\$208,877,260
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$101,472,126	\$2,336,637,049	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table H1.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	Income Adjusted Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,322,504	\$28,597	0.00	\$1,114	\$17	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$429,030	\$20,014	1.89	\$93	\$2,424	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$299,324	\$21,030	0.00	\$122	\$7,425	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$416,946	\$20,344	0.00	\$118	\$3,279	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,241,072	\$27,794	0.00	\$1,712	(\$540)	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$754,651	\$19,521	1.42	\$1,241	\$1,315	\$9,204	\$11,760
1012	Bar Harbor School Dept	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$672,402	\$24,179	0.03	\$640	\$1,193	\$9,595	\$11,427
1074	Hermon School Depart	932	24%	\$519,708	\$28,520	0.50	\$828	\$484	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,267,835	\$20,515	0.00	\$3,074	\$5,444	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,324,310	\$19,818	0.58	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departme	218	59%	\$1,024,328	\$21,227	0.00	\$455	\$2,466	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,508,329	\$17,808	0.82	\$5,110	\$2,633	\$8,820	\$16,563
1095	Machias School Depart	318	77%	\$376,317	\$17,638	0.00	(\$102)	\$3,451	\$8,872	\$12,221
1271	Indian Township	186	86%	\$11,927	\$10,940	0.91	(\$20)	\$5,765	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,895,957	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$548	\$1,730	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$928,832	\$23,988	1.46	\$855	\$1,034	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$741,463	\$22,671	0.90	\$665	\$1,078	\$9,636	\$11,380

**Table H1.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	651	28%	\$1,229,831	\$26,781	0.33	\$1,156	(\$79)	\$9,269	\$10,347	20
Decile 2	875	42%	\$819,746	\$23,500	0.16	\$721	\$915	\$9,195	\$10,832	21
Decile 3	1,110	43%	\$824,866	\$23,941	0.28	\$1,334	\$388	\$9,413	\$11,135	14
Decile 4	1,940	42%	\$1,067,901	\$24,543	0.29	\$1,153	\$387	\$9,892	\$11,431	7
Decile 5	1,577	35%	\$872,649	\$28,625	0.48	\$1,155	\$384	\$10,065	\$11,603	10
Decile 6	1,323	50%	\$614,666	\$22,276	0.52	\$620	\$1,418	\$9,752	\$11,790	13
Decile 7	2,023	55%	\$1,009,503	\$23,667	0.18	\$1,237	\$414	\$10,375	\$12,026	8
Decile 8	998	56%	\$735,207	\$21,649	1.15	\$1,429	\$801	\$10,130	\$12,360	17
Decile 9	1,253	55%	\$917,416	\$24,519	0.62	\$1,103	\$840	\$10,821	\$12,764	14
Decile 10	223	60%	\$1,098,967	\$23,154	0.97	\$1,200	\$2,529	\$10,810	\$14,542	72
Weighted Avg	817	47%	\$915,335	\$23,926	0.50	\$1,112	\$809	\$9,978	\$11,899	196

Table H1.3 SAU Income Adjusted Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	476	60%	\$318,030	\$18,644	0.41	\$108	\$2,782	\$9,022	\$11,912	39
Decile 2	1,582	62%	\$424,753	\$21,412	0.75	\$256	\$1,974	\$9,720	\$11,950	12
Decile 3	1,075	50%	\$494,206	\$22,743	0.16	\$475	\$1,611	\$10,145	\$12,231	15
Decile 4	1,427	48%	\$561,881	\$22,403	0.69	\$565	\$1,309	\$10,215	\$12,088	14
Decile 5	1,267	54%	\$654,769	\$22,550	0.73	\$641	\$1,371	\$9,872	\$11,885	13
Decile 6	1,934	43%	\$749,826	\$25,039	0.76	\$1,148	\$470	\$9,774	\$11,393	9
Decile 7	1,053	42%	\$862,162	\$24,583	0.15	\$1,304	\$258	\$10,168	\$11,730	14
Decile 8	1,157	51%	\$1,112,792	\$23,326	0.71	\$1,859	(\$100)	\$10,489	\$12,249	13
Decile 9	1,157	26%	\$1,319,746	\$29,947	0.12	\$1,946	(\$827)	\$9,978	\$11,096	8
Decile 10	267	33%	\$2,514,408	\$26,438	0.42	\$2,643	(\$585)	\$10,369	\$12,430	59
Weighted Avg	817	47%	\$915,335	\$23,926	0.50	\$1,112	\$809	<b>\$9,978</b>	<b>\$11,899</b>	196

Table H1.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	134	53%	\$1,602,283	\$22,832	0.51	\$1,531	\$2,449	\$9,571	\$13,551	129
Decile 2	838	52%	\$727,836	\$23,708	0.41	\$612	\$1,591	\$9,623	\$11,827	21
Decile 3	1,309	45%	\$878,519	\$24,848	0.33	\$704	\$913	\$9,793	\$11,410	11
Decile 4	1,773	43%	\$971,832	\$27,540	0.11	\$1,016	\$583	\$9,790	\$11,390	9
Decile 5	2,103	36%	\$839,522	\$30,047	0.26	\$1,557	(\$126)	\$10,222	\$11,654	5
Decile 6	2,354	50%	\$595,394	\$25,767	0.64	\$776	\$1,167	\$9,977	\$11,920	6
Decile 7	2,653	43%	\$1,068,788	\$26,731	0.66	\$1,806	(\$404)	\$10,767	\$12,168	4
Decile 8	3,102	50%	\$717,398	\$25,192	0.38	\$789	\$906	\$9,826	\$11,521	4
Decile 9	3,487	45%	\$801,119	\$25,979	0.86	\$881	\$829	\$9,753	\$11,463	5
Decile 10	2,214	54%	\$873,140	\$23,387	0.48	\$1,262	\$468	\$10,321	\$12,053	2
Weighted Avg	817	47%	\$915,335	\$23,926	0.50	\$1,112	\$809	<b>\$9,978</b>	<b>\$11,899</b>	196

Table H1.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	321	67%	\$458,944	\$16,994	0.72	\$143	\$2,906	\$9,885	\$12,935	56
Decile 2	640	60%	\$500,088	\$20,996	0.27	\$309	\$1,996	\$9,761	\$12,068	27
Decile 3	1,161	54%	\$686,364	\$22,374	0.72	\$713	\$1,202	\$9,693	\$11,607	15
Decile 4	557	52%	\$1,183,527	\$23,783	0.37	\$1,280	\$961	\$9,971	\$12,212	26
Decile 5	2,618	53%	\$795,896	\$23,926	0.89	\$1,282	\$587	\$10,512	\$12,381	5
Decile 6	1,758	48%	\$710,870	\$24,317	0.56	\$942	\$1,024	\$9,710	\$11,676	11
Decile 7	830	48%	\$684,604	\$25,776	0.56	\$944	\$1,045	\$9,850	\$11,839	19
Decile 8	1,230	42%	\$951,822	\$27,583	0.30	\$1,475	\$55	\$10,121	\$11,651	11
Decile 9	762	33%	\$1,534,684	\$30,137	0.25	\$1,968	(\$396)	\$10,194	\$11,766	18
Decile 10	1,197	15%	\$1,629,918	\$39,779	0.11	\$2,003	(\$1,082)	\$10,094	\$11,015	8
Weighted Avg	817	47%	\$915,335	\$23,926	0.50	\$1,112	\$809	<b>\$9,978</b>	<b>\$11,899</b>	196

**Simulation H2**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	Alternative Income-Based
% Income-Based	100.00%
State Share	45.47%
Mill Expectation	8.63
SAUs State Incr	194
SAUs State Decr	31
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$968,354,865	\$0	\$968,354,865	\$151,289,777
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,266,810,058	\$194,673,110	\$1,461,483,169	\$209,551,015
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$194,673,110	\$2,429,838,033	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table H2.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	Income Adjusted Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland SchoolD	3,103	36%	\$1,440,125	\$28,597	0.00	\$1,114	\$17	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$390,836	\$20,014	1.81	(\$271)	\$2,788	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$280,044	\$21,030	0.00	(\$68)	\$7,615	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$383,212	\$20,344	0.00	(\$206)	\$3,604	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,333,896	\$27,794	0.00	\$1,712	(\$540)	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$678,144	\$19,521	1.34	\$520	\$2,036	\$9,204	\$11,760
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$675,943	\$24,179	0.00	\$616	\$1,216	\$9,595	\$11,427
1074	Heron School Departm	932	24%	\$565,235	\$28,520	0.42	\$1,179	\$133	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,170,532	\$20,515	0.00	\$2,133	\$6,385	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$3,918,240	\$19,818	0.94	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departme	218	59%	\$963,106	\$21,227	0.00	(\$156)	\$3,076	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,287,224	\$17,808	0.74	\$3,081	\$4,662	\$8,820	\$16,563
1095	Machias School Departm	318	77%	\$319,388	\$17,638	0.00	(\$623)	\$3,972	\$8,872	\$12,221
1271	Indian Township	186	86%	\$7,272	\$10,940	0.83	(\$61)	\$5,806	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,943,632	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$506	\$1,772	\$10,099	\$12,376
1016	Biddeford School Depan	2,637	57%	\$930,040	\$23,988	1.38	\$791	\$1,098	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$721,498	\$22,671	0.82	\$434	\$1,310	\$9,636	\$11,380

**Table H2.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	651	28%	\$1,525,652	\$26,781	0.31	\$1,255	(\$177)	\$9,269	\$10,347	20
Decile 2	875	42%	\$890,012	\$23,500	0.13	\$923	\$714	\$9,195	\$10,832	20
Decile 3	1,110	43%	\$893,635	\$23,941	0.25	\$1,567	\$155	\$9,413	\$11,135	13
Decile 4	1,940	42%	\$1,134,126	\$24,543	0.29	\$1,078	\$461	\$9,892	\$11,431	7
Decile 5	1,577	35%	\$987,815	\$28,625	0.44	\$1,285	\$254	\$10,065	\$11,603	9
Decile 6	1,323	50%	\$612,750	\$22,276	0.47	\$559	\$1,479	\$9,752	\$11,790	13
Decile 7	2,023	55%	\$1,046,231	\$23,667	0.17	\$1,161	\$490	\$10,375	\$12,026	8
Decile 8	998	56%	\$747,395	\$21,649	0.99	\$1,292	\$938	\$10,130	\$12,360	18
Decile 9	1,253	55%	\$958,626	\$24,519	0.57	\$1,073	\$870	\$10,821	\$12,764	14
Decile 10	223	60%	\$1,144,210	\$23,154	0.91	\$964	\$2,765	\$10,810	\$14,542	72
Weighted Avg	817	47%	\$987,897	\$23,926	0.46	\$1,116	\$805	\$9,978	\$11,899	194

Table H2.3 SAU Income Adjusted Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	457	61%	\$292,038	\$17,590	0.42	(\$210)	\$2,908	\$9,145	\$11,844	40
Decile 2	1,324	61%	\$404,033	\$21,786	0.69	\$64	\$2,430	\$9,691	\$12,184	14
Decile 3	1,051	53%	\$493,867	\$22,353	0.04	\$437	\$1,632	\$10,036	\$12,106	16
Decile 4	1,753	45%	\$566,633	\$24,520	0.68	\$580	\$1,218	\$10,203	\$12,000	11
Decile 5	1,132	56%	\$655,248	\$22,170	0.74	\$518	\$1,604	\$9,810	\$11,932	16
Decile 6	1,600	45%	\$770,176	\$23,807	0.71	\$1,202	\$476	\$9,742	\$11,420	9
Decile 7	1,383	45%	\$889,926	\$23,977	0.45	\$1,452	\$253	\$10,107	\$11,811	12
Decile 8	739	40%	\$1,140,323	\$24,756	0.67	\$2,734	(\$1,001)	\$10,411	\$12,145	12
Decile 9	1,353	42%	\$1,475,807	\$26,689	0.22	\$2,224	(\$789)	\$10,409	\$11,844	12
Decile 10	269	22%	\$3,057,168	\$27,719	0.05	\$2,208	(\$563)	\$10,172	\$11,820	52
Weighted Avg	817	47%	\$987,897	\$23,926	0.46	\$1,116	\$805	\$9,978	\$11,899	194

Table H2.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	134	53%	\$1,725,858	\$22,832	0.52	\$1,354	\$2,626	\$9,571	\$13,551	130
Decile 2	838	52%	\$741,141	\$23,708	0.39	\$512	\$1,691	\$9,623	\$11,827	20
Decile 3	1,309	45%	\$958,248	\$24,848	0.32	\$603	\$1,014	\$9,793	\$11,410	11
Decile 4	1,773	43%	\$1,106,639	\$27,540	0.10	\$964	\$636	\$9,790	\$11,390	9
Decile 5	2,103	36%	\$982,135	\$30,047	0.25	\$1,989	(\$557)	\$10,222	\$11,654	4
Decile 6	2,354	50%	\$622,428	\$25,767	0.60	\$962	\$981	\$9,977	\$11,920	6
Decile 7	2,653	43%	\$1,150,036	\$26,731	0.52	\$1,823	(\$421)	\$10,767	\$12,168	3
Decile 8	3,102	50%	\$748,383	\$25,192	0.34	\$817	\$878	\$9,826	\$11,521	4
Decile 9	3,487	45%	\$853,732	\$25,979	0.81	\$793	\$917	\$9,753	\$11,463	5
Decile 10	2,214	54%	\$900,556	\$23,387	0.45	\$1,186	\$544	\$10,321	\$12,053	2
Weighted Avg	817	47%	\$987,897	\$23,926	0.46	\$1,116	\$805	\$9,978	\$11,899	194

Table H2.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	321	67%	\$405,486	\$16,994	0.80	(\$299)	\$3,348	\$9,885	\$12,935	56
Decile 2	640	60%	\$469,420	\$20,996	0.26	\$6	\$2,298	\$9,761	\$12,068	28
Decile 3	1,161	54%	\$663,954	\$22,374	0.72	\$527	\$1,387	\$9,693	\$11,607	15
Decile 4	557	52%	\$1,181,060	\$23,783	0.36	\$1,232	\$1,009	\$9,971	\$12,212	26
Decile 5	2,618	53%	\$795,896	\$23,926	0.83	\$1,219	\$650	\$10,512	\$12,381	5
Decile 6	1,758	48%	\$714,920	\$24,317	0.51	\$919	\$1,046	\$9,710	\$11,676	11
Decile 7	830	48%	\$711,536	\$25,776	0.49	\$1,095	\$893	\$9,850	\$11,839	19
Decile 8	1,230	42%	\$1,020,741	\$27,583	0.19	\$1,707	(\$177)	\$10,121	\$11,651	9
Decile 9	762	33%	\$1,711,306	\$30,137	0.16	\$2,189	(\$617)	\$10,194	\$11,766	17
Decile 10	1,197	15%	\$2,149,965	\$39,779	0.08	\$2,455	(\$1,533)	\$10,094	\$11,015	8
Weighted Avg	817	47%	\$987,897	\$23,926	0.46	\$1,116	\$805	\$9,978	\$11,899	194

