Colorado Input-Based Financial Adequacy Study Report

Prepared for

Colorado Department of Education

By

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With Partners

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APA staff included: Justin Silverstein, Michaela Tonking, Amanda Brown, Jennifer Piscatelli, Noah Fortson, and Anna Adams.

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Executive Summary

Introduction

Augenblick, Palaich and Associates (APA), in partnership with Picus Odden & Associates (POA) and Afton Partners (Afton) were selected by the Colorado Department of Education (CDE) to undertake an input-based adequacy study for the state. New Solutions K-12 and Tracie Rainey, a Colorado school finance expert, were also part of the study team. The team members bring together decades of experience conducting input-based adequacy studies across the country.

Adequacy studies are designed to estimate the resources needed for students, teachers, schools, and districts to meet state standards and requirements. These resources are used to calculate an adequate funding level and parameters for a state school finance formula. Identified parameters generally include, at least:

- **Base cost:** the amount of funding needed for a student with no special needs in a district with no special circumstances;
- **Student characteristic adjustments:** the additional resources needed for at-risk/poverty, multilingual, and special education students to meet state standards; and
- **District characteristic adjustments:** the additional resources needed to serve students in districts with characteristics that increase costs, such as small size, differences in costs of doing business, and/or remoteness.

Four adequacy approaches have been developed over the past three decades, the successful schools/districts (SSD), statistical (SA), professional judgment (PJ), and evidence-based (EB) approaches. The four approaches can generally be grouped into two types: input and output approaches. **Input-based approaches,** including the PJ and EB approaches, identify a specific resource basis by identifying the personnel and other costs (i.e. inputs) needed in prototypical schools and district(s) and then cost out those identified resources to create the adequacy estimates. **Output-based approaches**, including the SSD and SA approaches, instead of being resource driven, utilize data analysis of current education spending, outcomes, and other factors to estimate adequate funding.

Many recent statewide adequacy studies have utilized multiple approaches, including at least one input and one output approach. The approaches are used in conjunction with one another, and the results are either combined to identify a single recommendation or a range of choices for a state's policymakers. Instead of having one study utilizing both types of approaches, the Colorado Legislature identified the need for two separate adequacy studies, one utilizing input-based and one utilizing output-based approaches. This report details the results of the input-based study, led by APA. A separate report on the output-based study will also be produced by the American Institute of Research (AIR).

To identify the parameters needed, the study team implemented the PJ and EB adequacy studies and a study of Colorado's special education system to identify a baseline set of adequacy figures for the state. These figures were then adjusted based on additional surrounding data collected through (1) conducting a landscape analysis, (2) examining the impacts of wealth and income on resources, (3) studying differences in the cost of living and business across the state, and (4) administering a statewide community survey. The impacts of COVID and the budget stabilization factor (BSF) have been highlighted throughout each of the study components.

Chapter One: Examination of the Current Structure of Colorado Schools Funding Formula

The goal of a school finance formula is to ensure all students have equal access to the resources needed to meet the state's student performance standards. Regardless of the level of funding, the school finance formula used by the state will determine how fairly those funds are distributed to school districts. Table 1 outlines the strengths and weaknesses of both the Public School Finance Act of 1994 and the new formula to be implemented by HB24-1448. Further details are included in Appendix One of this report.

Table 1: Summary of Strengths and Weaknesses of Each Formula Component

Current Funding Formula School Finance Act of 1994		HB 24-1448 Formula (Effective FY26)	
Strengths	**Weaknesses**	**Strengths**	**Weaknesses**
Student Count			
Once a year count with a "soft landing" for districts with declining enrollments		Once a year count with a "soft landing" for districts with declining enrollments	
Statewide Base Per Student Funding			
	No clear rationale for determining the base funding level		No clear rationale for determining the base funding level
	BSF	Eliminated BSF	
Cost of Living Adjustment			
	The multiplicative method advantages districts with a high cost index	The additive method adjusts for costs at the end of the computations	
	Computation of the index is overly complex		Computation of the index could be more complex. A review of alternatives is recommended.
	The percentage of district expenditures for personnel is not based on actual district expenses but rather a formula based on enrollment		The percentage of district expenditures for personnel is not based on actual district expenses but rather a formula based on enrollment

