Resources and Adjustments from the 2016 Study and Examples of Student Adjustments from Other States

This document provides the resources identified at base level and those that determine the weights recommended from the study. In addition, for the special needs weightings, examples from other states have been provided.

Base Resources

The study team felt that the best benchmark of success to develop a single adequacy figure in Maryland would be to identify what it would take not just to outperform other schools today, but to reach the higher benchmark of being able to ensure all students can achieve all current state standards. Therefore, the study team recommended that a final adequacy base cost figure be derived from the Evidence-Based (EB) and Professional Judgment (PJ) approaches.

The study team needed to then determine how to reconcile the base cost figures from the EB and PJ approaches. As noted in the final report, the two approaches produced relatively similar base cost figures so the study team reviewed the resources identified by each approach to reconcile the key differences that produced these differing figures to come up with a final, blended adequacy base figure and set of resources.

Addressing Key Resource Differences between EB and PJ Approaches

In its review of the EB and PJ resource models, the study team identified five important areas of resource differences between the two approaches:

1. Elementary school teacher-to-student ratios.
2. Middle school teacher preparation time.
3. School administration staffing, specifically assistant principals.
4. School-level student support services.
5. Inclusion of CTE resources in the models.

The study team reviewed the resource differences and made a recommendation in each area to create an adjusted model for each approach. It is important to note that the study team was not attempting to create a specific model for implementation but instead was reconciling the largest resource differences in order to create a single cost estimate.

Elementary School Teacher Ratios

Both models had the same classroom student-teacher ratios in kindergarten through grade three but differed in grades four and five. Given that teacher staffing is the largest cost driver in both models, the study team addressed this difference first. The EB identifies a student-teacher ratio of 25:1 while the PJ identifies a ratio of 20:1 in grade four and five. The team deferred to the available best practice research and used the 25:1 ratio in grades four and five, since additional teaching staff are added on top of the base once student need is taken into consideration.

Middle School Planning and Collaboration Time

The second difference was the amount of time allocated for planning, collaboration, and professional development for middle-school teachers during the school day, represented as a percentage of the day. The PJ participants identified a modified block schedule that provided this time, with teachers teaching in classrooms 70 percent of the day. The EB approach had a block schedule with four 90-minute periods, where a teacher would teach for three blocks and have one block as preparation time, resulting in teachers teaching 75 percent of the day. Given that common planning and professional development time are key components of any successful school, as was stressed repeatedly by panelists in both approaches, the study team felt that meaningful time during the day to allow for these activities was needed to meet state standards. The study team recommends the slightly more conservative estimate from the EB approach with teachers teaching 75 percent of the day and 25 percent of the day set aside for planning and collaboration activities. This still represents a significant portion of the day but is more in line with the teaching percentages at the elementary and high school levels in both the PJ and EB models.

School Administrator Positions

The third difference was the number of school administrators, specifically assistant principals. The PJ and EBPJ panels both mentioned the need for additional administrative time to ensure proper evaluation of teaching staff and to provide time for instructional leadership. The two models, however, differed in how this feedback was used. The PJ approach deferred to the experience of educators, with panels identifying the need for two assistant principals per 450 students in elementary schools, three assistant principals per 720 students in middle schools, and four assistant principals per 1,200 students in high schools. The EB approach deferred to the available research (which is limited regarding the impact of additional administrative staff) and retained its original recommendation of no assistant principals per 450 students in elementary schools, one assistant principal per 720 students in middle schools, and three assistant principals per 1,200 students in high schools. The study team felt that while the research may not suggest the need for additional assistant principals at all levels, given the state's requirements around educator evaluations and panelists' strong opinions about the importance of the positions, each model was adjusted to include one assistant principal in the elementary school, two assistant principals in the middle school, and three assistant principals in the high school.

Student Support Services Positions

The next key area of difference was school-level student support services, positions such as nurses, counselors, social workers, and psychologists, at the elementary level. Both the EBPJ and PJ panelists identified a significant need for student support resources, even at the base level. The actual number of staff recommended varied between the two approaches, with the PJ approach recommending 3.8 student support staff positions and the EB model instead recommending 2.0 student support staff positions. The study team settled on three student support staff positions at the elementary level as a compromise between PJ and EB recommendations to adequately meet student needs; this would allow for one nurse and two counselors, or a different configuration of the positions that would work best for a school site (such as a social worker instead of one of the counselors).

