

## How to Understand the 61a1 Simulation Spreadsheet

Attached is an MSEXcel Workbook with nine worksheets. Navigate between the worksheets by clicking the tiny arrow at the bottom left of the workbook.

The worksheets show the simulation of the 2015-16 61a1 funding formula based on 2014-15 data compared to:

- 1) the ACTUAL 2015-16 funding amounts generated using the old formula (based on **\$35,811,300**)
- 2) the actual 2014-15 funding amounts generated using the old formula (based on **\$25,811,300**)

Comparing the amounts in the simulation to both the actual 2015-16 and the actual 2014-15 is important because it shows that most CEPDs that decreased in funding under the new formula still increased compared to the 2014-15 amounts (prior to the additional \$10 million in 61a1 funds).

Below is a detailed description of the information contained in each sheet:

### **Sheet1: 60% simulation by CIP Code (Table 1):**

This sheet shows the top 20 CIP Codes in the new Added Cost Rank List (new rank is shown in column 1). Column 4 shows the actual 61a1 funding generated statewide for each CIP code for 2015-16 (based on 2014-15 data) using the old formula. Note that only 13 CIP Codes generated 60% funding under the old formula, even with the additional \$10 million. One CIP Code that generated funding under the old rank list (51.1000) is no longer in the top 20 on the new Rank list and so will not generate 60% funding.

Columns 7, 8 and 9 show the number of enrollees, concentrators, and completers in the CIP code. Column 11 shows the rank factor based on where the CIP Code falls on the new rank list, and column 13 shows the new Cost Factor (a detailed analysis showing how the cost factor was generated is shown in the sheet "Program Cost Factor-by CIP Code" in the same workbook.

Column 14 shows a value obtained by doing the formula calculations (details regarding how this value relates to the funding amount shown in column 18 can be found in the next sheet titled "60% Sim by CIPCode-Tbl 1 Detailed").

Column 18 shows the amount of 60% funds generated for each of the top 20 CIP Codes on the new Added Cost Rank List. Column 19 shows what percent of the 60% funds were generated by each CIP Code. Column 20 shows the increase or decrease for each CIP Code compared to the actual 2015-16 amounts generated by the old formula. Column 21 shows the percent change. Columns 22 and 23 show the same information comparing the new formula simulation results to the actual amounts generated by each CIP Code for 2014-15 funding.

### **Sheet 2: 60% Sim by CIPCode-Tbl 1 Detailed**

This sheet shows the simulation for the 60% compared to actual 2015-16 and actual 2014-15 funding amounts. It is the same as sheet 1 with the following additional columns:

Column 16—Share Fraction. This shows the Share Factor for the CIP Code (column 14) divided by the total of all share factors for the top 20 CIP Codes on the rank list which gives the fraction

which is multiplied by the available 60% funds which shows how much of the 60% was generated by the CIP Code.

**Sheet 3: 60% SIM by CEPD-Table 2:**

This shows the amount of 60% funds received by each CEPD in 14-15 (column 3), 15-16 (column 6) and the simulation of how much 60% funds would have been generated by each CEPD for 15-16 using the new formula and new rank list (column 12). Column 13 shows whether the new formula would have resulted in more or less 60% funds for the CEPD in 15-16 (column 13) and the percent gain or loss (column 14). Column 15 shows whether the simulated 15-16 amount based on the new formula would have been greater or less than the CEPD actually received in 14-15 (column 15) and percent gain or loss (column 16).

**Sheet 4: 40% by CEPD (CEPD Share)-Tbl 3:**

This sheet shows the actual CEPD Share funds received by each CEPD in 2014-15 (column 4) and 2015-16 (column 7) and the amount the CEPD would have received in 2015-16 under the new formula for calculating CEPD Share (column 20). Columns 9, 10, and 11 show the number of completers (9), concentrators (10), and enrollees (11) used in the simulation. Column 21 shows whether the CEPD share would have been greater or less than actually received in 2015-16 and the percent difference (column 22). Column 23 shows whether the 2015-16 simulation amount based on the new formula would have been greater or less than actually received in 2014-15 and column 24 shows the percent difference.

**Sheet 5: 60%+40% Combined by CEPD-tbl 4:**

This sheet combines the information shown in sheet 3 and sheet 4 and shows the total 60% and 40% funds that would have been received by each CEPD in 2015-16 using the new formula.

Columns 3, 4 and 5 show the actual 60%, 40% and total 61a1 funds received by the CEPD in 2014-15 based on 2013-14 data and \$25,811,300 available.

Columns 6, 7 and 8 show the actual 60%, 50%, and total 61a1 funds received by the CEPD in 2015-16 based on 2014-15 data and \$35,811,300 using the old rank list.

Column 8a shows the 9-12 enrollment used in calculating the actual CEPD share for 2015-16. This can be used to help understand why some CEPDs gained or lost funding compared to the old formula because the new formula for CEPD share is different in two ways: 1) it is based only on CTE students, whereas the old CEPD share formula was based 50% on CTE student hours and 50% on 9-12 enrollments, and 2) the new formula uses only concentrators and completers when computing CEPD share, whereas the old formula was based partially on student hours for all eligible CTE students.

Column 8b shows the percent of all concentrators and completers in the state that were reported in the CEPD. This value is used in computing CEPD share in the new formula.

Column 8c shows the percent of students within the CEPD who were concentrators and completers. This percentage can help in understanding why a CEPD would have received more or less CEPD share funding under the new formula because, all else being equal, CEPDs with a greater number of concentrators and completers will generate more funding than those with a lower number. CEPDs that have a large number of CTE students but a lower percentage of students who become concentrators or completers will generate less CEPD share in the new CEPD share formula than a CEPD that has more concentrators and completers.