**Simulation J1**
**Model Description**

Regional Cost Index	ME Current
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	45.46%
Mill Expectation	8.72
SAUs State Incr	200
SAUs State Decr	25
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$947,677,141	\$0	\$947,677,141	\$130,612,053
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,242,721,121	\$66,020,959	\$1,308,742,080	\$185,462,077
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,190,398,262	\$66,020,959	\$2,256,419,221	\$316,074,130
Model PP	\$9,976			\$11,661			\$1,683
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,023			\$1,683

**Table J1.1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$982	\$1	\$10,247	\$11,230
1088	Lewston School Depart	4,996	69%	\$467,224	\$20,014	1.90	\$430	\$1,548	\$10,651	\$12,629
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,047	(\$0)	\$9,625	\$11,672
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$293	\$5,566	\$8,374	\$14,233
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$417	\$2,916	\$12,275	\$15,608
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$1,056	(\$44)	\$10,818	\$11,830
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	1.43	\$1,916	\$483	\$9,204	\$11,603
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,149	(\$0)	\$9,016	\$10,165
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.04	\$615	\$878	\$9,595	\$11,088
1074	Hermion School Depart	932	24%	\$474,181	\$28,520	0.51	\$436	\$566	\$9,480	\$10,481
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$3,935	\$3,911	\$9,106	\$16,952
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.26	\$6,083	\$122	\$9,654	\$15,859
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	\$999	\$1,857	\$9,409	\$12,264
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.81	\$7,009	\$680	\$8,820	\$16,509
1095	Machias School Depart	318	77%	\$433,246	\$17,638	0.00	\$399	\$2,501	\$8,872	\$11,771
1271	Indian Township	186	86%	\$15,903	\$10,940	0.92	\$15	\$5,907	\$10,114	\$16,035
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,046	\$282	\$9,981	\$13,308
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$553	\$1,414	\$10,099	\$12,066
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	1.47	\$853	\$929	\$10,983	\$12,766
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.91	\$847	\$502	\$9,636	\$10,985

**Table J1.2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	589	29%	\$1,050,679	\$25,647	0.49	\$826	\$176	\$9,192	\$10,194	25
Decile 2	1,181	43%	\$660,239	\$24,385	0.23	\$460	\$1,104	\$9,102	\$10,665	17
Decile 3	1,488	41%	\$740,730	\$24,670	0.37	\$980	\$417	\$9,531	\$10,928	10
Decile 4	1,309	49%	\$668,820	\$22,912	0.46	\$558	\$1,068	\$9,484	\$11,110	14
Decile 5	1,274	43%	\$926,337	\$26,027	0.24	\$1,089	\$344	\$9,870	\$11,303	12
Decile 6	1,207	41%	\$834,120	\$22,821	0.37	\$908	\$500	\$10,101	\$11,509	13
Decile 7	1,323	49%	\$1,097,574	\$24,290	0.77	\$1,566	(\$173)	\$10,393	\$11,787	12
Decile 8	1,391	57%	\$775,805	\$21,998	0.75	\$1,058	\$690	\$10,318	\$12,066	12
Decile 9	1,700	58%	\$717,579	\$24,483	0.92	\$942	\$825	\$10,800	\$12,567	10
Decile 10	221	58%	\$1,199,634	\$23,351	0.74	\$1,486	\$1,883	\$10,906	\$14,278	75
Weighted Avg	817	47%	\$865,696	\$23,926	0.53	\$987	\$695	\$9,978	\$11,661	200

Table J1.3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.42	\$307	\$2,063	\$9,055	\$11,425	31
Decile 2	1,000	56%	\$435,075	\$21,051	0.30	\$408	\$1,437	\$9,624	\$11,469	17
Decile 3	1,160	56%	\$494,035	\$21,666	0.62	\$465	\$1,360	\$10,070	\$11,894	17
Decile 4	1,936	44%	\$554,352	\$25,295	0.68	\$530	\$1,014	\$10,005	\$11,549	10
Decile 5	1,159	48%	\$654,957	\$22,483	0.39	\$616	\$1,068	\$10,022	\$11,706	16
Decile 6	2,014	47%	\$720,760	\$26,410	1.01	\$957	\$533	\$10,120	\$11,610	7
Decile 7	1,055	47%	\$826,075	\$22,846	0.38	\$1,024	\$604	\$9,908	\$11,536	19
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.56	\$1,277	(\$49)	\$9,900	\$11,128	11
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.86	\$2,103	(\$835)	\$10,729	\$11,997	9
Decile 10	248	36%	\$2,295,026	\$25,979	0.13	\$2,037	(\$60)	\$10,221	\$12,201	63
Weighted Avg	817	47%	\$865,696	\$23,926	0.53	\$987	\$695	<b>\$9,978</b>	<b>\$11,661</b>	200

Table J1.4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.53	\$1,658	\$2,115	\$9,571	\$13,344	129
Decile 2	838	52%	\$714,531	\$23,708	0.40	\$675	\$1,193	\$9,623	\$11,491	21
Decile 3	1,309	45%	\$835,278	\$24,848	0.30	\$744	\$621	\$9,793	\$11,158	12
Decile 4	1,773	43%	\$890,143	\$27,540	0.11	\$798	\$565	\$9,790	\$11,153	9
Decile 5	2,103	36%	\$776,274	\$30,047	0.27	\$1,013	\$204	\$10,222	\$11,439	5
Decile 6	2,354	50%	\$568,359	\$25,767	0.65	\$546	\$1,131	\$9,977	\$11,654	7
Decile 7	2,653	43%	\$987,539	\$26,731	0.75	\$1,661	(\$363)	\$10,767	\$12,065	5
Decile 8	3,102	50%	\$686,413	\$25,192	0.38	\$702	\$750	\$9,826	\$11,279	5
Decile 9	3,487	45%	\$763,249	\$25,979	1.01	\$819	\$590	\$9,753	\$11,163	5
Decile 10	2,214	54%	\$845,725	\$23,387	0.48	\$1,080	\$408	\$10,321	\$11,812	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.53	\$987	\$695	<b>\$9,978</b>	<b>\$11,661</b>	200

Table J1.5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.65	\$556	\$2,149	\$9,885	\$12,591	56
Decile 2	640	60%	\$530,757	\$20,996	0.26	\$578	\$1,457	\$9,761	\$11,798	27
Decile 3	1,161	54%	\$708,774	\$22,374	0.66	\$837	\$848	\$9,693	\$11,378	15
Decile 4	557	52%	\$1,185,994	\$23,783	0.38	\$1,221	\$727	\$9,971	\$11,919	26
Decile 5	2,618	53%	\$795,896	\$23,926	0.90	\$1,290	\$352	\$10,512	\$12,154	5
Decile 6	1,758	48%	\$706,821	\$24,317	0.56	\$914	\$777	\$9,710	\$11,401	11
Decile 7	830	48%	\$657,673	\$25,776	0.59	\$739	\$1,013	\$9,850	\$11,602	19
Decile 8	1,230	42%	\$882,904	\$27,583	0.42	\$993	\$344	\$10,121	\$11,457	13
Decile 9	762	33%	\$1,358,062	\$30,137	0.35	\$1,597	(\$216)	\$10,194	\$11,575	19
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.31	\$1,169	(\$384)	\$10,094	\$10,879	9
Weighted Avg	817	47%	\$865,696	\$23,926	0.53	\$987	\$695	<b>\$9,978</b>	<b>\$11,661</b>	200





## **APPENDIX B**

### **SAU-BY-SAU RESULTS FOR EPS, EB AND COMMITTEE EB SIMULATIONS**

**Table B1: SAU Outcomes for Total Resources, EPS, EB and Committee EB Simulations**  
**Assumes current RTR of 7.8 mills**

SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
1000	Acton School Department	381	3,797,312	4,960,507	5,019,419	1,163,195	1,222,108	58,912
1284	Airline CSD	63	665,718	1,128,387	1,135,984	462,669	470,265	7,596
1001	Alexander School Department	57	493,344	920,305	930,060	426,961	436,716	9,755
1004	Appleton School Department	139	1,205,812	1,880,622	1,924,564	674,809	718,752	43,943
1007	Auburn School Department	3,653	33,338,108	42,092,634	42,967,645	8,754,526	9,629,537	875,011
1008	Augusta Public Schools	2,225	23,943,703	28,245,406	28,873,486	4,301,703	4,929,784	628,081
1009	Baileyville School Department	256	2,083,983	2,840,963	2,876,294	756,979	792,311	35,331
1010	Bancroft School Department	9	97,691	126,877	129,700	29,186	32,009	2,823
1011	Bangor School Department	3,688	35,385,171	42,141,292	42,935,090	6,756,121	7,549,919	793,798
1012	Bar Harbor School Department	426	3,836,390	4,380,706	4,471,818	544,316	635,429	91,112
1192	Baring Plt School Department	37	328,375	397,676	408,947	69,301	80,571	11,270
1014	Beals School Department	50	364,323	788,205	796,336	423,881	432,013	8,132
1195	Beaver Cove School Department	12	89,359	114,707	117,369	25,348	28,010	2,662
1015	Beddington School Department	2	33,658	42,797	43,526	9,140	9,868	729
1016	Biddeford School Department	2,637	28,964,292	33,945,646	34,510,449	4,981,354	5,546,157	564,802
1017	Blue Hill School Department	336	2,903,102	3,793,298	3,828,123	890,196	925,021	34,825
1281	Boothbay-Boothbay Hbr CSD	574	5,660,543	6,611,874	6,684,612	951,331	1,024,069	72,738
1018	Bowerbank School Department	10	83,115	102,373	104,015	19,259	20,900	1,641
1020	Bremen School Department	34	321,775	364,643	374,729	42,868	52,954	10,086
1021	Brewer School Department	1,356	14,902,399	16,857,515	17,134,405	1,955,116	2,232,006	276,890
1022	Bridgewater School Department	75	581,681	728,594	750,676	146,913	168,995	22,082
1023	Bristol School Department	291	2,920,703	3,731,573	3,752,518	810,870	831,815	20,945
1024	Brooklin School Department	100	980,434	1,665,107	1,676,525	684,673	696,091	11,418
1025	Brooksville School Department	99	1,013,973	1,716,487	1,727,912	702,514	713,938	11,425

SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
1026	Brunswick School Department	2,563	26,580,497	29,831,996	30,457,597	3,251,499	3,877,100	625,601
1028	Calais School Department	483	5,498,817	6,516,722	6,596,542	1,017,905	1,097,724	79,820
1029	Cape Elizabeth School Department	1,707	15,786,695	16,829,129	17,138,883	1,042,434	1,352,188	309,755
3131	Caratunk School Department	2	16,158	24,562	24,826	8,404	8,668	264
1194	Carrabassett Valley School Department	75	543,519	726,461	745,259	182,942	201,740	18,798
1031	Carroll Plt School Department	23	220,066	291,856	296,208	71,789	76,142	4,352
1032	Castine School Department	79	762,646	1,256,779	1,265,025	494,133	502,379	8,246
1033	Caswell School Department	56	392,071	867,852	877,333	475,781	485,262	9,481
1035	Charlotte School Department	53	515,495	890,694	911,451	375,198	395,956	20,757
3149	Chebeague Island School Department	41	618,418	884,236	886,903	265,818	268,486	2,668
1038	Cooper School Department	19	133,336	192,365	197,791	59,029	64,455	5,426
1039	Coplin Plt School Department	18	130,468	157,768	162,314	27,300	31,846	4,546
1040	Cranberry Isles School Department	17	165,781	281,123	283,466	115,342	117,685	2,343
1041	Crawford School Department	14	174,965	213,607	218,044	38,642	43,079	4,437
3136	Cutler School Department	83	775,507	1,428,042	1,432,629	652,535	657,122	4,587
1043	Damariscotta School Department	102	973,009	1,109,144	1,139,854	136,134	166,845	30,710
1045	Deblois School Department	9	81,314	95,969	98,241	14,655	16,927	2,272
1046	Dedham School Department	258	2,146,698	2,975,801	3,001,286	829,102	854,588	25,486
1289	Deer Isle-Stonington CSD	338	4,019,050	4,748,964	4,785,747	729,913	766,696	36,783
1047	Dennistown Plt School Department	1	6,820	8,912	9,266	2,092	2,445	354
1048	Dennysville School Department	49	425,836	536,439	550,875	110,603	125,039	14,436
1050	Drew Plt School Department	3	18,143	37,724	38,104	19,580	19,961	381
3129	East Machias School Department	257	2,103,624	3,242,527	3,260,492	1,138,903	1,156,868	17,965
1052	East Millinocket School Department	255	2,252,043	3,326,021	3,323,398	1,073,978	1,071,355	(2,623)
1288	East Range CSD	32	375,908	627,131	633,543	251,222	257,635	6,412
1053	Easton School Department	218	2,051,077	2,687,690	2,717,963	636,613	666,885	30,273





SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
1114	Nashville Plt School Department	7	39,657	51,342	52,904	11,685	13,247	1,563
1116	New Sweden School Department	82	697,615	1,306,675	1,321,934	609,060	624,318	15,259
1115	Newcastle School Department	82	743,144	849,654	874,193	106,511	131,049	24,538
1117	Nobleboro School Department	207	1,971,830	3,068,068	3,082,826	1,096,238	1,110,996	14,758
1118	Northfield School Department	20	159,972	209,446	215,345	49,473	55,372	5,899
1121	Orient School Department	14	128,806	181,521	185,723	52,714	56,917	4,203
1124	Orrington School Department	607	5,559,308	7,125,165	7,123,632	1,565,858	1,564,324	(1,533)
1125	Otis School Department	61	558,439	997,158	1,004,881	438,719	446,442	7,722
1127	Pembroke School Department	141	1,319,470	2,374,163	2,401,006	1,054,694	1,081,536	26,842
1128	Penobscot School Department	101	914,277	1,654,911	1,667,633	740,634	753,356	12,722
1129	Perry School Department	148	1,146,546	2,277,233	2,303,972	1,130,686	1,157,426	26,740
1272	Pleasant Point	152	1,584,115	2,537,528	2,550,584	953,413	966,469	13,055
1132	Pleasant Ridge Plt School Dept	11	90,333	123,350	125,944	33,017	35,611	2,594
3208	Portage Lake	39	504,511	584,137	601,760	79,626	97,249	17,623
1134	Portland Public Schools	6,889	74,519,393	82,593,230	83,947,715	8,073,836	9,428,321	1,354,485
1136	Princeton School Department	129	1,073,723	2,009,888	2,059,118	936,165	985,395	49,229
1141	Reed Plt School Department	22	207,442	259,785	266,350	52,343	58,909	6,566
1143	Robbinston School Department	88	731,396	1,370,764	1,386,362	639,368	654,966	15,598
1145	Roque Bluffs School Department	38	366,223	436,964	448,945	70,741	82,722	11,981
3152	RSU 01 - LKRSU	2,138	22,852,651	26,982,070	27,438,424	4,129,419	4,585,773	456,354
3156	RSU 02	2,242	20,241,771	24,649,702	25,145,622	4,407,931	4,903,851	495,920
1197	RSU 03/MSAD 03	1,471	17,537,416	20,665,282	21,126,181	3,127,866	3,588,764	460,899
3157	RSU 04	1,524	15,739,485	19,031,342	19,396,544	3,291,857	3,657,059	365,202
3158	RSU 05	1,910	19,503,762	21,618,996	22,061,299	2,115,234	2,557,537	442,303
1200	RSU 06/MSAD 06	3,954	40,311,397	46,802,851	47,583,814	6,491,455	7,272,417	780,962
1201	RSU 07/MSAD 07	67	731,909	1,157,639	1,164,315	425,731	432,406	6,676
1202	RSU 08/MSAD 08	179	2,714,310	3,270,457	3,288,948	556,147	574,638	18,491

SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
3206	RSU 09	2,348	27,944,549	31,709,353	32,336,167	3,764,804	4,391,618	626,814
3159	RSU 10	2,889	29,177,361	35,757,764	36,644,856	6,580,403	7,467,495	887,092
1205	RSU 11/MSAD 11	2,188	19,148,828	23,206,381	23,770,702	4,057,553	4,621,874	564,322
3160	RSU 12	1,998	20,665,992	24,036,889	24,543,392	3,370,898	3,877,400	506,503
3161	RSU 13	2,096	20,451,962	24,020,234	24,522,809	3,568,272	4,070,847	502,574
3162	RSU 14	3,390	34,817,237	39,591,051	40,255,559	4,773,814	5,438,321	664,508
1209	RSU 15/MSAD 15	1,983	18,663,822	21,718,717	22,153,582	3,054,895	3,489,760	434,865
3163	RSU 16	1,727	16,813,088	20,393,249	20,724,614	3,580,161	3,911,526	331,365
1211	RSU 17/MSAD 17	3,479	35,662,827	42,437,326	43,335,361	6,774,499	7,672,534	898,035
3164	RSU 18	3,246	29,454,763	33,930,591	34,747,178	4,475,828	5,292,415	816,587
3165	RSU 19	2,352	21,077,460	28,066,628	28,500,862	6,989,168	7,423,402	434,234
3166	RSU 20	2,580	27,393,870	31,332,008	32,132,442	3,938,139	4,738,572	800,434
3167	RSU 21	2,733	28,897,150	31,418,197	32,038,753	2,521,047	3,141,604	620,556
1216	RSU 22/MSAD 22	2,170	25,304,577	28,077,461	28,560,846	2,772,884	3,256,269	483,385
3168	RSU 23	4,087	37,600,172	44,983,702	45,751,772	7,383,530	8,151,600	768,071
3169	RSU 24	2,633	29,405,989	33,489,243	34,315,088	4,083,254	4,909,099	825,846
3170	RSU 25	1,170	11,569,143	13,502,982	13,822,080	1,933,839	2,252,937	319,097
3171	RSU 26	1,508	15,126,515	17,174,299	17,475,286	2,047,784	2,348,771	300,987
1222	RSU 28/MSAD 28	735	7,401,452	7,858,895	8,218,723	457,443	817,271	359,828
1223	RSU 29/MSAD 29	1,317	11,466,741	14,098,657	14,546,052	2,631,915	3,079,311	447,396
1224	RSU 30/MSAD 30	255	2,533,706	4,049,944	4,042,294	1,516,237	1,508,588	(7,650)
1225	RSU 31/MSAD 31	546	5,248,429	7,106,084	7,178,836	1,857,655	1,930,407	72,752
1226	RSU 32/MSAD 32	294	3,612,983	4,613,061	4,703,055	1,000,078	1,090,071	89,994
1227	RSU 33/MSAD 33	278	2,582,382	3,182,772	3,275,012	600,390	692,630	92,240
3172	RSU 34	1,321	12,929,008	15,432,173	15,825,057	2,503,165	2,896,049	392,884
1229	RSU 35/MSAD 35	2,450	23,988,135	26,732,203	27,222,100	2,744,068	3,233,965	489,897
1231	RSU 37/MSAD 37	720	6,946,277	8,616,857	8,787,968	1,670,580	1,841,691	171,111



SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
3173	RSU 38	1,237	11,269,107	12,848,831	13,277,066	1,579,723	2,007,958	428,235
3174	RSU 39	1,605	15,072,517	17,664,642	18,171,052	2,592,126	3,098,535	506,409
1234	RSU 40/MSAD 40	1,872	19,464,105	22,562,015	23,067,131	3,097,910	3,603,027	505,117
1235	RSU 41/MSAD 41	675	6,223,736	8,509,046	8,567,670	2,285,309	2,343,934	58,624
1236	RSU 42/MSAD 42	383	3,109,735	4,196,562	4,246,508	1,086,826	1,136,773	49,946
1238	RSU 44/MSAD 44	758	7,556,127	9,138,672	9,280,205	1,582,545	1,724,078	141,533
1239	RSU 45/MSAD 45	378	3,073,998	4,209,235	4,285,749	1,135,236	1,211,750	76,514
1243	RSU 49/MSAD 49	2,401	20,778,414	25,795,583	26,389,038	5,017,169	5,610,625	593,455
3199	RSU 50	767	7,321,985	9,683,095	9,846,634	2,361,110	2,524,650	163,539
1245	RSU 51/MSAD 51	2,128	22,517,834	23,411,229	23,904,664	893,395	1,386,830	493,435
1246	RSU 52/MSAD 52	2,081	20,019,161	24,148,697	24,566,358	4,129,535	4,547,197	417,661
1247	RSU 53/MSAD 53	1,069	8,719,692	10,836,562	11,094,260	2,116,870	2,374,568	257,698
1248	RSU 54/MSAD 54	2,717	29,732,494	34,303,928	35,156,883	4,571,434	5,424,389	852,955
1249	RSU 55/MSAD 55	1,186	11,726,784	14,049,102	14,344,042	2,322,318	2,617,258	294,940
1251	RSU 57/MSAD 57	3,397	32,736,027	38,658,989	39,368,662	5,922,962	6,632,635	709,673
1252	RSU 58/MSAD 58	621	5,715,512	7,302,753	7,425,307	1,587,240	1,709,795	122,555
1253	RSU 59/MSAD 59	971	8,804,472	10,666,703	10,898,659	1,862,231	2,094,187	231,955
1254	RSU 60/MSAD 60	3,103	31,138,641	36,428,335	37,270,370	5,289,694	6,131,728	842,034
1255	RSU 61/MSAD 61	1,891	19,606,289	24,167,629	24,633,727	4,561,339	5,027,437	466,098
1257	RSU 63/MSAD 63	941	8,368,441	10,473,213	10,543,192	2,104,771	2,174,751	69,980
1258	RSU 64/MSAD 64	1,205	9,997,744	13,354,266	13,573,886	3,356,522	3,576,142	219,620
1259	RSU 65/MSAD 65	-	-	-	-	-	-	-
3175	RSU 67	1,116	9,404,406	13,132,560	13,325,739	3,728,154	3,921,333	193,179
1261	RSU 68/MSAD 68	987	9,096,410	12,087,131	12,159,832	2,990,722	3,063,422	72,700
1262	RSU 70/MSAD 70	501	4,893,315	6,185,548	6,315,826	1,292,233	1,422,511	130,279
1264	RSU 72/MSAD 72	1,221	11,809,353	14,067,373	14,348,814	2,258,020	2,539,461	281,441
3198	RSU 73	1,623	14,982,975	18,211,446	18,630,491	3,228,470	3,647,515	419,045

SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
1265	RSU 74/MSAD 74	747	7,539,233	9,320,993	9,449,532	1,781,761	1,910,299	128,539
1266	RSU 75/MSAD 75	2,692	29,024,145	32,959,535	33,512,012	3,935,390	4,487,868	552,477
3184	RSU 78	200	1,925,072	2,362,870	2,406,557	437,798	481,485	43,688
1196	RSU 79/MSAD 01	1,927	17,878,712	20,959,243	21,553,925	3,080,532	3,675,213	594,681
1198	RSU 80/MSAD 04	686	6,433,672	8,413,443	8,467,471	1,979,771	2,033,799	54,028
1206	RSU 82/MSAD 12	154	1,501,772	2,192,775	2,236,620	691,004	734,849	43,845
1207	RSU 83/MSAD 13	208	2,029,691	2,825,888	2,839,618	796,197	809,928	13,731
1208	RSU 84/MSAD 14	114	1,103,078	1,935,362	1,955,180	832,283	852,102	19,818
1213	RSU 85/MSAD 19	127	1,157,984	2,241,120	2,264,710	1,083,136	1,106,726	23,590
1214	RSU 86/MSAD 20	565	4,916,701	6,383,927	6,520,738	1,467,226	1,604,037	136,811
1217	RSU 87/MSAD 23	934	8,061,498	11,116,870	11,190,289	3,055,372	3,128,791	73,420
1218	RSU 88/MSAD 24	339	3,522,751	4,142,544	4,289,668	619,793	766,917	147,124
1148	Sanford School Department	3,167	30,816,273	37,249,821	37,862,233	6,433,548	7,045,960	612,412
1149	Scarborough School Department	3,314	32,106,152	34,899,257	35,705,332	2,793,105	3,599,180	806,075
3109	Seboeis Plt School Department	-	-	-	-	-	-	-
1150	Sedgwick School Department	138	1,218,595	2,288,456	2,305,625	1,069,862	1,087,030	17,168
1151	Shirley School Department	16	180,867	220,050	222,676	39,183	41,809	2,626
1153	South Bristol School Department	99	959,248	1,650,940	1,660,584	691,692	701,336	9,644
1155	South Portland School Department	3,103	31,797,516	35,308,929	36,055,029	3,511,412	4,257,513	746,101
1154	Southport School Department	53	468,848	839,738	843,014	370,890	374,166	3,276
1156	Southwest Harbor School Department	132	1,455,171	2,077,638	2,096,306	622,467	641,135	18,668
1159	Surry School Department	160	1,462,366	2,629,376	2,667,167	1,167,010	1,204,800	37,790
1160	Talmadge School Department	12	110,284	145,655	149,850	35,371	39,566	4,194
1161	The Forks Plt School Dept	5	40,268	47,840	49,243	7,572	8,975	1,403
1162	Tremont School Department	118	1,118,733	1,821,455	1,839,592	702,722	720,859	18,137
1163	Trenton School Department	159	1,797,295	2,843,797	2,890,315	1,046,502	1,093,020	46,518

SAU ID	SAU Name	Pupils	Total EPS Funding	Total EB Funding	Total Comm. EB Funding	Differences		
						EB minus EPS	EB Comm. Minus EPS	EB Comm. Minus EB
1164	Upton School Department	5	42,356	66,772	68,008	24,416	25,652	1,236
1165	Vanceboro School Department	23	202,966	381,046	385,343	178,080	182,377	4,297
1166	Vassalboro School Department	683	6,052,545	7,613,456	7,727,084	1,560,911	1,674,539	113,628
1168	Waite School Department	9	90,057	119,211	121,616	29,154	31,559	2,405
1170	Waterville Public Schools	1,835	17,754,392	20,784,267	21,297,878	3,029,875	3,543,486	513,611
1293	Wells-Ogunquit CSD	1,399	13,795,054	15,063,323	15,358,290	1,268,270	1,563,237	294,967
1173	Wesley School Department	9	100,261	173,089	175,158	72,828	74,897	2,069
3106	West Forks Plt School Department	3	30,624	36,596	37,564	5,972	6,940	968
1175	Westbrook School Department	2,458	26,401,310	31,179,115	31,709,123	4,777,805	5,307,814	530,009
1176	Westmanland School Department	1	24,223	26,296	26,662	2,072	2,438	366
3138	Whiting School Department	51	502,739	917,515	922,708	414,776	419,969	5,193
1179	Whitneyville School Department	23	203,765	261,282	268,415	57,517	64,650	7,133
1180	Willimantic School Department	14	131,293	174,030	176,863	42,736	45,569	2,833
1183	Winslow Schools	1,202	11,012,362	12,384,507	12,770,048	1,372,145	1,757,686	385,541
1185	Winthrop Public Schools	874	8,437,946	9,753,161	10,044,075	1,315,215	1,606,128	290,913
1187	Woodland School Department	196	1,623,958	2,726,903	2,758,846	1,102,945	1,134,888	31,943
1188	Woodville School Department	42	387,403	527,799	535,227	140,396	147,824	7,428
1190	Yarmouth Schools	1,397	13,545,502	14,253,827	14,574,089	708,324	1,028,586	320,262
1191	York School Department	1,883	18,345,542	19,920,454	20,302,812	1,574,912	1,957,270	382,359

**Table B2: SAU Outcomes for Per Pupil Resources, EPS, EB and Committee EB Simulations**  
**Assumes RTR of 7.8 mills**

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1000	Acton School Department	381	9,967	13,020	13,174	3,053	3,208	155
1284	Airline CSD	63	10,511	17,817	17,937	7,305	7,425	120
1001	Alexander School Department	57	8,605	16,052	16,222	7,447	7,617	170
1004	Appleton School Department	139	8,706	13,578	13,896	4,872	5,190	317
1007	Auburn School Department	3,653	9,126	11,523	11,762	2,397	2,636	240
1008	Augusta Public Schools	2,225	10,760	12,693	12,975	1,933	2,215	282
1009	Baileyville School Department	256	8,151	11,112	11,250	2,961	3,099	138
1010	Bancroft School Department	9	10,467	13,594	13,896	3,127	3,430	302
1011	Bangor School Department	3,688	9,595	11,427	11,642	1,832	2,047	215
1012	Bar Harbor School Department	426	9,016	10,295	10,510	1,279	1,493	214
1192	Baring Plt School Department	37	8,997	10,895	11,204	1,899	2,207	309
1014	Beals School Department	50	7,360	15,923	16,088	8,563	8,728	164
1195	Beaver Cove School Department	12	7,447	9,559	9,781	2,112	2,334	222
1015	Beddington School Department	2	16,829	21,399	21,763	4,570	4,934	364
1016	Biddeford School Department	2,637	10,983	12,872	13,086	1,889	2,103	214
1017	Blue Hill School Department	336	8,632	11,278	11,382	2,647	2,750	104
1281	Boothbay-Boothbay Hbr CSD	574	9,867	11,526	11,652	1,658	1,785	127
1018	Bowerbank School Department	10	8,749	10,776	10,949	2,027	2,200	173
1020	Bremen School Department	34	9,605	10,885	11,186	1,280	1,581	301
1021	Brewer School Department	1,356	10,994	12,436	12,641	1,442	1,647	204

