



## ***MEMORANDUM***

To: Wendy Cherubini and Phil McCarthy

From: Lawrence O. Picus on Behalf of Lawrence O. Picus and Associates

RE: Simulation Calculations (Draft)

Date: November 12, 2013

During and subsequent to our October 29 meeting with the Joint Committee, Sen. Millett and Dr. Silvernail identified concerns with our simulation model, specifically that if the inputs to the EB model were the same, the total education revenue for the state should also be the same and we should only observe variation in the state and local shares of the total (along with the relevant required tax rate for local districts).

Sen. Millett inquired about the state and SAU costs (RTR and revenue raised) under a variety of assumptions when the EB level is fixed (and how they change if the inputs to the EB are changed). This can be easily computed from the simulation. Assuming the use of the EB model as developed by Lawrence O. Picus and Associates, the answer to Sen. Millett's question is that total EB costs for Maine are \$327 million more than the 2012-13 EPS totals (assuming funding at 97% of EPS for that year). Of this total increase, \$42 million is the result of funding the EPS at only the 97% level.

Table 1 displays three alternative EB simulations using the Lawrence O. Picus and Associates EB model assumptions. The three alternative simulations are as follows:

- Simulation 1: This simulation computes the EB revenue, maintaining the state share of 45.5 percent.
- Simulation 2: This simulation computes the EB revenue, maintaining the RTR of 7.8.
- Simulation 3: This simulation computes the EB revenue with the state share at 55 percent.

One should note the inverse relationship between the state share and the RTR. The greater the state share, the lower the RTR required to fund the local share of the EB. This is important because it affects the distribution of state and local dollars that make up the

EB revenue, and the amount of local levies that can be used by districts to raise funds above the EB without raising their 2012-13 tax rates.

Columns 1 and 2 of Table 1 display FY 2012-13 EPS funding levels (at 97 percent of EPS). Column 1 is the EPS figure funded by the state and raised through local property taxes by the districts. Column 2 includes state funding of \$23 million above the EPS, the result of state distributions to school districts outside of the EPS calculations (note that we assume all of this \$23 million falls inside the EB calculations which is shown by zeros in the state over EB figures in Column 4). Column 2 also includes the amount of revenue local districts raise above the EPS level.

Columns 3 and 4 of Table 1 display FY 2012-13 EB funding levels. Column 3 contains the EB figures for the state and local shares of the total EB -- \$2.20 billion. Local funding above the EB model is displayed in column 4 of Table 1. This represents local tax collections that exceed the revenues necessary to fund the local share of the EB, holding the total district tax rate constant for that year. As the table shows, the higher the RTR, the lower the level of **local** funding above the EB amount and the lesser the **state** share of EB funding.

The difference in costs between the EPS and EB is displayed in Column 5. The total difference for each simulation is \$327 million. That is, regardless of the state share and RTR; the EB costs \$327 million more than the EPS. As the state share of EB revenue increases, more local revenues are available for funding over EB revenues.<sup>1</sup> The distribution between state and local sources depends on the state share and resulting RTR, which vary depending on the assumptions of the model. Examples from Table 1 are helpful.<sup>2</sup>

- In Simulation E.1, the intent was to establish the state share of EB equal to the current state share of 45.45%. To meet this state share of the new higher EB total, the RTR was raised to 8.80 mills, meaning more of the local revenue previously raised above the EPS is dedicated to funding the EB funding level. Over EB local funding is \$66 million while the total increase for EB is \$327 million.<sup>3</sup>
- In Simulation E.2, the RTR is 7.8 mills, which is the current RTR for EPS, with a state share of 50% resulting from this choice of RTR. Given the higher revenue necessary for the EB model, some over-EPS revenue is pulled into the base EB total. Over EB local funding is \$129 million while the total increase for EB remains \$327 million.

---

<sup>1</sup> These revenues would also be available for property tax reductions. Because it is impossible to predict what SAUs would have done under each simulation, we have assumed for this model that the total property tax rate remains the same.

<sup>2</sup> Note that the state share percentage is calculated differently between the EPS and EB models: per Committee request, the EB state share percentage includes pension benefits.

<sup>3</sup> In all of the models, a small portion of the increased local funding is also a function of minimum receiver districts raising their tax rates to pay for the higher cost of EB.

- In Simulation E.3, the intent was to set the state share at 55%. As a result, the RTR falls to 6.97 mills. Since the model holds local tax rates constant, and since districts are now given the EB funding level with a tax rate that is almost one mill lower than the current RTR, the local over EB total increases. Over EB local funding is \$210 million while the total increase for EB remains \$327 million.

What all this means, is that for any given set of EB inputs, the model always returns the same EB total as expected. What varies is the relative state and local shares. As programmed for this set of simulations, local property taxes are not reduced meaning that the higher the state share, the more total revenue increases due to higher above EB funding by the local districts. The amount of local funds over the EB funding level in each district will vary based on SAU characteristics, the RTR and state share used in the simulation.

**Table 1: Comparison of Simulations 1, 2, and 3**

Simulation 1		-1- EPS Total (97% EPS)	-2- Over-EPS	-3- EB Total (100% EB)	-4- Over-EB	-5- Base Increase (Col 3-Col 1)
RTR	8.80					
State Share	45.44%					
SAU State Inc	193					
SAU State Decr	32					
EB Rev PP	\$11,721	\$817,065,088	\$23,109,817	\$952,573,820	\$0	\$135,508,732
ME Adjustments PP	\$362	\$1,057,259,044	\$173,811,546	\$1,249,053,631	\$65,925,410	\$191,794,587
Cost of Education PP	\$12,083	\$1,874,324,132	\$196,921,363	\$2,201,627,452	\$65,925,410	\$327,303,320
<hr/>						
Simulation 2		-1- EPS Total (97% EPS)	-2- Over-EPS	-3- EB Total (100% EB)	-4- Over-EB	-5- Base Increase (Col 3-Col 1)
RTR	7.80					
State Share	50.43%					
SAU State Inc	206					
SAU State Decr	19					
EB Rev PP	\$11,721	\$817,065,088	\$23,109,817	\$1,066,913,284	\$0	\$249,848,197
ME Adjustments PP	\$362	\$1,057,259,044	\$173,811,546	\$1,134,714,167	\$129,088,092	\$77,455,123
Cost of Education PP	\$12,083	\$1,874,324,132	\$196,921,363	\$2,201,627,452	\$129,088,092	\$327,303,320
<hr/>						
Simulation 3		-1- EPS Total (97% EPS)	-2- Over-EPS	-3- EB Total (100% EB)	-4- Over-EB	-5- Base Increase (Col 3-Col 1)
RTR	6.97					
State Share	54.91%					
SAU State Inc	214					
SAU State Decr	11					
EB Rev PP	\$11,721	\$817,065,088	\$23,109,817	\$1,169,271,722	\$0	\$352,206,634
ME Adjustments PP	\$362	\$1,057,259,044	\$173,811,546	\$1,032,355,730	\$210,454,394	(\$24,903,314)
Cost of Education PP	\$12,083	\$1,874,324,132	\$196,921,363	\$2,201,627,452	\$210,454,394	\$327,303,320