

# STUDENT FUNDING FORMULA COMPARISON

Prepared for Delaware Department of Education

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In the following report, Hanover Research compares the state's current allocation formula to the weighted student funding formula for publicly funded schools in Delaware.



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# EXECUTIVE SUMMARY

## INTRODUCTION

This report is a follow up on the previous analysis where Hanover provided Delaware Department of Education (DDOE) estimates of school-level funding based on a proposed weighted student funding (WSF) formula. In this report, we compare the allocations of the WSF against current allocations to determine the potential effects of such a change on the distribution of funds across the state. Ultimately, we observe that the WSF formula achieves its intended effect; although the WSF formula allocates slightly lower levels of funding for the average school, it increases funding for schools which have higher shares of special education students.

This report comprises two sections:

- **Section I: Data and Methodology** describes the methodologies used to allocate WSF and current funding at the school and district level.
- **Section II: Analysis** summarizes the results of the funding projections and identifies the highest- and lowest-ranking schools in terms of projected funding changes between current allocations and the WSF formula.

The **Interactive Data Supplement** that accompanies this report provides full details on district- and school-level funding for all the public schools in Delaware.

## SECTION I: DATA AND METHODOLOGY

In this section, Hanover Research presents the methodological approach to projecting district- and school-level funding based on the available data.

### DATA

#### WSF ALLOCATION FORMULA

For the purposes of conducting the present analysis, the Delaware Department of Education (DDOE) provided Hanover Research with data on 134,442 students in 222 schools in 43 districts. The dataset included information on student-level characteristics such as grade level, socioeconomic status, and special education needs, among others.

The funding formula modelled in the previous report allocates 7 percent of the total budget to the DDOE. Of the remaining budget for district and school distribution, 15 percent of the total budget for the local education agencies (LEAs) remains at each district office while schools receive the remainder based on the per-student weighted funding formula.

#### PER-STUDENT WEIGHTING FACTORS

In a weighted student funding model, students would receive a baseline amount of funding which is adjusted (or “weighted”) based on various student-level characteristics. For example, according to this model, districts would receive additional funds on a per-student basis for English language learners (ELLs), special education students, and so on. Students that are classified with multiple eligible funding factors (e.g., ELL and special education classification) would receive additional funding beyond the baseline amount for each category. Rather than allocating funds solely by the number of enrolled students, this model multiplies each student’s baseline funding by factors drawn from the weighting classifications listed in Figure 1.1.

**Figure 1.1: Weighted Student Funding Factors**

STUDENT CHARACTERISTIC	FACTOR <sup>1</sup>
<b>Grade Level</b>	
Pre-K <sup>2</sup>	1.05
Grades K-5	1.00
Grades 6-8	1.08
Grades 9-12	1.05
<b>Special Education</b>	
Basic	1.05
Intense	1.40
Complex	2.50
<b>Other Factors</b>	
Low Income	1.12
English Language Learner	1.50
Migrant or Homeless <sup>3</sup>	1.20

<sup>1</sup> A factor of 1.00 is equal to the baseline. Weighting factors were provided by DDOE.

<sup>2</sup> Pre-K students who are not classified as intense or complex are classified as basic.

<sup>3</sup> Because the funding formula stipulates that extra funding is given for students who are homeless or migrants, we consolidate these into a single variable.

## ESTIMATING CURRENT FUNDING

This section presents the methodology that was used to create the actual funding allocations which are subsequently compared to the WSF allocations. To establish the actual funding levels, this analysis relies on the district-level income sources for 2013-14 as provided to Hanover Research by DDOE.<sup>4</sup>

Due to differences in district-level accounting processes (e.g., line items for transportation or other districtwide services), this report uses school-level enrollment to establish the distribution of actual district-level funds. Specifically, district-level funds are distributed proportionally according to the number of students enrolled at each school within a district as of fall 2013.<sup>5</sup> For example, in the case of Appoquinimink (district 29), the total funding for 2013-14 is reported as \$77,020,064. The district enrolled 9,877 students in fall 2013 across 16 schools. Thus, for a school with 503 students, the allocated funds are distributed proportionally as follows:

Total Funds for Appoquinimink = \$77,020,064  
Total Number of Students in Appoquinimink: 9,877  
Total Number of Students in School 10: 503

Funds for School 10 =  $(503/9,877) * \$77,020,064$   
= \$3,922,354.