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1022	Bridgewater School Department	75	7,808	9,780	10,076	1,972	2,268	296
1023	Bristol School Department	291	10,054	12,845	12,917	2,791	2,863	72
1024	Brooklin School Department	100	9,854	16,735	16,849	6,881	6,996	115
1025	Brooksville School Department	99	10,294	17,426	17,542	7,132	7,248	116
1026	Brunswick School Department	2,563	10,373	11,642	11,886	1,269	1,513	244
1028	Calais School Department	483	11,389	13,497	13,662	2,108	2,274	165
1029	Cape Elizabeth School Department	1,707	9,250	9,861	10,042	611	792	181
3131	Caratunk School Department	2	9,695	14,737	14,896	5,043	5,201	158
1194	Carrabassett Valley School Department	75	7,296	9,751	10,003	2,456	2,708	252
1031	Carroll Plt School Department	23	9,638	12,782	12,973	3,144	3,335	191
1032	Castine School Department	79	9,654	15,909	16,013	6,255	6,359	104
1033	Caswell School Department	56	7,001	15,497	15,667	8,496	8,665	169
1035	Charlotte School Department	53	9,696	16,753	17,143	7,057	7,447	390
3149	Chebeague Island School Department	41	15,207	21,743	21,809	6,537	6,602	66
1038	Cooper School Department	19	7,018	10,124	10,410	3,107	3,392	286
1039	Coplin Plt School Department	18	7,248	8,765	9,017	1,517	1,769	253
1040	Cranberry Isles School Department	17	10,047	17,038	17,180	6,990	7,132	142
1041	Crawford School Department	14	12,802	15,630	15,954	2,827	3,152	325
3136	Cutler School Department	83	9,362	17,240	17,295	7,878	7,933	55
1043	Damariscotta School Department	102	9,539	10,874	11,175	1,335	1,636	301
1045	Deblois School Department	9	9,035	10,663	10,916	1,628	1,881	252
1046	Dedham School Department	258	8,326	11,542	11,640	3,216	3,314	99
1289	Deer Isle-Stonington CSD	338	11,891	14,050	14,159	2,160	2,268	109
1047	Dennistown Plt School Department	1	5,846	7,639	7,942	1,793	2,096	303
1048	Dennysville School Department	49	8,632	10,874	11,166	2,242	2,535	293

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1050	Drew Plt School Department	3	5,443	11,317	11,431	5,874	5,988	114
3129	East Machias School Department	257	8,185	12,617	12,687	4,432	4,501	70
1052	East Millinocket School Department	255	8,849	13,069	13,059	4,220	4,210	(10)
1288	East Range CSD	32	11,626	19,396	19,594	7,770	7,968	198
1053	Easton School Department	218	9,409	12,329	12,468	2,920	3,059	139
1054	Eastport School Department	131	8,424	15,316	15,483	6,892	7,059	167
1055	Edgecomb School Department	183	11,707	17,539	17,608	5,832	5,901	69
1057	Falmouth School Department	2,142	11,122	11,643	11,869	521	747	226
1058	Fayette School Department	152	8,229	15,698	15,768	7,469	7,539	70
1294	Five Town CSD	651	13,429	14,296	14,627	867	1,198	331
1094	Frenchboro School Department	13	6,980	14,347	14,476	7,367	7,496	129
1061	Georgetown School Department	133	9,584	17,948	17,894	8,364	8,311	(54)
1062	Gilead School Department	32	9,178	11,709	11,960	2,531	2,782	251
1064	Glenwood Plt School Dept.	1	5,606	6,245	6,356	639	750	111
1065	Gorham School Department	2,673	10,680	11,605	11,797	924	1,117	193
1067	Grand Isle School Department	56	7,296	10,078	10,370	2,782	3,074	292
1068	Grand Lake Stream Plt School Dept	9	7,161	9,445	9,752	2,285	2,591	306
1290	Great Salt Bay CSD	377	9,359	11,533	11,721	2,174	2,362	188
1069	Greenbush School Department	221	8,778	15,257	15,221	6,479	6,442	(36)
1070	Greenville School Department	184	9,981	14,175	14,171	4,194	4,191	(3)
1073	Harmony School Department	143	9,377	16,860	16,935	7,483	7,558	75
1074	Hermon School Department	932	9,480	10,792	11,010	1,312	1,530	218
1076	Highland Plt School Department	10	8,115	10,871	11,105	2,757	2,991	234
1077	Hope School Department	166	8,453	12,282	12,370	3,829	3,917	88
1270	Indian Island	151	6,415	14,640	14,708	8,225	8,293	67

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1271	Indian Township	186	10,114	15,859	15,919	5,745	5,806	61
1078	Isle Au Haut School Department	-	-	-	-	-	-	-
1079	Islesboro School Department	70	11,306	17,987	18,096	6,682	6,791	109
1081	Jefferson School Department	300	14,473	17,621	17,735	3,148	3,262	114
1082	Jonesboro School Department	81	8,176	15,945	16,129	7,769	7,954	184
1083	Jonesport School Department	132	6,496	13,480	13,630	6,984	7,134	150
1084	Kingsbury Plt School Department	1	6,699	7,998	8,257	1,299	1,559	259
1085	Kittery School Department	1,016	10,887	12,142	12,325	1,255	1,438	183
3104	Lake View Plt. School Department	-	-	-	-	-	-	-
1086	Lakeville School Department	6	6,032	9,684	9,935	3,652	3,903	251
1088	Lewiston School Department	4,996	10,651	13,167	13,353	2,516	2,701	185
1090	Lincoln Plt School Department	-	-	-	-	-	-	-
1091	Lincolnvile School Department	193	11,872	13,915	14,087	2,043	2,215	172
1092	Lisbon School Department	1,333	9,559	11,482	11,763	1,923	2,204	281
1135	Long Island School Department	32	11,184	18,883	18,827	7,698	7,643	(55)
3130	Lowell School Department	43	8,728	11,412	11,665	2,685	2,937	252
1095	Machias School Department	318	8,872	12,221	12,511	3,349	3,639	290
3137	Machiasport School Department	96	9,168	18,107	18,184	8,939	9,016	78
1096	Macwahoc Plt School Dept	8	9,539	12,667	12,951	3,128	3,412	283
1097	Madawaska School Department	546	10,710	11,895	12,131	1,185	1,421	236
1102	Marshfield School Department	81	6,788	8,623	8,927	1,835	2,139	304
1104	Meddybemps School Department	14	6,913	8,921	9,213	2,008	2,300	292
1193	Medford School Department	33	8,198	10,908	11,093	2,711	2,895	185
1105	Medway School Department	194	8,374	15,921	15,877	7,547	7,503	(44)
1106	Milford School Department	441	9,096	12,245	12,247	3,149	3,152	2

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1107	Millinocket School Department	526	8,544	12,307	12,348	3,763	3,805	41
1109	Monhegan Plt School Dept	6	5,425	13,317	13,363	7,892	7,938	45
1292	Moosabec CSD	75	9,135	16,423	16,715	7,288	7,580	293
1112	Mount Desert School Department	154	9,997	13,904	14,074	3,907	4,077	170
1204	MSAD 10	18	10,773	12,547	12,865	1,774	2,092	318
1221	MSAD 27	986	9,464	10,568	10,857	1,104	1,393	289
1240	MSAD 46	963	12,255	14,812	14,983	2,557	2,728	171
1267	MSAD 76	48	11,291	18,303	18,410	7,011	7,118	107
1283	Mt Desert CSD	424	9,886	11,283	11,481	1,397	1,595	198
1114	Nashville Plt School Department	7	5,665	7,335	7,558	1,669	1,892	223
1116	New Sweden School Department	82	8,542	16,000	16,187	7,458	7,645	187
1115	Newcastle School Department	82	9,118	10,425	10,726	1,307	1,608	301
1117	Nobleboro School Department	207	9,526	14,822	14,893	5,296	5,367	71
1118	Northfield School Department	20	8,204	10,741	11,043	2,537	2,840	303
1121	Orient School Department	14	9,092	12,813	13,110	3,721	4,018	297
1124	Orrington School Department	607	9,166	11,748	11,745	2,582	2,579	(3)
1125	Otis School Department	61	9,155	16,347	16,473	7,192	7,319	127
1127	Pembroke School Department	141	9,391	16,898	17,089	7,507	7,698	191
1128	Penobscot School Department	101	9,022	16,331	16,457	7,309	7,434	126
1129	Perry School Department	148	7,747	15,387	15,567	7,640	7,820	181
1272	Pleasant Point	152	10,410	16,676	16,762	6,266	6,351	86
1132	Pleasant Ridge Plt School Dept	11	7,971	10,884	11,113	2,913	3,142	229
3208	Portage Lake	39	12,982	15,030	15,484	2,049	2,502	453
1134	Portland Public Schools	6,889	10,818	11,990	12,186	1,172	1,369	197
1136	Princeton School Department	129	8,334	15,601	15,983	7,266	7,649	382



SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1141	Reed Plt School Department	22	9,574	11,990	12,293	2,416	2,719	303
1143	Robbinston School Department	88	8,311	15,577	15,754	7,266	7,443	177
1145	Roque Bluffs School Department	38	9,766	11,652	11,972	1,886	2,206	319
3152	RSU 01 - LKRSU	2,138	10,690	12,622	12,836	1,932	2,145	213
3156	RSU 02	2,242	9,030	10,997	11,218	1,967	2,188	221
1197	RSU 03/MSAD 03	1,471	11,921	14,047	14,360	2,126	2,439	313
3157	RSU 04	1,524	10,328	12,488	12,727	2,160	2,400	240
3158	RSU 05	1,910	10,211	11,319	11,550	1,107	1,339	232
1200	RSU 06/MSAD 06	3,954	10,195	11,837	12,034	1,642	1,839	198
1201	RSU 07/MSAD 07	67	11,006	17,408	17,508	6,402	6,502	100
1202	RSU 08/MSAD 08	179	15,206	18,322	18,425	3,116	3,219	104
3206	RSU 09	2,348	11,903	13,507	13,774	1,604	1,871	267
3159	RSU 10	2,889	10,099	12,376	12,684	2,278	2,585	307
1205	RSU 11/MSAD 11	2,188	8,750	10,605	10,862	1,854	2,112	258
3160	RSU 12	1,998	10,342	12,029	12,283	1,687	1,940	253
3161	RSU 13	2,096	9,758	11,461	11,701	1,703	1,942	240
3162	RSU 14	3,390	10,271	11,679	11,875	1,408	1,604	196
1209	RSU 15/MSAD 15	1,983	9,412	10,952	11,172	1,541	1,760	219
3163	RSU 16	1,727	9,738	11,812	12,004	2,074	2,266	192
1211	RSU 17/MSAD 17	3,479	10,252	12,200	12,458	1,948	2,206	258
3164	RSU 18	3,246	9,075	10,454	10,705	1,379	1,631	252
3165	RSU 19	2,352	8,962	11,933	12,118	2,972	3,156	185
3166	RSU 20	2,580	10,618	12,144	12,454	1,526	1,837	310
3167	RSU 21	2,733	10,573	11,495	11,722	922	1,149	227
1216	RSU 22/MSAD 22	2,170	11,659	12,937	13,160	1,278	1,500	223

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
3168	RSU 23	4,087	9,201	11,007	11,195	1,807	1,995	188
3169	RSU 24	2,633	11,169	12,720	13,034	1,551	1,865	314
3170	RSU 25	1,170	9,891	11,544	11,817	1,653	1,926	273
3171	RSU 26	1,508	10,031	11,389	11,588	1,358	1,558	200
1222	RSU 28/MSAD 28	735	10,075	10,697	11,187	623	1,112	490
1223	RSU 29/MSAD 29	1,317	8,707	10,705	11,045	1,998	2,338	340
1224	RSU 30/MSAD 30	255	9,956	15,913	15,883	5,958	5,928	(30)
1225	RSU 31/MSAD 31	546	9,615	13,019	13,152	3,403	3,537	133
1226	RSU 32/MSAD 32	294	12,275	15,673	15,979	3,398	3,704	306
1227	RSU 33/MSAD 33	278	9,300	11,463	11,795	2,162	2,494	332
3172	RSU 34	1,321	9,785	11,679	11,977	1,894	2,192	297
1229	RSU 35/MSAD 35	2,450	9,792	10,913	11,113	1,120	1,320	200
1231	RSU 37/MSAD 37	720	9,643	11,962	12,200	2,319	2,557	238
3173	RSU 38	1,237	9,109	10,386	10,732	1,277	1,623	346
3174	RSU 39	1,605	9,389	11,004	11,319	1,615	1,930	315
1234	RSU 40/MSAD 40	1,872	10,398	12,053	12,323	1,655	1,925	270
1235	RSU 41/MSAD 41	675	9,227	12,615	12,702	3,388	3,475	87
1236	RSU 42/MSAD 42	383	8,123	10,962	11,092	2,839	2,969	130
1238	RSU 44/MSAD 44	758	9,975	12,064	12,251	2,089	2,276	187
1239	RSU 45/MSAD 45	378	8,129	11,131	11,333	3,002	3,204	202
1243	RSU 49/MSAD 49	2,401	8,654	10,744	10,991	2,090	2,337	247
3199	RSU 50	767	9,552	12,633	12,846	3,080	3,294	213
1245	RSU 51/MSAD 51	2,128	10,582	11,002	11,233	420	652	232
1246	RSU 52/MSAD 52	2,081	9,622	11,606	11,807	1,985	2,185	201
1247	RSU 53/MSAD 53	1,069	8,157	10,137	10,378	1,980	2,221	241