Current Funding Formula School Finance Act of 1994		HB 24-1448 Formula (Effective FY26)	
Size Adjustment, Rural Factor, and Locale Factor			
Adjusts for additional costs of small schools through a comprehensive formula—additional funding for small rural districts	Provides an adjustment for all districts regardless of size. Even though the size of the adjustment declines, large districts may garner a large share of the funds intended for this purpose	Adjusts for additional costs of small schools through a comprehensive formula that includes both locale and district size. Most large districts will no longer receive funds for the size adjustment	The final impact of the combination of a locale and size factor leaves it unclear as to its impact
At-Risk Students			
The new formula to count at-risk students is more comprehensive. The concentration factor is likely a strength	The weight of 12% is relatively low compared to other states and lower than the current adequacy studies are likely to recommend	New weight of 25% combined with the new at-risk count will better serve at-risk students	While the 25% weight, while similar to what most states currently use, may remain lower than what is needed to serve at-risk students
English Language Learner (ELL) Students			
Funding is available for ELL students	Weight of 8% is low compared to programs in other states	New weight of 25% provides more resources for ELL students	Adequacy studies may recommend higher weights
Online and Extended High School Students			
Provides funding at an amount approximately the same as the base funding level		Provides funding at an amount approximately the same as the base funding level	
Budget Stabilization Factor (BSF)			
	Reduces funding across the board for all school districts providing fewer resources than the funding model estimates are needed	No longer part of the formula	
Local and State Share of Funding			
Shared state and local funding responsibility. Limited recapture through categorical buyout requirements	Many district property tax mill rates are below the goal of 27 mills due to the time required to increase those mill rates. The budget stabilization factor's impact on total revenues	Elimination of the budget stabilization factor	Districts are able to further increase override levies if they experience reductions in their total funding level due to the cost of living adjustment

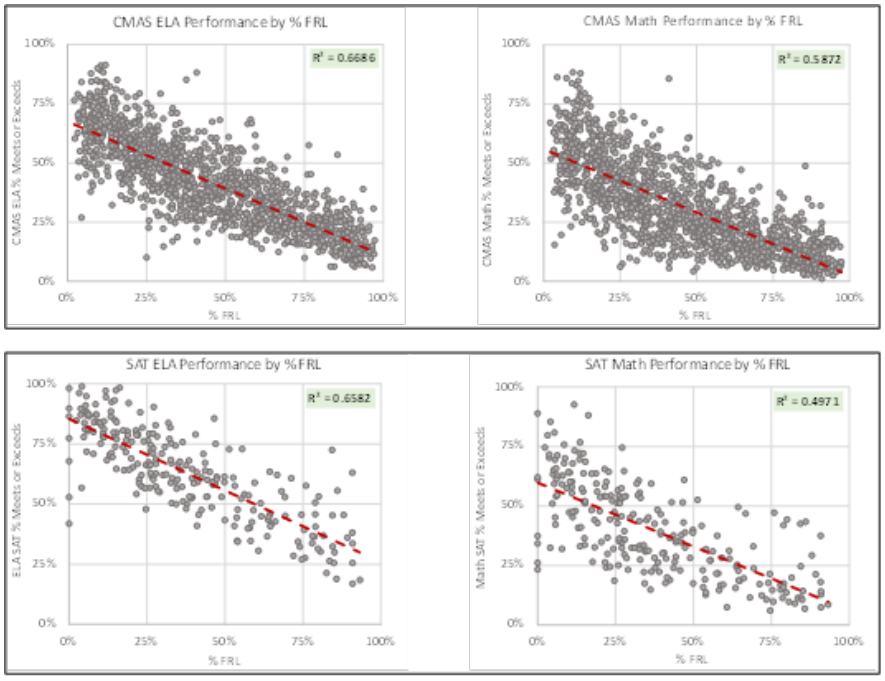
Beyond the funding formula, districts receive funding through categorical funding and additional local mill levy overrides. Federal funding and other grant programs complete the funding available to districts. Colorado's categorical programs provide additional revenue for special education, ELL, gifted and talented, small attendance centers, transportation, vocational education, and several others. A strong categorical funding program is a strength of any school finance system.

Chapter Two: Landscape Analysis of Current Resourcing in Colorado Schools and Districts

A landscape analysis explored differences in how resources were utilized in different types of schools and districts and what, if any, relationships exist between school level demographics and needs, spending patterns, and academic performance. Analyses focused on the dollars that school districts generate and how these dollars are used to fund investments in education.