CTE Expenditures

Finally, the PJ study included CTE expenditures in the base while the EB study kept CTE as a separate per student amount. The study team decided that given that CTE is not a separate component of the current funding system, these resources should be a part of the base and adjusted the EB model accordingly.

Final Blended Model Resources and Base Cost

The following tables present the blended model resources at the elementary, middle and high school level. This blended set of resources generated the final adequacy base figure of $10,880. The study team felt this amount appropriately reflects the best estimate of the level of resources needed for students to meet state standards.

Elementary School, 450 students	
Personnel	
Instructional Staff	
Teachers	26.0
Specials Teachers	4.0
Instructional Facilitator (Coach)	3.0
Librarians/Media Specialists	1.0
Technology Specialists	1.0
Media Aide	1.0
Instructional Aides	2.5
Pupil Support Staff	
Counselors	2.0
Nurses	1.0
Alternative to Suspension	1.0
Administrative Staff	
Principal	1.0
Assistant Principal	1.0
Bookkeeper	1.0
Clerical/Data Entry	2.0
Other Staff	
IT	1.0
Test/Data Coordinator	1.0
Substitute	1.0
Other Costs	
Professional Development	$75
Non-Personnel School Level Costs (supplies and materials, activities, licensing, etc.)	$365
Technology Hardware	$248
Additional Programs (Summer School, Before and After School, etc)	$57
District-Level Costs (Administration, M&O, Non-Personnel Costs)	$2,060

Middle School, 720 students	
Personnel	
Instructional Staff	
Teachers	38.4
Instructional Facilitator (Coach)	4.0
Teacher Tutor/ Interventionist	1.0
Librarians/Media Specialists	1.0
Media Aide	1.0
Technology Specialists	1.0
Instructional Aides	
Pupil Support Staff	
Counselors	2.9
Nurses	1.0
Psychologists	0.5
Social Worker	1.0
PPW	0.5
Behavior Specialists	1.0
Alternative to Suspension	1.0
Administrative Staff	
Principal	1.0
Assistant Principal	2.0
Bookkeeper	1.0
Clerical/Data Entry	3.0
Other Staff	
IT	1.5
School Resource Officer (paid by outside agency)	1.0
Test/Data Coordinator	1.0
Substitute	1.0
Other Costs	
Professional Development	$75
Non-Personnel School Level Costs (supplies and materials, activities, licensing, etc.)	$365
Technology Hardware	$248
Additional Programs (Summer School, Before and After School, etc)	$57
District-Level Costs (Administration, M&O, Non-Personnel Costs)	$2,060

High School, 1200 students	
Personnel	
Instructional Staff	
Teachers	66.0
Instructional Facilitator (Coach)	5.0
Librarians/Media Specialists	1.0
Technology Specialists	1.0
Pupil Support Staff	
Counselors	4.8
Nurses	1.0
Health Aide	1.0
Psychologists	1.0
Social Worker	1.0
PPW	1.0
Behavior Specialists	1.0
In School Suspension	1.0
Alternative to Suspension	1.0
Administrative Staff	
Principal	1.0
Assistant Principal	3.0
Athletic/Activities Director	1.0
Bookkeeper	1.0
Clerical/Data Entry	5.0
Other Staff	
IT	2.0
School Resource Officer (paid by outside agency)	1.0
Test/Data Coordinator	1.0
Other Costs	
Professional Development	$75
Non-Personnel School Level Costs (supplies and materials, activities, licensing, etc.)	$365
Technology Hardware	$248
Additional Programs (Summer School, Before and After School, etc)	$57
District-Level Costs (Administration, M&O, Non-Personnel Costs)	$2,060

Compensatory Education

Resources

The 2016 study identified a Compensatory Education weight of .35. Both the EB and PJ approaches recommended similar resources for compensatory education students:

- instructional/intervention support
- social-emotional support from counselors/social workers
- extended learning time through before/after school and summer school

The resulting adjustments from the EB and PJ approaches were similar, with an EB weight of 0.29 and an averaged PJ weight across the three concentration levels of 0.39. The EB weight did not include the resources for an alternative school (instead the resources for an alternative school were kept as a separate categorical) while the PJ weight did; if these resources were instead included the EB weight would be 0.31.

Given the results of the study team's analysis of student assessment performance in Maryland, coupled with panel discussions that often emphasized the significant instructional and support resources needed to serve these students, the study team felt that the PJ panel weight was a better estimate of the additional resources required to provide compensatory education students with the services they need to meet state standards. Therefore, the study team developed a blended set of resources that resulted in a weight of 0.40 weight for compensatory education students, which was then reduced to 0.35 based upon available federal resources.