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1248	RSU 54/MSAD 54	2,717	10,944	12,627	12,941	1,683	1,997	314
1249	RSU 55/MSAD 55	1,186	9,890	11,849	12,098	1,959	2,207	249
1251	RSU 57/MSAD 57	3,397	9,636	11,380	11,589	1,744	1,952	209
1252	RSU 58/MSAD 58	621	9,204	11,760	11,957	2,556	2,753	197
1253	RSU 59/MSAD 59	971	9,067	10,985	11,224	1,918	2,157	239
1254	RSU 60/MSAD 60	3,103	10,034	11,739	12,010	1,705	1,976	271
1255	RSU 61/MSAD 61	1,891	10,366	12,778	13,025	2,412	2,658	246
1257	RSU 63/MSAD 63	941	8,896	11,134	11,208	2,238	2,312	74
1258	RSU 64/MSAD 64	1,205	8,298	11,084	11,266	2,786	2,968	182
1259	RSU 65/MSAD 65	-	-	-	-	-	-	-
3175	RSU 67	1,116	8,429	11,771	11,944	3,342	3,515	173
1261	RSU 68/MSAD 68	987	9,213	12,242	12,316	3,029	3,103	74
1262	RSU 70/MSAD 70	501	9,764	12,342	12,602	2,578	2,838	260
1264	RSU 72/MSAD 72	1,221	9,669	11,518	11,748	1,849	2,079	230
3198	RSU 73	1,623	9,232	11,221	11,479	1,989	2,247	258
1265	RSU 74/MSAD 74	747	10,095	12,481	12,653	2,386	2,558	172
1266	RSU 75/MSAD 75	2,692	10,783	12,245	12,450	1,462	1,667	205
3184	RSU 78	200	9,625	11,814	12,033	2,189	2,407	218
1196	RSU 79/MSAD 01	1,927	9,276	10,875	11,183	1,598	1,907	309
1198	RSU 80/MSAD 04	686	9,385	12,273	12,352	2,888	2,967	79
1206	RSU 82/MSAD 12	154	9,752	14,239	14,524	4,487	4,772	285
1207	RSU 83/MSAD 13	208	9,750	13,575	13,641	3,825	3,891	66
1208	RSU 84/MSAD 14	114	9,705	17,027	17,201	7,322	7,496	174
1213	RSU 85/MSAD 19	127	9,106	17,623	17,809	8,517	8,703	186
1214	RSU 86/MSAD 20	565	8,702	11,299	11,541	2,597	2,839	242

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1217	RSU 87/MSAD 23	934	8,630	11,900	11,979	3,271	3,349	79
1218	RSU 88/MSAD 24	339	10,392	12,220	12,654	1,828	2,262	434
1148	Sanford School Department	3,167	9,731	11,762	11,956	2,032	2,225	193
1149	Scarborough School Department	3,314	9,688	10,531	10,774	843	1,086	243
3109	Seboeis Plt School Department	-	-	-	-	-	-	-
1150	Sedgwick School Department	138	8,820	16,563	16,687	7,743	7,868	124
1151	Shirley School Department	16	11,304	13,753	13,917	2,449	2,613	164
1153	South Bristol School Department	99	9,689	16,676	16,774	6,987	7,084	97
1155	South Portland School Department	3,103	10,247	11,378	11,619	1,132	1,372	240
1154	Southport School Department	53	8,874	15,894	15,956	7,020	7,082	62
1156	Southwest Harbor School Department	132	11,066	15,800	15,941	4,734	4,876	142
1159	Surry School Department	160	9,140	16,434	16,670	7,294	7,530	236
1160	Talmadge School Department	12	8,942	11,810	12,150	2,868	3,208	340
1161	The Forks Plt School Dept	5	8,054	9,568	9,849	1,514	1,795	281
1162	Tremont School Department	118	9,521	15,502	15,656	5,981	6,135	154
1163	Trenton School Department	159	11,339	17,942	18,235	6,603	6,896	293
1164	Upton School Department	5	9,076	14,308	14,573	5,232	5,497	265
1165	Vanceboro School Department	23	8,825	16,567	16,754	7,743	7,929	187
1166	Vassalboro School Department	683	8,862	11,147	11,313	2,285	2,452	166
1168	Waite School Department	9	10,595	14,025	14,308	3,430	3,713	283
1170	Waterville Public Schools	1,835	9,675	11,327	11,606	1,651	1,931	280
1293	Wells-Ogunquit CSD	1,399	9,859	10,766	10,977	906	1,117	211
1173	Wesley School Department	9	11,140	19,232	19,462	8,092	8,322	230
3106	West Forks Plt School Department	3	9,671	11,557	11,862	1,886	2,192	306
1175	Westbrook School Department	2,458	10,740	12,684	12,900	1,944	2,159	216

SAU ID	SAU Name	Pupils	Total EPS Funding Per Pupil	Total EB Funding Per Pupil	Total Comm. EB Funding Per Pupil	Differences		
						EB minus EPS	Comm. EB minus EPS	Comm. EB minus EB
1176	Westmanland School Department	1	24,223	26,296	26,662	2,072	2,438	366
3138	Whiting School Department	51	9,858	17,990	18,092	8,133	8,235	102
1179	Whitneyville School Department	23	8,796	11,278	11,586	2,483	2,791	308
1180	Willimantic School Department	14	9,378	12,431	12,633	3,053	3,255	202
1183	Winslow Schools	1,202	9,166	10,308	10,628	1,142	1,463	321
1185	Winthrop Public Schools	874	9,658	11,163	11,496	1,505	1,838	333
1187	Woodland School Department	196	8,307	13,948	14,112	5,642	5,805	163
1188	Woodville School Department	42	9,298	12,667	12,845	3,370	3,548	178
1190	Yarmouth Schools	1,397	9,697	10,204	10,434	507	736	229
1191	York School Department	1,883	9,744	10,580	10,783	836	1,040	203

## **APPENDIX C:**

### **MEMO ON TOTAL EPS SPENDING BETWEEN LAWRENCE O. PICUS AND ASSOCIATES AND THE MAINE DEPARTMENT OF EDUCATION**



## ***MEMORANDUM OF UNDERSTANDING***

To: Wendy Cherubini, Maine Office of Program Evaluation and Government Accountability (OPEGA)

From: Lawrence O. Picus on behalf of Lawrence O. Picus and Associates  
Jim Rier on behalf of Maine Department of Education

Subject: **Agreement on Cost of Education Comparison**

Date: October 24, 2013

During meetings with the Joint Legislative Committee on Education and Cultural Affairs (hereinafter the Committee) on August 1, 2013, the Committee requested that Lawrence O. Picus and Associates and the Maine Department of Education (DOE) agree on a consistent cost of education for the 2012-13 school year. A single figure of reference would aid discussion on the differences between the Essential Programs and Services (EPS) and Evidence Based (EB) models of school finance.

Staff of Lawrence O. Picus and Associates and the DOE selected a cost of education of \$1,993,219,722. This figure is shown on Jim Rier's 6-28-13 Annual Funding Graph (Education Funding Law Implementation, State/Local Share of Education Costs). This figure represents the 2012-13 education budget, which:

1. Excludes teacher retirement
2. Excludes Local Only Debt
3. Includes state-only education revenue (i.e. revenue for education that is not dispersed to SAUs)
4. Represents 100 percent funded EPS

Each of the budgetary components of the \$1,993,219,722 cost of education is detailed in Lawrence O. Picus and Associate's excel-based model (ME Picus and Assoc EB Model.xls, State Output worksheet), which makes line-by-line component comparisons to illustrate the differences between the EPS and EB approaches.

## **APPENDIX D:**

### **OCTOBER 29 MEMO TO THE JOINT COMMITTEE (REVISED DECEMBER 21, 2013)**







# **Analysis Of Maine School Administrative Units Funding And Tax Rates Under Alternative Evidence Based Model Simulations**

Lawrence O. Picus  
Michael Goetz  
Allan Odden

October 29, 2013  
(Revised December 21,, 2013)



# **ANALYSIS OF MAINE SCHOOL ADMINISTRATIVE UNITS FUNDING AND TAX RATES UNDER ALTERNATIVE EVIDENCE BASED MODEL SIMULATIONS**

**Presented to the  
Maine Legislature's  
Joint Standing Committee on Education and Cultural Affairs**

**October 29, 2013  
(Revised December 21, 2013)**

## **INTRODUCTION**

As part of Lawrence O. Picus and Associates' review of Maine's Essential Programs and Services (EPS) school funding system, we were asked to provide the Joint Standing Committee on Education and Cultural Affairs (hereinafter referred to as the Committee) with an analysis of the funding and tax implications of several alternative implementation options for the Evidence Based model (EB) we proposed for Maine. To accomplish this, we have developed a distribution model and incorporated it into the Evidence-Based simulation model that is one of the final products for this study. The purpose of the distribution model is to **estimate** the impact of alternative funding distribution choices on the amount of state and local revenue each SAU would receive as well as to provide an estimate of the local tax rate needed for each SAU to fund its local share of the total EB revenue. The model allows state legislators to vary funding system parameters in a number of ways including changes in:

- The parameters and formulas of the EB model (e.g. changing class sizes or the allocation of certified teachers to serve struggling students)
- The state required tax rate for raising the local share of EB revenue
- The percentage of total EB funding provided by the State
- Whether or not to include a measure of income in the computation of each SAU's fiscal capacity.

This memo summarizes the findings from four simulations we were asked to run at the August 1, 2013 Committee meeting. At our meeting on October 29, we will explain these findings in detail and work with the Committee to run a series of alternative simulations based on their interest and concerns.

At the August 1, 2013 Committee meeting we were also asked to reconcile our model's calculation of total state and local education funding with the funding level displayed on acting Commissioner Rier's annual funding graph. Reconciling these figures was a complex undertaking and we have attached a Memorandum of Understanding between the Department of Education and Lawrence O. Picus and Associates indicating how the figures were reconciled and stating that both parties agree with the approach and results of this effort.

Before proceeding to the findings, it is important to emphasize that the results of the simulations reported here (and any others run for the Committee on October 29<sup>th</sup>) are only **estimates** of the revenue and tax impact on each SAU. Should the exact parameters simulated in one of these options become the operational definition of the state's education funding system in the future, actual revenues and tax rates will vary as student enrollments, property values, local tax decisions, and other state programs not specifically part of the EB or EPS models are certain to change by the time a new model is fully in place.

Thus the purpose of these simulations is not to show actual revenue distributions – that is the role of the Maine Department of Education – but rather to provide detailed estimates of the impact of these changes. The simulations will allow members of the Committee and the Legislature to understand the fiscal and tax impact of alternative approaches, and have a close approximation of the total state and local costs of the system, as well as the distribution of state and local revenues to each SAU. As the Committee establishes policy goals for education funding in the future, this model will demonstrate the impact of those policies on each SAU.

In the presentation that follows, recall that we are simulating state and local aid and tax rates for the 2012-13 school year. The results of each simulation are thus comparable to actual state and local revenues for that year. The data set we use for the simulations includes EPS funding at 97% as well as adjustments for the curtailment of \$12.5 million enacted in the middle of the 2012-13 school year. As a result, our base simulation uses a required local tax rate (RTR) of 7.8 mills to fund the EB model.

## **MODELING ALTERNATIVE EVIDENCE BASED AND TAX RATE OPTIONS**

In the presentation below, we exhibit the output from four simulations. The discussion includes data on state and local total revenues and provides five analytic tables for each simulation that offer more detailed analysis of the scenario impact. This memo describes succinctly the impact of each simulation on SAUs and on the distribution of total funding between the state and local sources. The analytic tables are included for review, and we plan to go over them in detail with the Committee on October 29<sup>th</sup>. Note that for any other simulation options the Committee would like to see, our model computes these same five tables in real time for review and discussion.

In viewing the simulations it is important to note that our model initially requires all SAUs to levy at least 7.8 mills for the EB portion of the formula, but then reduces this Required Tax Rate (RTR) for high wealth SAUs to a rate that just raises the revenue required to fund the EB level. This is the same approach used in the current system.

However, our model does not allow SAUs to levy a tax rate lower than what is necessary to raise the EB funding level. This is different from current state practice and as a result the simulation increases the RTR of several SAUs and requires them to levy taxes to raise the EB level. What this means is that the simulation assumes every SAU in the state will fully fund the EB estimated funding level regardless of past practice. We made this assumption because current state law has established a system whereby all SAUs will be required to levy the RTR by 2015.

In addition to the RTR necessary to raise the EB funding level, many SAUs have an incremental tax rate to raise revenues above the EB level. This reflects the practice of some SAUs to tax themselves beyond EPS or EB levels and enhance their education revenue. In the cases in which an SAU currently taxes itself beyond the level necessary to raise revenue for the EB model, the simulation holds the local tax rate constant, producing some level of “over-EB-tax-rate,” thus raising more local revenues above EB. The result is that the simulation assumes SAUs will use all current revenues for increased education spending, not to lower property taxes.

All simulations were run assuming minimum state funding ratios for minimum receiver SAUs would remain the same as they are in the current formula. The minimum state funding a SAU receives is the greater of:

- 3% of total EB funding
- 30% of special education costs
- 98% of the funding level for economically disadvantaged students.

For each simulation we provide five tables with the following data:

Table 1: The impact on a representative group of SAUs<sup>31</sup>

Table 2: The impact in deciles ranked by EB Revenues per pupil<sup>32</sup>

Table 3: The impact in deciles ranked by state property valuation per pupil (this table is organized by income adjusted valuation per pupil for the runs that include the income factor in the measure of fiscal capacity)

Table 4: The impact in deciles ranked by SAU enrollment

Table 5: The impact in deciles ranked by per capita income.

As requested by the Committee, we ran four simulations. Their basic features are described below, and the major impact of each is displayed in Table 1. Further detail of the impact of these simulations on SAUs can be found in Simulation Tables at the end of this memo.

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<sup>31</sup> When we run the simulations with the Committee, we can type in the ID number of any SAU in Table 1 and see the impact of the simulation on that specific SAU.

<sup>32</sup> Deciles are a way to rank observations based on equal numbers of observations in each of ten groups or “deciles.” In this analysis, each decile is constructed to include approximately equal numbers of students (18,300), thus the number of districts in each decile will vary depending on the average size of districts in the decile. Thus, if districts were ranked by total per pupil expenditures, the lowest or first decile would include the lowest spending districts that enrolled 18,300 students. The second decile would have the next lowest per pupil spending districts with approximately 18,300 students, while the 10<sup>th</sup> or highest decile would have the highest per pupil spending districts with approximately 18,300 students.