Through this analysis, the study team found that schools with higher concentrations of at-risk students face larger achievement gaps and higher spending needs as seen in Table 2.

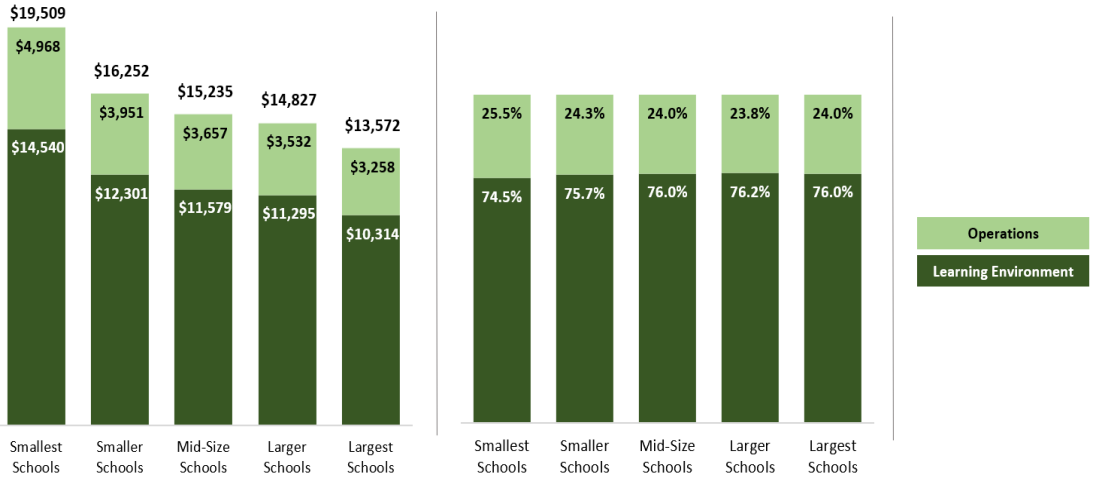
Table 2: CMAS and SAT Performance by At-Risk Concentration



However, these schools, particularly in city districts, are not receiving adequate additional funding to address the higher needs of their students. Due to increased efficiencies with economies of scale, larger schools spend less per student on average.

While schools of all sizes report spending similar proportions of their budget on Learning Environment and Operations, the smallest schools in the state spend slightly less on Learning Environment and more on Operations than larger schools (Table 3).

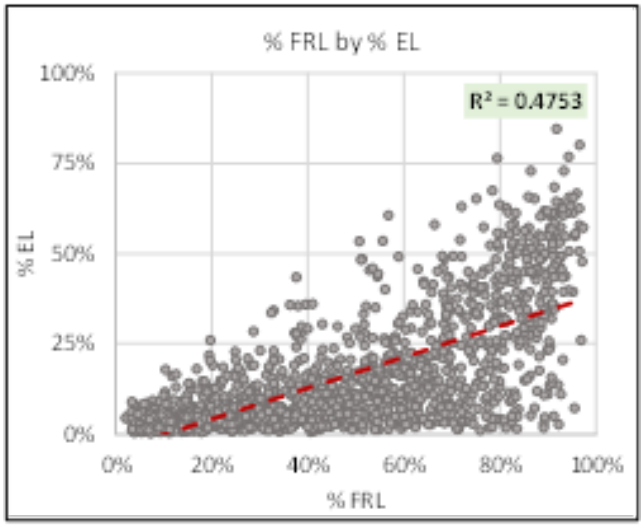
Table 3: Average Per Student Spending Categories by Size Quintile (values and percentages)



Additionally, smaller schools tend to pay teachers lower average salaries and have lower student-to-teacher ratios. On average, smaller districts, many of which are rural, generate more funds per student, though they do not serve the highest concentrations of high-needs students.

Meanwhile, the proportion of ELL and at-risk students in schools is correlated; schools with high ELL concentrations tend to also have higher at-risk concentrations (Table 4), which increases the level of support needed in schools.