The following table presents the blended model resources underlying the 0.35 weight recommended.

	Elementary School of 450 students 50% Comp. Ed. (225 students)	Middle School of 720 students 50% Comp. Ed. (360 students)	High School of 1,200 students 50% Comp. Ed. (600 students)
Personnel (FTE)			
Instructional Staff			
Teachers	2.0	3.0	5.0
Instructional Facilitator (Coach)	1.0	1.0	2.0
Teacher Tutor/ Interventionist	1.0	2.0	3.0
Pupil Support Staff			
Counselor, Social Worker, PPW, Behavior Specialist, etc.	2.0	3.0	5.0
Administrative Staff			
Dean		1.0	1.0
Other Staff			
School Based Site/Service Coordinator	1.0		
Other Costs (per student amounts)			
Supplies, Materials and Equipment	$100	$100	$100
Additional Programs (Summer School, Before and After School, etc)	$1,537	$1,537	$1,537
District-Level (Alternative School)	$125	$125	$125

State Examples (Focused on states with concentration factors)

All but four states provide additional resources for at-risk students; eight states' formulas provide multiple weights for at-risk students based on the concentration of at-risk students. It is important to note that each state has a different "base" amount, so the same weight will generate differing amounts of additional revenue in different states. Several examples of state's multiple weights based on concentration of poverty follow:

Colorado: Eligibility for participation in the federal free (but not reduced) lunch program is used as a proxy of each school district's at-risk pupil population. For each at-risk pupil, a district receives funding equal to at least 12%, but no more than 30%, of its Total Per-pupil Funding. As a district's percentage of at-risk population increases above the statewide average (roughly 36.7%), an increased amount of at-risk funding is provided.

Nebraska: Additional funding is provided by multiplying the statewide average general fund operating expenditures per formula student multiplied by the number of poverty students in the school (determined by participation in the free and reduced price lunch program), by weights designated by the concentration of students in the district:

- 0.0375 for poverty students comprising more than five percent and not more than ten percent of the formula students in the school district, plus
- 0.0750 for poverty students comprising more than ten percent and not more than 15% percent of the formula students in the school district, plus
- 0.1125 for poverty students comprising more than 15% and not more than 20% of the formula students in the school district, plus
- 0.1500 for poverty students comprising more 20% and not more than 25% of the formula students in the school district, plus
- 0.1875 for poverty students comprising more than 25% and not more than 30% of the formula students in the school district; plus
- 0.2250 for poverty students comprising more than 30% of the formula students in the school district.

New Jersey: Additional weights are provided for students enrolled in the federal free and reduced lunch program. Weight varies from .41 to .46 for at-risk students, based on the percentage of at-risk students in the district: lowest weight for those districts with less than 20% of at-risk students in the district; and .46 weight for districts with more than 40% and less than 60% of at-risk students. Due to a cap in the weight, districts with greater than 40% of at-risk students also receive the .46 weight per at-risk student.

Virginia: The "At-Risk Add On" provides 1 to 13 percent above Basic Aid per student per student eligible for the federal free (not reduced-price) lunch program (capped at 13%).

Limited English Proficient (LEP)

Resources

The 2016 study recommended a weight of .35 for LEP students with the assumption that all LEP students would also receive the Compensatory Education weight for a total weight of .70. The resources and the weights for LEP from the EB and the PJ approaches were very different. The EB weight was 0.37, with 0.07 to address language services and 0.30 to provide support services. The EB model also used an unduplicated count; that is, LEP students who are also eligible for the compensatory education weight only receive the LEP weight. The PJ model identified an average weight of 0.64 to address both the instructional and support service needs of LEP students. The PJ model also applies the compensatory weight to LEP students who meet the income criteria, meaning a student who is low-income and identified as a LEP would receive both the compensatory education and the LEP weight.

To determine the appropriate blended weight, the study team first looked deeper into the resource allocations in the two models. The study team determined that support services needed for LEP students, as identified in the two approaches, were very similar to the services needed for compensatory education students, and in fact many of LEP students qualify for both programs. Therefore, the study team believes a weight of 0.40 would be appropriate to meet the support service needs for the LEP population outside of the specific language needs.