- A. The EB model as proposed by Lawrence O. Picus and Associates with the required tax rate (RTR) set at 7.8 mills.
- B. The EB model but, at the direction of the Committee, with class sizes reduced from 25 to 20 in grades 4-12.
- C. The EB model as in Simulation A but with the state share set at 55%.<sup>33</sup> To achieve that state percentage, the simulation reduced the RTR from 7.8 to 7.05 mills.
- D. The EB model as in Simulation A but with income factor included in the fiscal capacity measure (multiplying the state valuation per pupil by the ratio of the average per capita income of the SAU compared to the state average per capita income) but with the ratio restricted to a low of 0.5 and a high of 1.5. This ratio is applied to 50 percent of the State Valuation in this simulation. As described in our memo on fiscal capacity presented to the Committee on August 1, 2013.<sup>34</sup> In that memo we suggest limiting the ratio to between 0.5 and 1.5 to avoid effects potentially caused by extreme outliers with either very low or very high per capital incomes.

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<sup>33</sup> The state share percentage includes state revenue to SAUs, state miscellaneous revenue, and teacher pension revenue. The local share percentage includes local revenue to SAUs and state miscellaneous revenue. In neither state share nor local share does the share percentage include over-EB revenue.

<sup>34</sup> *Policies that Address the Needs of High Property-Wealth School Districts with Low-Income Families*. Presented to the Committee on August 1, 2013.

**Table 1**  
**Characteristics and Major Impacts on Base Totals**

SIM	Increased Costs \$ Millions			Percent of Total EB Revenues (%)		Number of SAUs with State Aid		Total EB Revenue Per Pupil to SAUs (\$)	Change in Total EB Revenue to SAUs Per Pupil from Actual Current Revenue Per Pupil (\$)	Major Impact
	State	Local	Total	State	Local	Increase	Decrease			
A EB Model	279.8	81.0	360.8	51.1	49.9	211	14	11,899	1,921	Increases overall base revenues by \$360.8 million
B EB w/ smaller classes	367.6	87.4	455.0	52.7	47.3	213	12	12,400	2,422	Additional \$94.1 million compared to Simulation A.
C EB & 55% State	383.6	(22.8)	360.8	55.5	45.0	213	12	11,899	1,921	Significantly increases state costs (\$103.8 million compared to Simulation A)
D EB w/Income Factor	247.9	113.0	360.8	49.6	50.4	205	20	11,899	1,921	Increases local costs (\$32 million), decreases equity?

Notes: Average total EPS per pupil revenue for 2012-13 was \$9,976

The state percent of total revenue was 45.5%<sup>35</sup> and the Local percent of total revenue was 55%

The Required Tax Rate for simulations A, B and D was 7.8 mills. For simulation C it was 6.97%.

<sup>35</sup> The state share percentage of EPS calculated in 2012-13 does not include the teacher pension budget.



In our first report to the Committee we noted that Maine’s school funding system exhibited considerable equity. Specifically our equity analysis showed that EPS revenues in Maine are not strongly related to state valuation, but that for local revenues above the EPS amount the relationship is slightly stronger. Per pupil revenues were relatively equitable, and any inequities that we noted do not appear to be related to student needs. In short, Maine’s current system appears to be more equitable than most states.<sup>36</sup>

To test the equity of each simulation we computed the Coefficient of Variation along with weighted correlations of state valuation per pupil and per capital personal income compared to our Evidence-Based estimated revenue per pupil. Table 2 summarizes these results and suggests the system remained equitable as evidenced by a relatively low Coefficient of Variation (ranging from 0.10 to 0.13 against a commonly-accepted standard of 0.10). This means that there is relatively little variation in per pupil revenues across SAUs.

Our analysis of the correlations between measures of fiscal capacity and per pupil revenues offers a number of observations. For simulations A, B and C, which relied on state valuation per pupil as the measure of fiscal capacity, the correlations were weak, never exceeding 0.125. At the same time, all three of those simulations showed a negative correlation between per capita income and Evidence Based revenues per pupil. This suggests that as community income increases, EB revenues decline slightly, though the relationship is weak.

When the measure of fiscal capacity includes a per capita income multiplicative ratio adjustment, the relationship between income and EB per pupil revenues is the same as in simulations A and C which would be expected since the total EB revenue remains the same. However the correlation between the income adjusted state valuation per pupil and EB revenue per pupil becomes even weaker.

Table 2: Sample Equity Statistics for Four Sample Simulations

<b><u>Simulation</u></b>	<b><u>Coefficient of Variation</u></b>	<b><u>Correlation between State Valuation and EB Total Revenue Per Pupil</u></b>	<b><u>Correlation between Per Capita Income and EB Total Revenue Per Pupil</u></b>
A EB Model	0.11	0.124	-0.387
B EB w/smaller classes	0.10	0.102	-0.385
C EB & 55% State	0.11	0.124	-0.387
D EB w/Income Factor	0.13	0.083	-0.387

Note: All computations were weighted based on the number of pupils in each SAU. As a result, the sample is 183,064 and all correlations are statistically significant due to the large sample.

<sup>36</sup> *An Independent Review of Maine’s Essential Programs and services Finding Act: Part I*. See chapter 4 for specifics of our findings on equity.

## **SIMULATION RESULTS**

The tables below summarize the output from the four simulations described above. In all four of these simulations, most SAUs receive an increase in state aid. The number of SAUs with state aid increases ranges from 205 to 213 of the 225 SAUs, while the number of SAUs with decreases ranges from 12 to 20 depending on the particular simulation considered. To help understand how SAUs are impacted under each scenario, Table 3 summarizes the contents of each of the simulations tables.

As the Committee reviews these tables (and as it considers additional simulation options at its October 29 meeting) we suggest considering the following criteria or questions as part of their deliberations and analysis:

- How does each option impact total revenue for K-12 education?
- What are the changes in local and state revenues for each model?
  - What are the variations from current revenues?
  - What are the variations from the base simulation of the EB model (Simulation A)?
- Does the simulation approach the 55% state funding goal?
  - At what cost?
  - What is the required tax rate to reach 55% state funding?
  - What is the additional state funding required?
- What are the equity impacts of the simulation?
  - Are there different impacts when the measure of fiscal capacity includes income?
  - Does the income proportion of the fiscal capacity measure change the equity impact (i.e. if the income factor represents 25%, 50% or 75% of the fiscal capacity measure)
- What are the differential impacts on total and individual SAU revenues by:
- Can we discern any impacts on high wealth-low income SAUs?
- What happens to average property tax rates
- Is there any pattern for tax rate changes by variations in property wealth per pupil or per capital income?

**Table 3: Summary of Contents of Simulation Data Tables**

	<b>Table</b>				
<b>Simulation</b>	<b>Sample SAUs</b>	<b>Deciles Ranked by EB Revenue Per Pupil</b>	<b>Deciles Ranked by SAU State Valuation Per Pupil</b>	<b>Deciles Ranked by SAU enrollment</b>	<b>Deciles Ranked by SAU Per Capita Income</b>
A EB Model	A1	A2	A3	A4	A5
B EB w/smaller classes	B1	B2	B3	B4	B5
C EB & 55% State	C1	C2	C3	C4	C5
D EB w/Income Factor	D1	D2	D3	D4	D5

The estimates of current EPS and EB revenue (both total and per pupil) differ on the State Output and Analytics worksheets in the model. These differences occur because the State Output worksheet includes 100 percent EPS revenue as well as additional ME adjustments for revenues that go to the State only and are not distributed directly to SAUs. In addition, the State Output worksheet does not include revenues raised locally by SAUs above the EPS and EB expectations. One other small difference occurs due to the three Tribal SAUs receiving revenue from the BIA in lieu of local resources. Finally, the mid-year reduction in the EPS means that additional funds must be subtracted from the EPS figures on the Analytics worksheet.

Table 4 illustrates reconciliation of the EPS and EB total and per pupil revenue figures between the State Output and Analytics worksheets. The first line of Table 4 displays the relevant data from the Analytics worksheet. From these figures we add the funds for the 3% reduction in EPS. state/local revenue above/(below) the EPS or EB revenue. The third line subtracts state only revenue, which is revenue not distributed directly to SAUs, but expended by the state for education. Line 4 adjusts for the midyear revenue reduction. Line 5 includes additional adjustments to the formula. The final lines shows the data from the State Output page, the values agreed upon with the DOE and described in the MOU at the end of this memo.

Table 4: Reconciliation Between State Output and Analytics Worksheets in the Maine Simulation Model

Reconciliation to Cost of Education						
			EPS Total		EB Total	EB/EPS Difference
SAU Distributed Revenue			\$1,874,324,132		\$2,235,164,923	\$360,840,791
(Switch from 97% EPS to 100% EPS)	+		\$41,876,093	+	\$0	\$41,876,093
(State-Only Funding)	+		\$63,811,153	+	\$63,811,153	
(Adj to Budgeted v. Actual)	+		\$4,222,897	+	\$4,222,897	
Adj in State Revenues ED279, lines 51-59e)	+		\$8,988,748			\$8,988,748
Total Rev for ME Education (State Output)			\$1,993,223,023		\$2,303,198,973	\$309,975,950

**Simulation A**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	51.01%
Mill Expectation	7.80
SAUs State Incr	211
SAUs State Decr	14
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,096,898,433	\$0	\$1,096,898,433	\$279,833,345
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,138,266,491	\$125,547,501	\$1,263,813,991	\$81,007,447
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$125,547,501	\$2,360,712,424	<b>\$360,840,791</b>
Model PP	<b>\$9,976</b>			<b>\$11,899</b>			<b>\$1,921</b>
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table A1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$0	\$1,132	\$10,247	\$11,378
1088	Lewiston School Departu	4,996	69%	\$467,224	\$20,014	0.98	\$0	\$2,516	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	<b>(\$0)</b>	\$9,625	\$11,814
1105	Medway School Departu	194	63%	\$318,605	\$21,030	0.00	\$0	\$7,547	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$2	\$3,396	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$0	\$1,172	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.51	\$1,151	\$1,405	\$9,204	\$11,760
1012	Bar Harbor School Deps	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	<b>(\$0)</b>	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	\$0	\$1,832	\$9,595	\$11,427
1074	Heron School Departu	932	24%	\$474,181	\$28,520	0.00	\$0	\$1,312	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$2,679	\$5,839	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	\$0	\$2,920	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$5,462	\$2,281	\$8,820	\$16,563
1095	Machias School Departu	318	77%	\$433,246	\$17,638	0.00	\$0	\$3,349	\$8,872	\$12,221
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	\$0	\$5,745	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$69	\$2,209	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.55	\$0	\$1,889	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	\$146	\$1,597	\$9,636	\$11,380

**Table A2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.14	\$242	\$835	\$9,269	\$10,347	25	1
Decile 2	875	42%	\$749,383	\$23,500	0.01	\$88	\$1,548	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$779,892	\$23,941	0.01	\$447	\$1,275	\$9,413	\$11,135	17	0
Decile 4	1,940	42%	\$1,001,677	\$24,543	0.09	\$690	\$850	\$9,892	\$11,431	7	3
Decile 5	1,577	35%	\$813,061	\$28,625	0.16	\$156	\$1,383	\$10,065	\$11,603	12	0
Decile 6	1,323	50%	\$616,535	\$22,276	0.14	\$127	\$1,911	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$972,775	\$23,667	0.02	\$292	\$1,358	\$10,375	\$12,026	9	0
Decile 8	998	56%	\$723,018	\$21,649	0.67	\$793	\$1,438	\$10,130	\$12,360	19	1
Decile 9	1,253	55%	\$895,782	\$24,519	0.20	\$487	\$1,456	\$10,821	\$12,764	15	0
Decile 10	223	60%	\$1,074,182	\$23,154	0.50	\$937	\$2,792	\$10,810	\$14,542	72	8
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

Table A3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.15	\$0	\$2,740	\$9,055	\$11,794	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.02	\$7	\$2,207	\$9,624	\$11,839	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.27	\$10	\$2,218	\$10,070	\$12,298	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.28	\$20	\$1,820	\$10,005	\$11,845	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.11	\$13	\$1,811	\$10,022	\$11,847	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.44	\$294	\$1,337	\$10,120	\$11,751	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.02	\$264	\$1,515	\$9,908	\$11,687	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.08	\$357	\$1,002	\$9,900	\$11,259	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.50	\$1,106	\$396	\$10,729	\$12,231	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.12	\$2,090	\$46	\$10,221	\$12,360	63	12
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

Table A4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.33	\$1,289	\$2,691	\$9,571	\$13,551	130	9
Decile 2	838	52%	\$714,531	\$23,708	0.10	\$275	\$1,928	\$9,623	\$11,827	21	1
Decile 3	1,309	45%	\$835,278	\$24,848	0.08	\$282	\$1,335	\$9,793	\$11,410	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.01	\$399	\$1,200	\$9,790	\$11,390	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.11	\$438	\$994	\$10,222	\$11,654	8	1
Decile 6	2,354	50%	\$568,359	\$25,767	0.26	\$23	\$1,919	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.38	\$959	\$442	\$10,767	\$12,168	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.13	\$96	\$1,599	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.30	\$117	\$1,593	\$9,753	\$11,463	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.19	\$302	\$1,428	\$10,321	\$12,053	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

Table A5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.29	\$128	\$2,921	\$9,885	\$12,935	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.10	\$95	\$2,210	\$9,761	\$12,068	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.34	\$339	\$1,575	\$9,693	\$11,607	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.30	\$905	\$1,337	\$9,971	\$12,212	26	5
Decile 5	2,618	53%	\$795,896	\$23,926	0.30	\$558	\$1,311	\$10,512	\$12,381	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.26	\$283	\$1,682	\$9,710	\$11,676	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.33	\$240	\$1,748	\$9,850	\$11,839	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.26	\$249	\$1,281	\$10,121	\$11,651	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.22	\$1,027	\$545	\$10,194	\$11,766	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.26	\$567	\$354	\$10,094	\$11,015	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.20	\$431	\$1,490	<b>\$9,978</b>	<b>\$11,899</b>	211	14

**Simulation B**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	52.65%
Mill Expectation	7.80
SAUs State Incr	213
SAUs State Decr	12
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,184,631,699	\$0	\$1,184,631,699	\$367,566,611
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,144,677,673	\$121,802,397	\$1,266,480,071	\$87,418,629
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,329,309,372	\$121,802,397	\$2,451,111,770	<b>\$454,985,241</b>
Model PP	<b>\$9,976</b>			<b>\$12,400</b>			<b>\$2,422</b>
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,763			\$2,422