Table 4: ELL Concentration by At-Risk Concentration



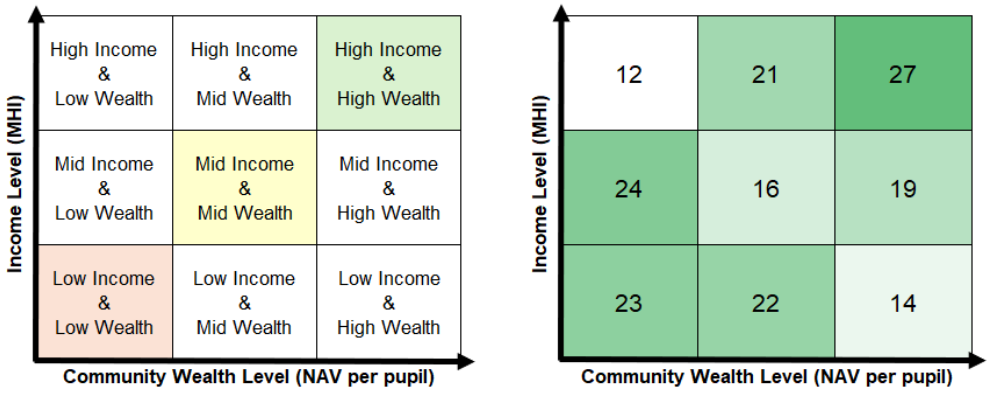
Chapter Three: Impacts on Income and Wealth

Districts in Colorado generate federal, state, and local funding, with local contributions primarily derived from property taxes based on Net Assessed Valuation (NAV). The local mill levy override system further increases school funding variability, which allows districts to increase local funding for schools. The study team explored the impact of varying levels of community wealth and income on the funding available to school districts and,

consequently, the education opportunities available to students. It examines the juxtaposition of districts with high property tax bases that may not necessarily represent high-income populations against those with lower property tax bases that might not capture significant low-income populations.

The analysis shows that higher wealth districts benefit from greater local funding by leveraging higher net assessed valuations and mill levy overrides, while lower wealth districts, regardless of the socioeconomic status of their students, often struggle to secure similar funding levels as seen in Table 5.

Table 5: District Type Categories (left) and Count of Districts by Type (right)

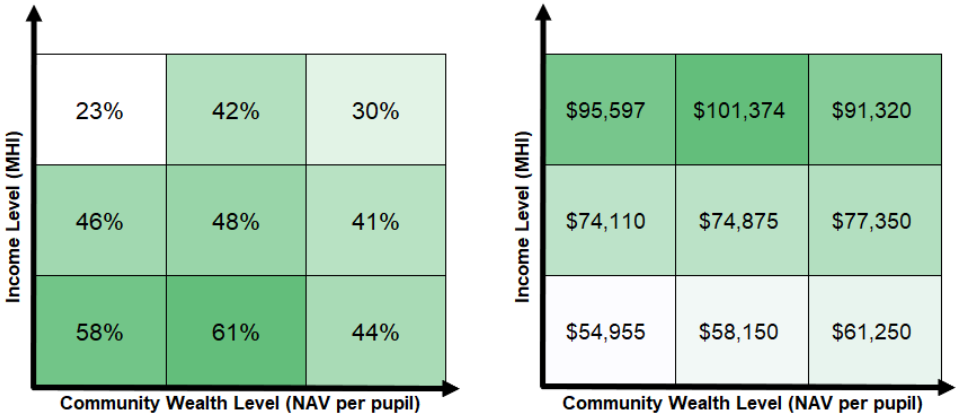


This not only highlights the limitations of relying heavily on local property taxes for funding education, but also underscores the critical role of state funding formulas in attempting to allocate funds where needed most.

Given that income levels strongly predict student performance, and with state funding aimed at addressing disparities in lower-income districts, the local property tax base, particularly a district's ability to generate local revenue through use of overrides, becomes a crucial determinant of whether these districts can secure sufficient levels of total funding. The state, through the Mill Levy Override (MLO) state match program, is attempting to remedy these inequities in local funding capacity across districts with varying degrees of wealth. However, this funding stream, totaling $10M in FY23 and $32.5M in FY24, currently constitutes a small portion of total education funding.

Ensuring that a new formula lessens these disparities is imperative. The lower-income & lower-wealth districts that generate lower levels of MLO revenue serve larger concentrations of higher-needs students (Table 6), making it more difficult to adequately serve their higher-needs populations.