Next, looking specifically at the resources provided in each model to address student instructional needs, the study team found that the two models had very disparate recommendations, with the EB model recommending an LEP student-to-staff ratio of 100:1, and the PJ model recommending about 15:1. The case studies indicated that staff-to-student ratio from the PJ approach was a lower ratio than what is currently being utilized in successful schools, while the EB ratio was much higher.

The study team's analysis of student assessment performance indicates that there are significant achievement gaps for LEP students, even higher than that of other student populations. Based on this information, the study team determined that an adequate level of funding for language services would need to be closer to the resource estimates from the PJ approach to better address these persistent performance gaps. Therefore, the study team recommends a 0.40 weight to address the language needs of LEP students, which was reduced to 0.35 for the final recommendation given available federal resources. Students who are both LEP and eligible for compensatory education would also receive the compensatory education weight of 0.40 for necessary support services, for a combined weight of 0.80.

The blended model resources that support the recommended weight are shown in the table on the following page.

	Elementary School of 450 students 7% ELL (32 students)	Middle School of 720 students 7% ELL (50 students)	High School of 1,200 students 7% ELL (84 students)
Personnel (FTE)			
Instructional Staff			
Teachers	1.3	2.0	3.4
Instructional Facilitator (Coach)	0.3	0.4	0.7
Other Costs (per student amounts)			
Supplies, Materials and Equipment	$100	$100	$100
District-level Support (Center Program, Contracted Translation Services)	$100	$100	$100

Other States (Note, many states refer to LEP as ELL)

Forty-eight states provide additional resources to districts for LEP or English Language Learners (ELLs). States generally fall into 5 categories based on their funding mechanism: Flat Weight or Dollar Amount; Multiple Weights; Categorical Grants; Reimbursement; or Resource Allocation Model. Examples of state funding for ELL students in these categories follows.

Flat Weight or Dollar Amount

Oklahoma: The formula provides an additional 25% of base funding for each ELL student.
Arkansas: Each ELL student generates an additional $338.

Multiple Weight

Maine: *Multiple Weights based on Concentration of ELL Students*

- Districts with less than 15 ELL students: 1.7
- Districts with more than 15, but less than 251 ELL students 1.5
- Districts with more than 251 ELL students: 1.525

Hawaii: *Multiple Weights based on Proficiency Level of ELL Students*

- Fully English Proficient: 1.0648
- Limited English Proficient: 1.1944
- Non-English Proficient: 1.3888

Ohio: *Multiple Weights based on Duration of Enrollment*

- Enrollment for less than 180 Days: $1,515
- Enrollment for more than 180 Days: $1,136

Categorical Grant

Alabama: Legislative appropriation that varies year-to-year: $2,755,334 for FY18
Nevada: Separately funded program (Zoom Schools) outside of funding formula

Reimbursement

Illinois: Partial reimbursement for ELL expenses; must submit actual expenditures to the state
Wisconsin: Partial reimbursement for ELL expenses; must submit actual expenditures to the state

Resource Allocation Model

Tennessee: Funding formula provides districts with funding for an additional teaching position for every 20 ELL students and additional interpreter for every 200 ELL students.

Special Education

Resources

The 2016 study recommended a special education weight of .91. Based upon recommended resources, the PJ study resulted in a higher weight of 1.25 than the EB study's weight of 0.70. This is primarily because the EB study assumed high cost special education student services were to be fully paid for by the State, which results in their exclusion from the approach's 0.70 weight. Alternatively, the PJ study includes these students in the calculation of its 1.25 weight. If the EB model included the high-cost special education students, then the resulting weight would be higher. Using the 3.86 weight for severe special education students from the PJ approach, and the same weighting based upon the proportion of students in each need category as was done to create the average PJ weight, an EB weight that includes these higher cost students would be 0.96. Averaging the EB and PJ weight produces a weight of 1.11. Knowing that meaningful achievement gaps exist for these students, the study team recommends a rounded weight of 1.10 for special education students, including mild, moderate, and severe categories. Less available federal resources, the final recommended weight was 0.91.