**Table B1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	\$0	\$1,715	\$10,247	\$11,962
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.98	\$0	\$3,065	\$10,651	\$13,716
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	\$0	\$7,608	\$8,374	\$15,982
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	\$2	\$3,362	\$12,275	\$15,639
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	\$0	\$1,771	\$10,818	\$12,589
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.51	\$1,151	\$1,624	\$9,204	\$11,979
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,191	(\$0)	\$9,016	\$10,208
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	\$0	\$2,392	\$9,595	\$11,987
1074	Hermon School Departm	932	24%	\$474,181	\$28,520	0.00	\$0	\$1,845	\$9,480	\$11,324
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$2,679	\$5,789	\$9,106	\$17,574
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,129	\$124	\$9,654	\$15,906
1053	Easton School Departm	218	59%	\$1,085,550	\$21,227	0.00	\$0	\$2,892	\$9,409	\$12,301
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$5,462	\$2,313	\$8,820	\$16,595
1095	Machias School Depart	318	77%	\$433,246	\$17,638	0.00	\$0	\$3,241	\$8,872	\$12,113
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	\$0	\$5,692	\$10,114	\$15,806
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,808	\$404	\$9,981	\$14,192
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$69	\$2,754	\$10,099	\$12,921
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.55	\$0	\$2,503	\$10,983	\$13,486
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	\$146	\$2,214	\$9,636	\$11,997

**Table B2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	557	37%	\$822,376	\$25,731	0.16	\$202	\$1,640	\$9,014	\$10,857	27	1
Decile 2	842	37%	\$914,919	\$24,395	0.03	\$287	\$1,731	\$9,309	\$11,327	26	0
Decile 3	1,124	41%	\$906,830	\$25,484	0.02	\$428	\$1,798	\$9,421	\$11,647	15	1
Decile 4	1,606	45%	\$943,841	\$23,433	0.09	\$585	\$1,532	\$9,861	\$11,978	10	2
Decile 5	1,199	41%	\$700,454	\$23,678	0.31	\$430	\$1,952	\$9,766	\$12,148	13	1
Decile 6	1,657	43%	\$728,256	\$24,079	0.06	\$232	\$2,055	\$10,046	\$12,332	12	0
Decile 7	1,954	54%	\$813,411	\$22,973	0.12	\$147	\$2,243	\$10,151	\$12,541	10	0
Decile 8	1,245	56%	\$840,995	\$24,420	0.51	\$839	\$1,660	\$10,350	\$12,849	14	1
Decile 9	1,174	57%	\$938,805	\$21,472	0.34	\$618	\$1,922	\$10,738	\$13,278	15	0
Decile 10	251	57%	\$1,013,784	\$23,423	0.46	\$860	\$2,909	\$10,966	\$14,739	71	6
Weighted Avg	817	47%	\$865,696	\$23,926	0.21	\$465	\$1,957	<b>\$9,978</b>	<b>\$12,400</b>	213	12

Table B3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.15	\$0	\$3,116	\$9,055	\$12,171	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.02	\$7	\$2,695	\$9,624	\$12,327	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.27	\$10	\$2,714	\$10,070	\$12,794	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.28	\$20	\$2,359	\$10,005	\$12,384	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.11	\$13	\$2,325	\$10,022	\$12,360	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.44	\$294	\$1,882	\$10,120	\$12,296	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.02	\$264	\$2,038	\$9,908	\$12,210	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.08	\$357	\$1,585	\$9,900	\$11,842	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.50	\$1,110	\$948	\$10,729	\$12,787	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.20	\$2,408	\$118	\$10,221	\$12,750	65	10
Weighted Avg	817	47%	\$865,696	\$23,926	0.21	\$465	\$1,957	<b>\$9,978</b>	<b>\$12,400</b>	213	12

Table B4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.36	\$1,318	\$2,716	\$9,571	\$13,604	131	8
Decile 2	838	52%	\$714,531	\$23,708	0.11	\$329	\$2,252	\$9,623	\$12,205	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.08	\$329	\$1,838	\$9,793	\$11,960	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.01	\$461	\$1,695	\$9,790	\$11,946	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.13	\$498	\$1,511	\$10,222	\$12,232	8	1
Decile 6	2,354	50%	\$568,359	\$25,767	0.26	\$23	\$2,475	\$9,977	\$12,475	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.42	\$1,038	\$943	\$10,767	\$12,748	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.13	\$96	\$2,176	\$9,826	\$12,098	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.30	\$117	\$2,173	\$9,753	\$12,043	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.19	\$302	\$2,018	\$10,321	\$12,644	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.21	\$465	\$1,957	<b>\$9,978</b>	<b>\$12,400</b>	213	12

Table B5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.31	\$131	\$3,269	\$9,885	\$13,286	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.11	\$96	\$2,682	\$9,761	\$12,541	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.36	\$354	\$2,051	\$9,693	\$12,097	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.34	\$985	\$1,713	\$9,971	\$12,668	27	4
Decile 5	2,618	53%	\$795,896	\$23,926	0.30	\$558	\$1,867	\$10,512	\$12,936	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.26	\$283	\$2,248	\$9,710	\$12,241	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.35	\$243	\$2,224	\$9,850	\$12,317	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.26	\$249	\$1,803	\$10,121	\$12,173	14	2
Decile 9	762	33%	\$1,358,062	\$30,137	0.23	\$1,126	\$948	\$10,194	\$12,268	20	2
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.29	\$710	\$805	\$10,094	\$11,608	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.21	\$465	\$1,957	<b>\$9,978</b>	<b>\$12,400</b>	213	12





**Simulation C**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	State Valuation
% Income-Based	Not Applicable
State Share	55.47%
Mill Expectation	6.97
SAUs State Incr	214
SAUs State Decr	11
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,200,665,509	\$0	\$1,200,665,509	\$383,600,421
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,034,499,414	\$208,448,906	\$1,242,948,321	(\$22,759,629)
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$208,448,906	\$2,443,613,829	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table C1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	State Valuation Per-Pupil	Per-Capita Income	Mill Change from Current	Local Change PP from Current	State Change PP from	EPS PP	EB PP
1155	South Portland School D	3,103	36%	\$1,204,882	\$28,597	0.00	(\$1,000)	\$2,132	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$467,224	\$20,014	0.15	(\$388)	\$2,904	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$318,605	\$21,030	0.00	(\$264)	\$7,811	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$450,680	\$20,344	0.00	(\$372)	\$3,770	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,148,248	\$27,794	0.00	(\$953)	\$2,125	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$831,159	\$19,521	0.00	\$461	\$2,095	\$9,204	\$11,760
1012	Bar Harbor School Depa	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$668,862	\$24,179	0.00	(\$555)	\$2,387	\$9,595	\$11,427
1074	Hermon School Departm	932	24%	\$474,181	\$28,520	0.00	(\$394)	\$1,706	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,365,138	\$20,515	0.00	\$1,546	\$6,972	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,730,380	\$19,818	0.27	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departme	218	59%	\$1,085,550	\$21,227	0.00	(\$901)	\$3,821	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,729,433	\$17,808	0.00	\$4,027	\$3,717	\$8,820	\$16,563
1095	Machias School Departm	318	77%	\$433,246	\$17,638	0.00	(\$360)	\$3,709	\$8,872	\$12,221
1271	Indian Township	186	86%	\$15,903	\$10,940	0.00	(\$13)	\$5,758	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,848,282	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	(\$368)	\$2,646	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$927,624	\$23,988	0.00	(\$770)	\$2,659	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$761,429	\$22,671	0.00	(\$486)	\$2,229	\$9,636	\$11,380

**Table C2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,055,236	\$26,781	0.02	(\$330)	\$1,408	\$9,269	\$10,347	25	1
Decile 2	875	42%	\$749,383	\$23,500	0.00	(\$271)	\$1,908	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$779,892	\$23,941	0.00	(\$97)	\$1,819	\$9,413	\$11,135	17	0
Decile 4	1,940	42%	\$1,001,677	\$24,543	0.03	\$110	\$1,430	\$9,892	\$11,431	8	2
Decile 5	1,577	35%	\$813,061	\$28,625	0.00	(\$412)	\$1,950	\$10,065	\$11,603	12	0
Decile 6	1,323	50%	\$616,535	\$22,276	0.00	(\$337)	\$2,376	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$972,775	\$23,667	0.02	(\$401)	\$2,051	\$10,375	\$12,026	9	0
Decile 8	998	56%	\$723,018	\$21,649	0.26	\$196	\$2,034	\$10,130	\$12,360	19	1
Decile 9	1,253	55%	\$895,782	\$24,519	0.01	(\$196)	\$2,139	\$10,821	\$12,764	15	0
Decile 10	223	60%	\$1,074,182	\$23,154	0.13	\$467	\$3,263	\$10,810	\$14,542	74	6
Weighted Avg	817	47%	\$865,696	\$23,926	0.05	(\$121)	\$2,042	\$9,978	\$11,899	214	11

Table C3 SAU Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	569	60%	\$333,677	\$19,119	0.05	(\$277)	\$3,017	\$9,055	\$11,794	31	0
Decile 2	1,000	56%	\$435,075	\$21,051	0.00	(\$354)	\$2,568	\$9,624	\$11,839	17	0
Decile 3	1,160	56%	\$494,035	\$21,666	0.04	(\$400)	\$2,628	\$10,070	\$12,298	17	0
Decile 4	1,936	44%	\$554,352	\$25,295	0.01	(\$440)	\$2,280	\$10,005	\$11,845	10	0
Decile 5	1,159	48%	\$654,957	\$22,483	0.01	(\$530)	\$2,355	\$10,022	\$11,847	16	0
Decile 6	2,014	47%	\$720,760	\$26,410	0.05	(\$304)	\$1,935	\$10,120	\$11,751	9	0
Decile 7	1,055	47%	\$826,075	\$22,846	0.00	(\$422)	\$2,201	\$9,908	\$11,687	19	0
Decile 8	1,068	28%	\$1,013,826	\$28,712	0.00	(\$484)	\$1,844	\$9,900	\$11,259	17	0
Decile 9	1,384	47%	\$1,191,448	\$23,798	0.22	\$122	\$1,380	\$10,729	\$12,231	12	2
Decile 10	248	36%	\$2,295,026	\$25,979	0.09	\$1,750	\$386	\$10,221	\$12,360	66	9
Weighted Avg	817	47%	\$865,696	\$23,926	0.05	(\$121)	\$2,042	<b>\$9,978</b>	<b>\$11,899</b>	214	11

Table C4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,521,238	\$22,832	0.24	\$892	\$3,088	\$9,571	\$13,551	131	8
Decile 2	838	52%	\$714,531	\$23,708	0.02	(\$140)	\$2,343	\$9,623	\$11,827	22	0
Decile 3	1,309	45%	\$835,278	\$24,848	0.01	(\$222)	\$1,839	\$9,793	\$11,410	13	1
Decile 4	1,773	43%	\$890,143	\$27,540	0.00	(\$160)	\$1,759	\$9,790	\$11,390	11	0
Decile 5	2,103	36%	\$776,274	\$30,047	0.02	(\$146)	\$1,578	\$10,222	\$11,654	9	0
Decile 6	2,354	50%	\$568,359	\$25,767	0.03	(\$449)	\$2,391	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$987,539	\$26,731	0.19	\$315	\$1,086	\$10,767	\$12,168	6	2
Decile 8	3,102	50%	\$686,413	\$25,192	0.00	(\$474)	\$2,169	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$763,249	\$25,979	0.03	(\$516)	\$2,226	\$9,753	\$11,463	6	0
Decile 10	2,214	54%	\$845,725	\$23,387	0.05	(\$400)	\$2,129	\$10,321	\$12,053	4	0
Weighted Avg	817	47%	\$865,696	\$23,926	0.05	(\$121)	\$2,042	<b>\$9,978</b>	<b>\$11,899</b>	214	11

Table C5 SAU by Income Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average State Valuation PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	321	67%	\$512,087	\$16,994	0.17	(\$259)	\$3,308	\$9,885	\$12,935	56	0
Decile 2	640	60%	\$530,757	\$20,996	0.03	(\$342)	\$2,646	\$9,761	\$12,068	28	0
Decile 3	1,161	54%	\$708,774	\$22,374	0.11	(\$189)	\$2,103	\$9,693	\$11,607	15	1
Decile 4	557	52%	\$1,185,994	\$23,783	0.26	\$308	\$1,933	\$9,971	\$12,212	28	3
Decile 5	2,618	53%	\$795,896	\$23,926	0.04	(\$102)	\$1,972	\$10,512	\$12,381	7	0
Decile 6	1,758	48%	\$706,821	\$24,317	0.12	(\$290)	\$2,255	\$9,710	\$11,676	12	0
Decile 7	830	48%	\$657,673	\$25,776	0.17	(\$225)	\$2,214	\$9,850	\$11,839	19	1
Decile 8	1,230	42%	\$882,904	\$27,583	0.16	(\$432)	\$1,963	\$10,121	\$11,651	15	1
Decile 9	762	33%	\$1,358,062	\$30,137	0.16	\$434	\$1,138	\$10,194	\$11,766	19	3
Decile 10	1,197	15%	\$1,321,712	\$39,779	0.26	(\$13)	\$934	\$10,094	\$11,015	15	2
Weighted Avg	817	47%	\$865,696	\$23,926	0.05	(\$121)	\$2,042	<b>\$9,978</b>	<b>\$11,899</b>	214	11

**Simulation D**
**Model Description**

Regional Cost Index	NCES CWI (2011)
Fiscal Capacity	Alternative Income-Based
% Income-Based	50.00%
State Share	49.63%
Mill Expectation	7.80
SAUs State Incr	205
SAUs State Decr	20
Notes	

**Comparison to Current System**

	EPS Total (97%)	Over-EPS	Total Rev	EB Total	Over-EB	Total Rev	EB/EPS Difference
State	\$817,065,088	\$23,109,817	\$840,174,905	\$1,064,914,104	\$0	\$1,064,914,104	\$247,849,017
Local	\$1,057,259,044	\$173,811,546	\$1,231,070,589	\$1,170,250,819	\$157,761,856	\$1,328,012,674	\$112,991,775
Total	\$1,874,324,132	\$196,921,363	\$2,071,245,495	\$2,235,164,923	\$157,761,856	\$2,392,926,779	\$360,840,791
Model PP	\$9,976			\$11,899			\$1,921
ME Adj PP	\$362			\$362			\$0
Total PP	\$10,338			\$12,261			\$1,921