One consideration to note when allocating the income sources to the districts is that any item that was reported as a separate line item was added back into the district's total income. Thus, for example, for the Christina district, the incomes reported for Del Autistic, Margaret S. Sterck, R.E.A.C.H., and Christina ILC are added back into the total income.

## CHANGES FROM PREVIOUS REPORT

Since the aim of this exercise is to compare how school funding would change if DDOE moved from their current funding levels to the WSF formula, Hanover adjusted its approach to ensure that results and funding is comparable. First, this analysis updates the overall budget used in the previous report from \$1,227,493,100 to \$1,228,704,148. Additionally, the current analysis reserves 4.8577 percent for the DDOE rather than 7 percent in order to demonstrate more clearly how school-level funding is affected.

One note of caution when interpreting these results is that the WSF formula allocates 15 percent of the district's funding to local education agencies (LEAs). In the current funding data, we do not have information on the exact amount that is allocated towards the LEAs. Therefore, the current allocation to the schools should be interpreted as the allocation to

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<sup>4</sup> Source: LEA's Annual Financial Statement to DOE Finance, Table 30, State Revenue Receipts.

<sup>5</sup> School-level enrollments are determined based on the dataset provided by DDOE.

schools *and* funding for the LEAs. As such, the estimated current funding for schools is likely to have been over-estimated.

## SECTION II: ANALYSIS

In this section, Hanover Research analyzes the differences in school-level funding based on the two funding approaches. The comparison focuses on non-charter schools.

### COMPARISON OF SCHOOL-LEVEL FUNDING FORMULA DISTRIBUTIONS

Figure 2.1 displays the average funding for the current and the WSF formula. The reader will observe that the average school receives a little more funding under the current formula. However, under the WSF formula, the range of funding values less. This can be seen by the higher minimum and lower maximum funding under the WSF formula compared to the current formula, as well as the lower standard deviation of funding across schools.

**Figure 2.1: Average Funding**

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
WSF Formula Funding 2013-14	198	\$ 4,575,762	\$ 2,603,283	\$ 60,576	\$ 16,047,122
Current Funding Formula 2013-14	198	\$ 5,496,416	\$ 3,431,730	\$ 51,835	\$ 19,194,723

Figure 2.2 plots the estimated funding of the two formulas for each school, along with a line of best fit. Although there are some schools that get more or less funding depending on the formula used, the correlation between the two funding formulas is over 97 percent, implying that the new WSF formula is a not a substantial alteration of school funding distributions.

Figure 2.3 investigates the change in funding at the school level a little further. We observe that while most schools’ funding changes by less than \$1 million, there are a few schools whose funding are reduced by greater amounts when switching from the current allocation to the WSF allocation. Further, in Figures 2.4 and 2.5, we provide a list of the top five schools that stand to gain the most from the proposed switch, and the top five that stand to lose the most from the switch.