The table below shows the blended model resources that can be provided given the recommended weight:

	Elementary School of 450 students 12% Special Education (54 students)	**Middle School of 720 students 12% Special Education (86 students)**	**High School of 1,200 students 12% Special Education (144 students)**
Personnel (FTE)			
Instructional Staff			
Teachers	3.0	4.8	8.0
Instructional Aides	3.0	4.8	8.0
Special Education Staff			
Therapists (Speech, OT/PT, Behavior, etc)	1.5	1.5	2.0
Coordinator (IEP, Transition)	0.5	1.0	2.0
Job Coaches (Para)			2.0
Other Costs (per student amounts)			
District-level Support (Administration, Related Services, Out of District Placement, Extended School Year, Legal, Supplies, Materials, and Equipment, etc)	$2,745	$2,745	$2,745

Other States (Focused on states using multiple weights)

Sixteen states provide funding for special education through multiple weights in their state funding formulas. Most often, the weights are based on the type/classification of the disability or are based on the level of service required to serve the student. It is important to note that each state has a different "base" amount, so the same weight will generate differing amounts of additional revenue in different states. Several examples of state's special education weights follow:

Weights Based on Disability

Arizona: Special education is funded through two groups: "Group A" means educational programs for career exploration, a specific learning disability, an emotional disability, a mild intellectual disability, remedial education, a speech/language impairment, developmental delay, homebound, bilingual, other health impairments and gifted pupils.

"Group B" means educational improvements for pupils in kindergarten programs and grades one through three, educational programs for autism, a hearing impairment, a moderate intellectual disability, multiple disabilities, multiple disabilities with severe sensory impairment, orthopedic impairments, preschool severe delay, a severe intellectual disability and emotional disabilities for school age pupils enrolled in private special education programs or in school district programs for children with severe disabilities or visual impairment and English learners enrolled in a program to promote English language proficiency.

Oklahoma: Eleven special education weights are included in the formula:

- Vision impaired: 3.8
- Learning disabilities: 0.4
- Deaf or hard-of-hearing: 2.9
- Deaf and blind: 3.8
- Educable mentally handicapped: 1.3
- Emotionally disturbed: 2.5
- Gifted: 0.34
- Multiple handicapped: 2.4
- Physically handicapped: 1.2
- Speech impaired: 0.05
- Trainable mentally handicapped: 1.3

South Carolina: Five special education weights are included in the formula:

- Educable mentally handicapped pupils and learning disabilities pupils: 1.74
- Trainable mentally handicapped pupils, emotionally handicapped pupils and orthopedically handicapped pupils: 2.04
- Visually handicapped pupils, pupils with autism and hearing handicapped pupils: 2.57
- Speech handicapped pupils: 1.9
- Pupils who are homebound: 1.0

Weights Based on Level Service

Iowa: Three special education weights are included in the formula:

- Level 1 - Students receiving specially designed instruction for a part of the educational program (includes modifications and adaptations to the general education program): 0.72

- Level 2 - Students receiving specially designed instruction for a majority of the educational program (includes substantial modifications, adaptations, and special education accommodations to the general education program): 1.21
- Level 3 – Students receiving specially designed instruction for most or all of the educational program (requires extensive redesign of curriculum and substantial modification of instructional techniques, strategies and materials): 2.74

New Mexico: Four special education weights are included in the formula:

- Students requiring a minimal amount of special education: 0.7
- Students requiring a moderate amount of special education: 0.7
- Students requiring an extensive amount of special education: 1.0
- Student requiring a maximum amount of special education: 2.0

Texas: Twelve special education weights are included in the formula:

- Homebound: 5.0
- Hospital class: 3.0
- Speech therapy: 5.0
- Resource room: 3.0
- Self-contained, mild and moderate, regular campus: 3.0
- Self-contained, severe, regular campus: 3.0
- Off home campus: 2.7
- Nonpublic day school: 1.7
- Vocational adjustment class: 2.3
- State schools: 2.8
- Residential care and treatment: 4.0
- Mainstream: 1.1

Sources for state data: M. Griffith and E. Parker, *School Funding Across the States,* Education Commission of the States, Denver, CO. Prepared for Augenblick, Palaich and Associates for the State of Nevada, April 24, 2018.; T. C. A. § 49-3-307; OH R.C. § 3317.016; M.R.S.A. § 15675; A.C.A. § 6-20-2305; 70 Okl.St.Ann. § 18-201.1; Code of Virginia § 22.1-199.1; NE Ch 79 § 1007.06; Code of Virginia § 22.1-199.1; TEC § 42.151; NM 22-8-1; Iowa Code § 256B.9(1); AZ 15-752; http://www.cde.state.co.us/cdefinance/fy2017-18brochure; http://www.state.nj.us/education/stateaid/1617/EAR2017.pdf; https://ed.sc.gov/finance/financial-services/manual-handbooks-and-guidelines/funding-manuals/fy-2017-2018-funding-manual/