**Table D1 Individual SAU Output**

SAU ID	SAU Name	Pupils	ED %	Income Adjusted		Mill Change	Local Change PP	State Change	EPS PP	EB PP
				Per-Pupil	Per-Capita Income	from Current	from Current	PP from		
1155	South Portland School D	3,103	36%	\$1,322,504	\$28,597	0.00	\$917	\$214	\$10,247	\$11,378
1088	Lewiston School Depart	4,996	69%	\$429,030	\$20,014	0.98	(\$298)	\$2,814	\$10,651	\$13,167
3184	RSU 78	200	0%	\$5,254,250	\$23,926	0.00	\$2,189	(\$0)	\$9,625	\$11,814
1105	Medway School Depart	194	63%	\$299,324	\$21,030	0.00	(\$150)	\$7,697	\$8,374	\$15,921
1226	RSU 32/MSAD 32	294	70%	\$416,946	\$20,344	0.00	(\$261)	\$3,659	\$12,275	\$15,673
1134	Portland Public Schools	6,889	55%	\$1,241,072	\$27,794	0.00	\$724	\$448	\$10,818	\$11,990
1252	RSU 58/MSAD 58	621	68%	\$754,651	\$19,521	0.51	\$554	\$2,002	\$9,204	\$11,760
1012	Bar Harbor School Dep	426	15%	\$2,308,224	\$23,926	0.00	\$1,279	(\$0)	\$9,016	\$10,295
1011	Bangor School Departm	3,688	54%	\$672,402	\$24,179	0.00	\$28	\$1,804	\$9,595	\$11,427
1074	Heron School Depart	932	24%	\$519,708	\$28,520	0.00	\$355	\$957	\$9,480	\$10,792
1213	RSU 85/MSAD 19	127	84%	\$1,267,835	\$20,515	0.00	\$1,920	\$6,597	\$9,106	\$17,623
1032	Castine School Departm	79	18%	\$4,324,310	\$19,818	0.58	\$6,131	\$124	\$9,654	\$15,909
1053	Easton School Departm	218	59%	\$1,024,328	\$21,227	0.00	(\$478)	\$3,398	\$9,409	\$12,329
1150	Sedgwick School Depart	138	68%	\$1,508,329	\$17,808	0.00	\$3,737	\$4,006	\$8,820	\$16,563
1095	Machias School Depart	318	77%	\$376,317	\$17,638	0.00	(\$444)	\$3,793	\$8,872	\$12,221
1271	Indian Township	186	86%	\$11,927	\$10,940	0.00	(\$31)	\$5,776	\$10,114	\$15,859
1070	Greenville School Depart	184	59%	\$1,895,957	\$25,160	0.00	\$3,793	\$402	\$9,981	\$14,175
3159	RSU 10	2,889	67%	\$526,346	\$23,926	0.00	\$69	\$2,209	\$10,099	\$12,376
1016	Biddeford School Depart	2,637	57%	\$928,832	\$23,988	0.55	\$9	\$1,879	\$10,983	\$12,872
1251	RSU 57/MSAD 57	3,397	0	\$741,463	\$22,671	0.00	(\$9)	\$1,753	\$9,636	\$11,380

**Table D2 Total EB Revenue Per-Pupil Deciles**

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per-Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	651	28%	\$1,229,831	\$26,781	0.14	\$888	\$189	\$9,269	\$10,347	22	4
Decile 2	875	42%	\$819,746	\$23,500	0.01	\$303	\$1,333	\$9,195	\$10,832	22	0
Decile 3	1,110	43%	\$824,866	\$23,941	0.01	\$745	\$976	\$9,413	\$11,135	15	2
Decile 4	1,940	42%	\$1,067,901	\$24,543	0.08	\$771	\$768	\$9,892	\$11,431	7	3
Decile 5	1,577	35%	\$872,649	\$28,625	0.16	\$496	\$1,043	\$10,065	\$11,603	11	1
Decile 6	1,323	50%	\$614,666	\$22,276	0.14	\$113	\$1,926	\$9,752	\$11,790	13	1
Decile 7	2,023	55%	\$1,009,503	\$23,667	0.03	\$525	\$1,126	\$10,375	\$12,026	9	0
Decile 8	998	56%	\$735,207	\$21,649	0.68	\$894	\$1,336	\$10,130	\$12,360	19	1
Decile 9	1,253	55%	\$917,416	\$24,519	0.20	\$506	\$1,437	\$10,821	\$12,764	15	0
Decile 10	223	60%	\$1,098,967	\$23,154	0.48	\$775	\$2,954	\$10,810	\$14,542	72	8
Weighted Avg	817	47%	\$915,335	\$23,926	0.20	\$602	\$1,319	\$9,978	\$11,899	205	20

Table D3 SAU Income Adjusted Valuation Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	476	60%	\$318,030	\$18,644	0.15	(\$181)	\$3,071	\$9,022	\$11,912	39	0
Decile 2	1,582	62%	\$424,753	\$21,412	0.27	(\$130)	\$2,361	\$9,720	\$11,950	12	0
Decile 3	1,075	50%	\$494,206	\$22,743	0.02	\$25	\$2,061	\$10,145	\$12,231	15	0
Decile 4	1,427	48%	\$561,881	\$22,403	0.27	\$54	\$1,820	\$10,215	\$12,088	14	0
Decile 5	1,267	54%	\$654,769	\$22,550	0.35	\$46	\$1,967	\$9,872	\$11,885	14	0
Decile 6	1,934	43%	\$749,826	\$25,039	0.20	\$466	\$1,153	\$9,774	\$11,393	11	0
Decile 7	1,053	42%	\$862,162	\$24,583	0.00	\$519	\$1,043	\$10,168	\$11,730	16	1
Decile 8	1,157	51%	\$1,112,792	\$23,326	0.20	\$896	\$863	\$10,489	\$12,249	17	0
Decile 9	1,157	26%	\$1,319,746	\$29,947	0.08	\$1,627	(\$509)	\$9,978	\$11,096	8	7
Decile 10	267	33%	\$2,514,408	\$26,438	0.38	\$2,538	(\$480)	\$10,369	\$12,430	59	12
Weighted Avg	817	47%	\$915,335	\$23,926	0.20	\$602	\$1,319	<b>\$9,978</b>	<b>\$11,899</b>	205	20

Table D4 SAU Size Deciles

Decile	Average # of Pupils	Average Econ Disadv	Average Income Adjusted PP	Average Per- Capita Income	Average Mill Change from Current	Average Local Change from Current PP	Average State Change from Current PP	EPS PP	EB PP	# SAUs Increase State Aid	# SAUs Decrease State Aid
Decile 1	134	53%	\$1,602,283	\$22,832	0.33	\$1,180	\$2,800	\$9,571	\$13,551	130	9
Decile 2	838	52%	\$727,836	\$23,708	0.12	\$215	\$1,988	\$9,623	\$11,827	21	1
Decile 3	1,309	45%	\$878,519	\$24,848	0.08	\$274	\$1,343	\$9,793	\$11,410	12	2
Decile 4	1,773	43%	\$971,832	\$27,540	0.01	\$638	\$962	\$9,790	\$11,390	9	2
Decile 5	2,103	36%	\$839,522	\$30,047	0.11	\$931	\$501	\$10,222	\$11,654	6	3
Decile 6	2,354	50%	\$595,394	\$25,767	0.26	\$234	\$1,708	\$9,977	\$11,920	7	0
Decile 7	2,653	43%	\$1,068,788	\$26,731	0.36	\$1,196	\$206	\$10,767	\$12,168	6	2
Decile 8	3,102	50%	\$717,398	\$25,192	0.13	\$338	\$1,357	\$9,826	\$11,521	5	0
Decile 9	3,487	45%	\$801,119	\$25,979	0.30	\$346	\$1,364	\$9,753	\$11,463	5	1
Decile 10	2,214	54%	\$873,140	\$23,387	0.19	\$516	\$1,214	\$10,321	\$12,053	4	0
Weighted Avg	817	47%	\$915,335	\$23,926	0.20	\$602	\$1,319	<b>\$9,978</b>	<b>\$11,899</b>	205	20



## ***MEMORANDUM OF UNDERSTANDING***

To: Wendy Cherubini, Maine Office of Program Evaluation and Government Accountability (OPEGA)

From: Lawrence O. Picus on behalf of Lawrence O. Picus and Associates  
Jim Rier on behalf of Maine Department of Education

Subject: **Agreement on Cost of Education Comparison**

Date: October 24, 2013

During meetings with the Joint Legislative Committee on Education and Cultural Affairs (hereinafter the Committee) on August 1, 2013, the Committee requested that Lawrence O. Picus and Associates and the Maine Department of Education (DOE) agree on a consistent cost of education for the 2012-13 school year. A single figure of reference would aid discussion on the differences between the Essential Programs and Services (EPS) and Evidence Based (EB) models of school finance.

Staff of Lawrence O. Picus and Associates and the DOE selected a cost of education of \$1,993,219,722. This figure is shown on Jim Rier's 6-28-13 Annual Funding Graph (Education Funding Law Implementation, State/Local Share of Education Costs). This figure represents the 2012-13 education budget, which:

1. Excludes teacher retirement
2. Excludes Local Only Debt
3. Includes state-only education revenue (i.e. revenue for education that is not dispersed to SAUs)
4. Represents 100 percent funded EPS

Each of the budgetary components of the \$1,993,219,722 cost of education is detailed in Lawrence O. Picus and Associate's excel-based model (ME Picus and Assoc EB Model.xls, State Output worksheet), which makes line-by-line component comparisons to illustrate the differences between the EPS and EB approaches.



## **APPENDIX E**

### **COST COMPARISON OF EPS AND EB RESOURCE ELEMENTS**



## **Cost Comparison of EPS and EB Resources**

As part of this study, we were asked to develop an “apples-to-apples” comparison of the cost elements of the EPS and EB models. Specifically, we were asked to compare the 2012-13 EPS at 100% funding to the EB model at 100% funding as estimated for the 2012-13 fiscal year. This is a complex undertaking and one that can only be partially fulfilled. The complexities of the comparison are summarized, followed by Table E.1 where we provide the cost comparisons of the models’ elements.

Conceptually, both EB and EPS are similar. Both attempt to estimate the total cost of providing an adequate level of resources for Maine’s students. Both include the similar sets of resources, though the approach for estimating how much of each resource is needed differs across the two models. To build the comparison that appears in Table E.1 below, we estimated EPS costs using the June 25, 2013 Form ED 279 for the entire state. This form provides us with an estimate of 100% of the EPS funding level as of that date. We compare the figures from that ED 279 form with estimates derived from our EB simulation. To get the cost of each element, we “zeroed-out” each individual element, recomputed the simulation to get a new total state cost. We then subtracted the new state cost from the total estimated EB state cost with the remainder being the cost of the “zeroed-out” element.

Using the two approaches – adding the cost of individual elements for EPS and subtracting elements one at a time from EB provide individual cost estimates of the elements of each model. As Table E.1 shows, the elements do not correspond perfectly so comparisons are imperfect as well. Moreover, because both models are dynamic in their construction (that is, changing one element in the model results in changes in other parts of the model) it is unlikely that summing either the EPS or the EB column will provide a match with the statewide total costs of the respective model. To help understand the complexities and assumptions in the model the last column of Table E.1 references a set of notes that should be considered an integral part of the table.

**Table E.1**  
**Comparison of the Cost Elements of EPS and EB**

	<b>Cost Element</b>	<b>EPS Cost (\$)</b>	<b>EB Cost (\$)</b>	<b>Notes</b>
1	Core Teachers	626,799,708	638,800,732	1
2	Elective Teachers	-	122,847,816	2
3	Instructional Aides (PK)	Included on line 19	8,001,982	3
4	Instructional Coaches	-	62,489,567	4
5	Increased Days for PD	-	28,239,415	5
6	PD Resources for Training	10,699,245	18,966,849	
7	Economically Disadvantaged	82,805,885		6
8	Tutors for Struggling Students	-	57,063,978	
9	Extended Day	-	47,700,019	
10	Summer School	-	47,700,019	
11	Additional Pupil Support	-	57,063,978	
12	LEP/ELL	16,767,213	3,301,326	
13	Special Education	266,650,900	266,650,900	7
14	GATE	10,295,605	4,570,881	8
15	CTE	43,829,464	43,829,464	9
16	Substitute Teachers	6,709,721	46,270,112	
17	Guidance Counselors	36,956,976	40,774,413	
18	Nurses	13,605,673	12,516,879	
19	Instructional Aides (K-12)	39,169,974	0	10
20	Supervisory duty aides	-	22,005,503	
21	Librarians	14,734,758	23,286,941	
22	Library Technicians	9,770,970	0	
23	Principals	53,579,751	36,595,394	11
24	Assistant Principals	-	16,841,455	11
25	Instructional Leadership Support	4,352,208		11
26	School Site Clerical Staff	46,633,623	26,660,561	
27	Computer Technology	29,593,236	47,425,171	
28	Instructional Materials	69,787,276	33,348,446	
29	Student Activities	10,434,068	46,247,828	
30	Student Assessment	7,964,524	4,740,373	
31	Central Administration	39,895,240	83,731,405	
32	Maintenance and Operations	193,890,389	55,539,422	12
33	M and O Major Repairs		138,350,967	12
34	Benefits	Included in staffing	Included in staffing	13
35	Regional Cost Adjustment		44,766,661	14



5. The EB figure represents the cost of five additional teacher days for PD.
6. The EPS figure appearing in line 7 should be compared to the costs for programs for struggling students in the EB model. These costs appear in lines 8-11.
7. The EB census approach for children with mild and moderate disabilities generated substantially lower costs than observed in Maine. In addition, data for the cost of fully funding special education for EB includes 100% state funding for children with severe disabilities, which we could not estimate due to insufficient data. At the recommendation of the PJP panels and because of Federal maintenance of effort requirements, we have included the total Maine special education costs in the EB model.
8. Maine funds GATE programs with grants to specific SAUs whereas the EB provides \$25 for every student in the state to fund gifted and talented programs. The EPS figure represents total grants for 2012-13 and the EB figure is the total based on the per pupil allotment of EB.
9. At the recommendation of the PJPs, the CTE funding in Maine continue in its present form until completion of a major study of this topic.
10. The EB model only has instructional aides for PK, the cost of whom appears in line 3. The EPS figure on line 19 includes any instructional aides who work at the PK level.
11. Total site leadership costs for the EPS model are:

Principals	\$53,579,751
Instructional Leadership Support	<u>\$4,352,208</u>
Total	\$57,931,959

  

Total leadership costs for the EB model are:	
Principals	\$36,595,394
Assistant Principals	<u>\$16,841,455</u>
Total	\$53,436,849
12. EPS maintenance and operations includes \$138million in funding for major repairs. We include this on line 33 of the EB cost estimate so these funds are not taken away from SAUs. Our estimate of the costs of maintenance and operations for SAUs totals \$54 million without the major repair funding
13. The ED279 form includes a separate line item for benefits. In this comparison, we have rolled benefits into the compensation used for both the EB and EPS components.
14. The EB figure is the cost of using a comparative wage index over the cost of using the ME Cost of Education Index. We are unable to compute the cost effect of the regional cost adjustment in the EPS model.

15. The cost categories in lines 37-42 were not part of the EB study. Element cost totals from EPS are constant across the models.