

## Supporting Documentation for Vermont Funding Simulator

The following document briefly describes the contents and functionality of the Vermont Funding Simulator (VFS) developed for the Study of Pupil Weights in Vermont's Education Funding Formula. The simulator has been programmed in Microsoft Excel and consists of a series of linked worksheets. We have organized the document into two sections that describe the worksheets embedded in the simulator and simple steps for using the tool.

### Description of Simulator Worksheets

1. **Simulation Variable List** – This worksheet contains a list of all of the district-level variables included on the Simulation worksheet. In addition to listing the names of each variable, the columns of the Simulation Variable List include variable descriptions, explanatory notes for those variables that are calculated, and data sources.
2. **Funding Weight Adjustments** – This worksheet includes the sets of funding adjustment weights used for all simulation scenarios available in the Simulation worksheet. The funding adjustment weights in Options A through D are fixed and cannot be modified by the user (are read-only). These are the empirically derived weights from the cost-function analysis and subsequent weight estimation. Importantly, the scenarios under Options A and B were used to develop Simulations A.1 and B.1, respectively, described in Chapter 6 of the main text.

Custom funding weight adjustments can also be entered by the user under the columns labelled Custom A through Custom D. The scenarios under Custom A and Custom B were used to develop Simulations A.2 and B.2, respectively, described in Chapter 6 of the main text. Definitions of the eight scenarios are as follows:

**Option A:** Funding adjustment weights derived from cost-function model using school-level source data with special education funding distributed by long-term ADM.

*NOTE: This scenario was used to generate the Simulation A.1 results described in Chapter 6 of the main report.*

**Option B:** Funding adjustment weights derived from cost-function model using school-level source data with special education funding distributed by equalized pupils.

*NOTE: This scenario was used to generate the Simulation B.1 results described in Chapter 6 of the main report.*

**Option C:** Funding adjustment weights derived from cost-function model using district-level source data with special education funding distributed by long-term ADM

**Option D:** Funding adjustment weights derived from cost-function model using district-level source data with special education funding distributed by equalized pupils.

**Custom A:** Custom user-defined funding adjustment weights using school-level source data with special education funding distributed by long-term ADM.

*NOTE: The weights in this scenario have been is pre-populated to generate the Simulation A.2 results described in Chapter 6 of the main report.*

**Custom B:** Custom user-defined funding adjustment weights using school-level source data with special education distributed by equalized pupils.

*NOTE: The weights in this scenario have been is pre-populated to generate the Simulation B.2 results described in Chapter 6 of the main report.*

**Custom C:** Custom user-defined funding adjustment weights using district-level source data with special education funding distributed by long-term ADM.

**Custom D:** Custom user-defined funding adjustment weights using district-level source data with special education distributed by equalized pupils.

- Simulation** – The simulation worksheet displays the results of applying different sets of funding adjustment weights specific to each scenario. The second row contains a dropdown menu to select the set of funding weight adjustments from the Funding Adjustment Weights worksheet that will be used for the simulation (cell B3). The simulation worksheet also includes a pull-down menu to select whether or not enrollment weights for small schools or districts should apply only to districts with levels of sparsity that are less than 55 and 100 people per square mile, respectively (cell B5). Once the funding adjustment weight scenario is selected from the pulldown menu the “Funding Adjustment Weight Application” yellow panel (cells A7 through B20) will show the values of weights corresponding to the selected scenario. Depending on the chosen scenario and sparsity setting for the enrollment funding adjustment weights, the values for the various “Statewide Measures and Calculations” in the orange panel (cells D7 through E18) will update accordingly, as will the district-specific measures represented by the light green district level variables (cells AJ25 through BE242). Also displayed in light blue are columns containing district-level identifiers and selected variables to aid interpretation of the results including pupil counts, average daily membership, per-pupil spending and equalized homestead tax.

## Simple Steps for Performing Simulations

**Step 1** – If you would like to explore custom simulations, please specify the values for the funding adjustment weights in columns F through I of the Funding Weight Adjustments. For instance, to replicate Simulations A.2 and B.2 simply enter the following weights into the cells for scenarios Custom A and Custom B (columns F and G) on the Funding Weight Adjustments worksheet (note these cells have already been pre-populated in the VFS):

Multiplicative Weights	Custom A (Simulation A.2)	Custom B (Simulation B.2)
PreK (Centered on 1)	0.46	0.46
Middle School Students (Centered on 1)	1.23	1.23
High School Students (Centered on 1)	1.13	1.20
Poverty (Centered on 0)	3.14	2.97

Additive Weights	Custom A (Simulation A.2)	Custom B (Simulation B.2)
English Learners	1.33	1.27
Students with high incidence disabilities	-	3.15
Students with low incidence disabilities	-	2.15
District enrollment < 100	-	-
School enrollment <100	0.24	0.26
School enrollment 100 to <250	0.12	0.12
Sparsity Category 1 (<36 per square mile)	0.23	0.23
Sparsity Category 2 (36 to 54.9 per square mile)	0.17	0.17
Sparsity Category 3 (55 to 99.9 per square mile)	0.11	0.11

**Step 2** – On the Simulation worksheet, please select the desired simulation scenario in the drop-down menu (cell B2).

**Step 3** – On the Simulation worksheet, use the pull-down menu in cell B5 to indicate whether you would like enrollment weights to depend on different levels of sparsity. Select “No” to have the funding adjustment weights for enrollment apply to all districts regardless of sparsity. Select “<100” to have the funding adjustment weights for enrollment weights apply to only in districts with sparsity of less than 100 people per square mile. Select “<55” to have the funding adjustment weights for enrollment apply only in districts with sparsity of less than 55 people per square mile. Note that in order to replicate the results for Simulations A.1, B.1, A.2 and B.2 discussed in Chapter 6 of the report the sparsity setting must be set to “<55”.

**Step 4** – Review the simulation results by examining values of the calculated variables in columns AJ through BE of the Simulation worksheet in conjunction with the variable definitions listed on the Simulation Variable List worksheet.