Columns 9, 10 and 11 show the number of completers, concentrators and enrollees in the CEPD.

Column 12 shows the 60% amount that would have been generated for the CEPD using the new 61a1 funding formula and new rank list (based on \$35,811,300). Column 13 shows how much more or less funding would have been generated by the new formula compared to the actual 60% funds generated under the old formula and old rank list for 2015-16. Column 14 shows the percent increase or decrease compared to actual 60% funds received for 2015-16. Columns 15 and 16 compare the simulation 60% under the new formula (based on \$35,811,300) compared to the actual amount received by the CEPD in 2014-15 (based on \$25,811,300) and the percent difference.

Column 17 shows the total number of concentrators and completers for the CEPD, and column 18 shows the fraction of concentrators and completers in the CEPD compared to the entire state (the total of column 17) (number in column 17 for the CEPD divided by the total of column 17). Column 19 shows the amount of 40% dollars used in the simulation and column 20 shows the amount of 40% funds that would have been generated by the new formula for the CEPD (column 18 x column 19).

Column 21 shows the increase or decrease in 40% funds between the simulation of the 2015-16 amount and the actual 2015-16 amount received (based on the old CEPD share formula). Column 22 shows the percent change. Columns 22 and 23 show the same information but comparing the simulation to the actual amount received by the CEPD in 2014-15.

Column 25 shows the total of the 60% funds and 40% funds the simulation generated for the CEPD and columns 26 and 27 compare the simulation amount to the actual amount received in 2015-16. Columns 28 and 29 show the simulation amount compared to the actual 2014-15 amounts (based on \$25,811,3000).

#### **Sheet 5: 60% Sim for 15-16 By Fisc Agenc:**

This sheet shows the amount of 60% funds that would have been generated by each PSN using the new 61a1 funding formula and the new Rank List.

Column 1 shows the CEPD, column 2 shows the fiscal agency district code, and column 3 the fiscal agency name. Columns 4 and 5 show the operating building number and name. Columns 6 and 7 show the CIP Code and program name associated with the PSN. Column 8 shows the PSN. Columns 9, 10, and 11 show the number of completers, concentrators, and enrollees reported for the PSN. Column 12 shows the program cost weight (from sheet 7 in the same workbook), and column 13 shows the rank weight (from sheet 6 in the same workbook).

Column 14 shows the amount of 61a1 60% funds that would have been generated by the PSN using the new formula. Note that only programs with CIP Codes in the top 20 on the new Rank List would generate 60% funds. PSNs with CIP Codes lower on the rank list will have \$0 under column 14. These programs may generate 40% funds based on which PSNs the CEPD chooses to fund with its CEPD Share funds.

#### **Sheet 6: Program Rank Factor**

This sheet shows the top 20 CIP Codes on the new Added Cost Rank List and the weight that was used in the 61a1 simulation funding formula. The last column on the right shows the estimated cost factor for the CIP Code for comparison purposes.

### **Sheet 7: Program Cost Factor-by CIP Code**

This sheet shows the CIP codes for all state-approved CTE programs, the total expenditures reported in the most recent three years (column 4), and the average expenditure (column 5). Column 6 shows the total enrollment for each CIP Code and column 7 shows the average number of students over the past three years. Column 8 shows the average per student cost (based on average reported expenditures) for the CIP Code. Column 9 shows the rank (1=highest) of the CIP Codes from highest to lowest average per student cost. Column 10 shows the expenditure group for the CIP Code used in the 61a1 funding formula simulation (the CIP Codes in the highest third in terms of per student cost are in group 1, the CIP Codes in the middle third of per student cost are in group 2, and the CIP Codes in the lowest third of average per student cost are in group 3. Column 11 shows the weight used for the cost factor in the 61a1 funding simulation with group 1 having a weight of 10, group 2 having a weight of 5, and group 3 having a weight of 1.

### **Sheet 8: PSN-level formula data**

This sheet provides all of the data that is needed to run the simulation for the 2015-16 61a1 funding amounts—both 60% and 40%. The sheet is configured with formulas so that it is possible to change numbers and see the impact of the changes.

The sheet may be filtered by CEPD, Fiscal Agency, Building, or CIP Code, among other options. To filter the sheet, click on the arrow in row 1 in the column you want to use as a filter. This will drop down a box with check marks. Unclick “(Select All)” and click the values you wish to see. For example, to see only CEPD 01, unclick “(Select All)” and then click the check box next to “01.” The sheet will then show only PSNs in CEPD 1. To see all of the PSNs in a certain fiscal agency, click the arrow in row 1, column C, unclick “(Select All)” and click the box next to the fiscal agency or agencies of interest. To return the sheet to showing all, click the arrow in the filter column and click the box next to “(Select All).” To be sure you have displaying all rows, make sure you choose “(Select All)” in all columns you may have used to filter. You may filter the data using multiple columns. For example, you may use the filter to see only certain CIP Codes within a CEPD. You would choose the filter in the CIP Code column and the CEPD column. It is important not to edit the cells that contain formulas or the spreadsheet will not work correctly. All of the columns show are also shown in other sheets in the workbook and are described above. Columns X through AC show how the amounts calculated by this sheet differ from the amounts calculated using SQL in CTEIS and displayed in the other sheets. Although some of the values are fairly large, the differences appear to be due to rounding errors.

If you have questions, please contact Joan Church at 517-335-0360 or [ChurchJ@michigan.gov](mailto:ChurchJ@michigan.gov). You may also contact Jill Kroll at 517-241-4354 or [krollj1@michigan.gov](mailto:krollj1@michigan.gov)