Figure 2.2: WSF versus Current Funding Formula

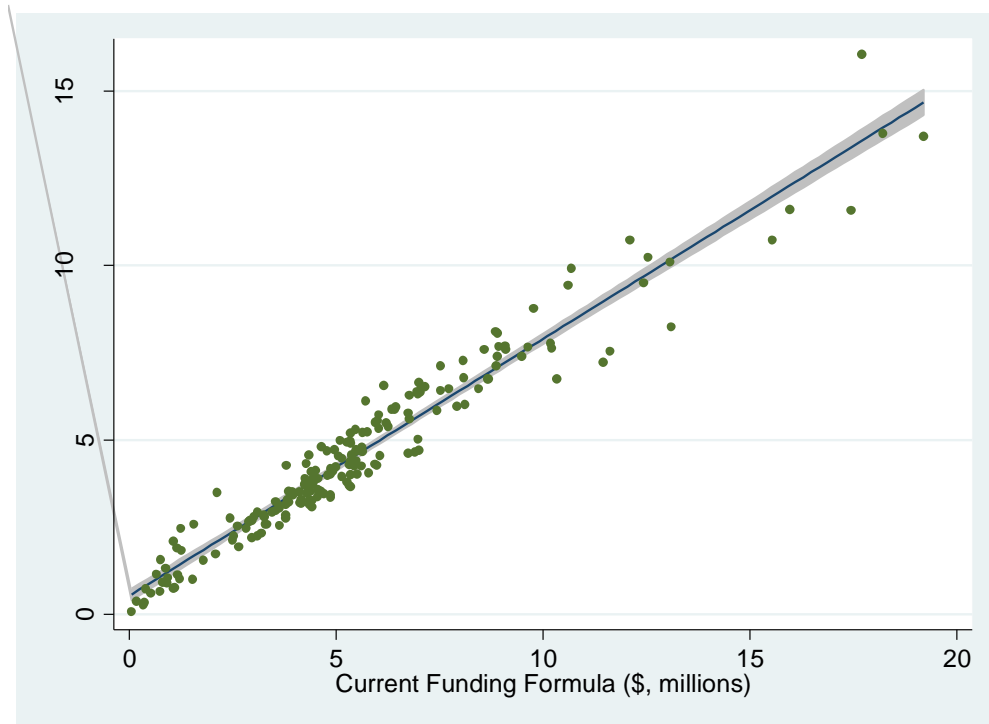
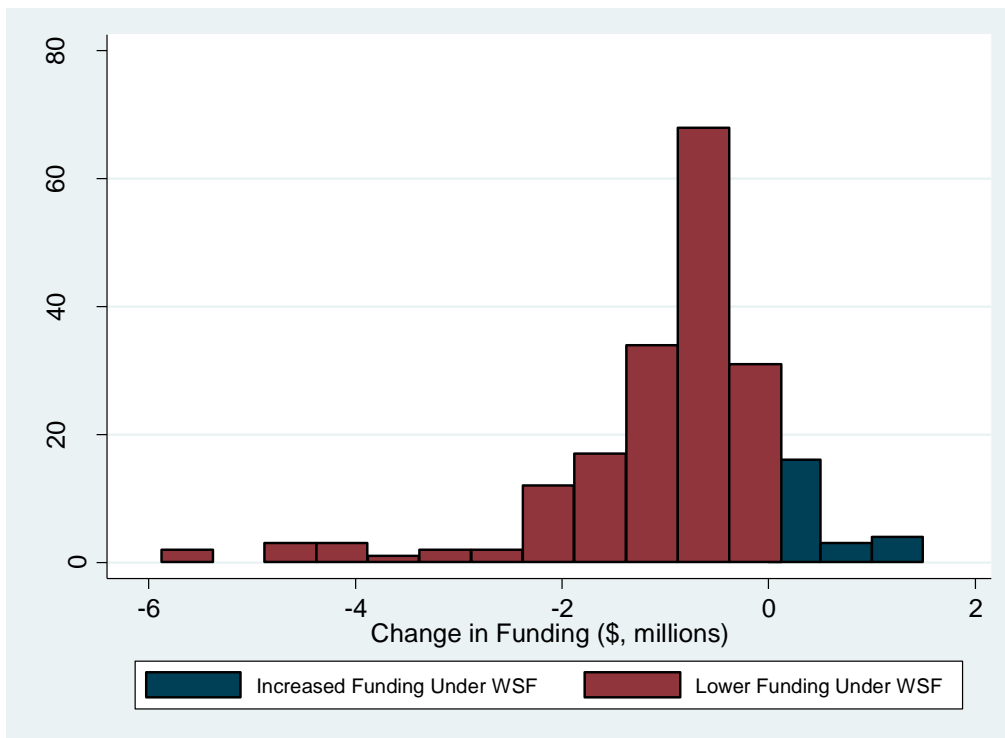


Figure 2.3: Change in Funding





**Figure 2.4: Top Five Schools that Gain Funding under WSF**

DISTRICT	SCHOOL	STUDENTS	FUNDING UNDER WSF	CURRENT ALLOCATION FORMULA 2013-14	PERCENTAGE CHANGE <sup>6</sup>	FUNDING CHANGE <sup>7</sup>
10	630	216	\$3,491,084	\$2,129,461	63.9%	\$1,361,623
32	516	155	\$2,448,717	\$1,247,311	96.3%	\$1,201,405
36	750	131	\$2,095,509	\$1,064,826	96.8%	\$1,030,683
33	538	152	\$2,572,139	\$1,561,343	64.7%	\$1,010,797
34	514	94	\$1,572,379	\$766,210	105.2%	\$806,170