Table 6: Median % At-risk (left) and Median District Household Income (MHI) (right) – Small Districts



Evidence suggests that additional funding is used on critical inputs, such as higher teacher pay and additional teachers per student, inputs that ultimately can lead to, and have already led to, the closing of achievement gaps.

Implementing an adequacy-based formula would ensure that all districts start with the resources needed for all students to meet state standards. Districts would rely less on MLOs to provide the resources needed to adequately serve students. Colorado could also consider reducing the allowed number of MLOs if adequacy was reached. Any MLOs should be wealth-equalized by the state.

Chapter Four: Survey Analysis

The study team implemented a community survey given to nearly 1,500 Colorado community members from 72% of districts. Nearly half of all respondents, 46%, were associated with Rural districts, while 22% were associated with Suburban districts, 18% with Town districts, and nine percent with City districts. Additionally, survey respondents represented a diverse range of voices across the state. Most respondents identified as school or district staff, with 35% identifying as school instructional/certified staff, 14% as school or district leaders, and ten percent as school support staff. The remaining 41% of respondents identified as family, students, and community members. The survey aimed to better understand what the Colorado public values at their schools and the resources they would prioritize if additional funding were available.

The survey asked respondents to indicate what they valued most in their school(s) by rank ordering options from 1-15, with 1 being the **most valued** option and 15 being the **least valued** option. Table 7 shows across all four groups, teacher quality was ranked the highest priority, with school culture, academic performance, school leadership, and support for mental and emotional health following. Meanwhile, before/after school opportunities and extracurricular activities were consistently ranked in the bottom four for all four groups.

Table 7: School Resourcing Ranks by Respondent Type

Rank	Families, Students and Community Members	School Instructional/Certified Staff	School Support Staff	School or District Leader
1	Teacher Quality	Teacher Quality	Teacher Quality	Teacher Quality
2	School Academic Performance	School Culture	School Academic Performance	School Culture
3	School Culture	School Leadership	Support for Low Income Students	School Academic Performance
4	School Leadership	Support for Emotional and Mental Health	School Culture	School Leadership
5	Course Offerings	School Academic Performance	Support for Emotional and Mental Health	Support for Emotional and Mental Health
6	Support for Emotional and Mental Health	Support for Special Education Students	Support for Special Education Students	Support for Special Education Students
7	Family Engagement	Low-Income Students	School Leadership	Course Offerings
8	Facilities	Support for English Language Learners	Facilities	Support for Low-Income Students
9	Support for Special Education Students	Family Engagement	Support for English Language Learners	Family Engagement
10	Technology	Course Offerings	Family Engagement	Support for English Language Learners
11	Low-Income Students	Facilities	Technology	Facilities
12	Extracurricular Activities	Technology	Transportation	Technology
13	Before/After School Opportunities	Extracurricular Activities	Before/After School Opportunities	Extracurricular Activities
14	Transportation	Before/After School Opportunities	Extracurricular Activities	Transportation
15	Support for English Language Learners	Transportation	Course Offerings	Before/After School Opportunities

The survey then focused on understanding how and where respondents would prioritize additional funding. Responses for this question closely aligned with what respondents most valued in their school. The study team used the survey results to consider the new recommended formula.

Chapter Five: Professional Judgment Approach Study

The PJ approach relies on the expertise of Colorado educators to identify the resources needed to ensure that all districts, schools, and students can meet state standards and requirements, in six districts of different sizes. Resources include school-level personnel, non-personnel costs, additional supports and services, technology, and district-level resources. These resources were first identified for students with no additional needs (which allows for calculating a base cost) and then separately for students in specific groups with additional needs, presented as weights. The study identified the additional resource needs for at-risk students at 25%, 55%, and 75% concentration levels and English language learners (ELL) by WIDA 1&2, 3&4, and 5&6. Special education is examined in a separate study found in Chapter Seven.

The resources recommended for each school and district included resources such as educators (including special teachers, ELL teachers, counselors, social workers, and paraprofessionals), administrators, instructional coaches and instructional supplies and materials. The study team used statewide average salaries to cost out all of the schools and districts built in the PJ study. To further build the adequate compensation level, the study team included a 22.85 percent benefit rate, which includes the costs of PERA and Medicaid. Additionally, an average health/dental/vision cost of $13,453 was estimated, based on the assumption that all staff in public schools should have access to similar benefits as state employees.