**Figure 2.5: Top Five Schools that Lose Funding under WSF**

DISTRICT	SCHOOL	STUDENTS	FUNDING UNDER WSF	CURRENT ALLOCATION FORMULA 2013-14	PERCENTAGE CHANGE <sup>8</sup>	FUNDING CHANGE <sup>9</sup>
38	80	1,588	\$11,565,382	\$17,445,223	-33.7%	-\$5,879,841
10	626	1,947	\$13,705,588	\$19,194,723	-28.6%	-\$5,489,136
39	652	1,192	\$8,230,539	\$13,101,437	-37.2%	-\$4,870,897
40	770	1,545	\$10,727,039	\$15,556,864	-31.0%	-\$4,829,824
13	648	1,866	\$13,786,174	\$18,229,822	-24.4%	-\$4,443,648

**IMPACT ON SCHOOLS WITH SPECIAL NEEDS STUDENTS**

A handful of schools in Delaware specialize in providing education to special needs students. Figure 2.6 displays the full list of these schools, and we observe that in general these schools tend to receive more funding with the WSF formula compared to the current formula. On average the WSF formula increases the funding of these schools by 58 percent.

**Figure 2.6: Comparing Funding for Schools with High SPED Percentages**

DISTRICT	SCHOOL	STUDENTS	PERCENTAGE SPECIAL ED	FUNDING UNDER WSF	CURRENT ALLOCATION FORMULA 2013-14	PERCENT CHANGE <sup>10</sup>	FUNDING CHANGE <sup>11</sup>
10	630	216	100%	\$3,491,084	\$2,129,461	63.9%	\$1,361,623
32	516	155	100%	\$2,448,717	\$1,247,311	96.3%	\$1,201,405
36	750	131	100%	\$2,095,509	\$1,064,826	96.8%	\$1,030,683
33	538	152	100%	\$2,572,139	\$1,561,343	64.7%	\$1,010,797
34	514	94	100%	\$1,572,379	\$766,210	105.2%	\$806,170

<sup>6</sup> WSF compared to Current as base

<sup>7</sup> WSF - Current

<sup>8</sup> WSF compared to Current as base

<sup>9</sup> WSF - Current

<sup>10</sup> WSF compared to Current as base

<sup>11</sup> WSF - Current

DISTRICT	SCHOOL	STUDENTS	PERCENTAGE SPECIAL ED	FUNDING UNDER WSF	CURRENT ALLOCATION FORMULA 2013-14	PERCENT CHANGE <sup>10</sup>	FUNDING CHANGE <sup>11</sup>
33	540	112	100%	\$1,889,012	\$1,150,463	64.2%	\$738,549
17	728	131	100%	\$1,827,696	\$1,267,168	44.2%	\$560,529
13	650	68	100%	\$1,140,706	\$664,324	71.7%	\$476,382
32	527	108	100%	\$1,310,003	\$869,094	50.7%	\$440,909
36	689	49	100%	\$731,471	\$398,294	83.7%	\$333,177
32	526	303	100%	\$2,766,132	\$2,438,292	13.4%	\$327,840
32	530	22	100%	\$377,078	\$177,038	113.0%	\$200,040
13	655	82	99%	\$921,001	\$801,096	15.0%	\$119,905
10	615	52	100%	\$597,743	\$512,648	16.6%	\$85,095
34	450	110	100%	\$923,156	\$896,628	3.0%	\$26,527
16	765	6	100%	\$60,576	\$51,836	16.9%	\$8,740
29	13	118	100%	\$896,449	\$920,155	-2.6%	-\$23,705
36	745	46	100%	\$341,491	\$373,908	-8.7%	-\$32,417
31	510	148	100%	\$1,126,794	\$1,169,593	-3.7%	-\$42,799
15	663	37	100%	\$271,552	\$344,366	-21.1%	-\$72,814
33	545	255	100%	\$2,518,831	\$2,619,358	-3.8%	-\$100,526

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