Combining the school and district-level costs by district size allowed the study team to calculate a single school-level base cost figure for each representative district. Weights represent the resources needed above the base for student and district characteristics. For example, if the base cost for a student is $10,000 and the additional needs related to at-risk are $3,000, then the at-risk weight is 0.30. The district serving this at-risk student would, therefore, receive a total of $13,000 to provide an adequate education for that student.

Table 8: Professional Judgment Total Base Cost and Additional Weights

District Size	Very Small	Small	Moderate Small	Moderate Large	Large
Base	$30,944	$18,892	$14,786	$12,607	$11,280
Weights					
At-Risk					
25% Concentration	0.14	0.23	0.28	0.29	0.29
55% Concentration	0.18	0.26	0.32	0.35	0.37
75% Concentration	0.26	0.26	0.40	0.42	0.44
ELL					
WIDA 1&2	0.42	0.44	0.45	0.46	0.49
WIDA 3&4	0.27	0.25	0.32	0.32	0.33
WIDA 5&6	0.08	0.15	0.17	0.16	0.15

As Table 8 shows, the per-student base cost rises from a low of $11,280 in the largest district to $30,944 in the very small district. At-risk weights are the lowest at the 25 percent concentration, ranging from 0.14 to 0.29. The 50 percent concentration weights range from 0.18 to 0.37, and the 75% concentration weights range from 0.26

to 0.44. All the at-risk weights are lowest in the very small district and rise in the larger districts. The ELL WIDA 1&2 weight ranges from 0.42 to 0.49, WIDA 3&4 weight ranges from 0.25 to 0.33, and WIDA 5&6 weight ranges from 0.08 to 0.17.

Chapter Six: Evidence-Based Approach Study

The EB Model relies on a school improvement model that allocates resources for educational strategies that current educational research finds are linked to large increases in student learning.

The EB approach to school finance adequacy develops a set of recommendations that can be used to determine a base per student figure and related student weights for students from at-risk backgrounds, for ELL students, and for students with mild and moderate disabilities. This base per student figure would allow each "normal" size school to offer students an equal opportunity to achieve the state's performance standards.

More specifically, based upon a wide variety of research on individual programs, including more recent randomized controlled trial (RCT) research, the EB Model includes recommendations for the following elements:

- **Staffing for core programs**, which include full-day pre-school and kindergarten, core teachers, elective/specialist teachers, substitute teachers, instructional facilitators/coaches, core tutors, core guidance counselors and nurses, supervisory aides, librarians, principals/assistant principals, and school secretarial staff;
- **Dollar per student resources** for gifted and talented students, professional development, instructional materials and supplies, benchmark and short cycle assessments, computers, and other technology, and extra duty/student activities;
- **Central office functions** include maintenance and operations, central office personnel, including school computer technicians, and non-personnel resources;
- **Resources for struggling students** including at-risk tutors, at-risk student support, extended day personnel, summer school personnel, ELL personnel, special education, career and technical education, and alternative schools; and
- **Personnel compensation resources**, including salary levels, health insurance, benefits for workers' compensation, unemployment insurance, retirement, and Medicare.

The model relies on two major types of research:

1. Reviews of research evidence on the effects of student achievement on individual educational strategies provided by the EB Model. This evidence has been strengthened in recent years by the growing number of RCTs conducted on the various elements included in the EB Model.

2. Case reports of schools and districts that have dramatically improved student performance over a four to six year period –sometimes actually "doubling" student performance on state tests.

To produce the EB Model's Base per student figure, the resources from the model (as seen in Chapter 6 of the report) are applied to a prototypical school district of 3,900 students organized into four prototypical 450-student elementary schools, two prototypical 450-middle schools and two prototypical 600-student high schools.

Personnel costs are critical to make these estimates. The model used the same staff, salary and benefits data as the PJ approach. With these compensation and benefit figures, the adequate base figure is estimated to be $11,387. Adjustments for students with special needs are as follows:

- Assuming 50% of eligible ELL students participate in after school and summer school programs, the ELL weight is 0.38 ($4,366) for ELL students.
  - If 100% of eligible ELL students participate in after school and summer school programs, the ELL extra weight is 0.51, which is $5,818.
- Assuming 50% of eligible at-risk students participate in after school and summer school programs, the at-risk weight is 0.30 ($3,435) for ELL students.
  - If 100% of eligible ELL students participate in after school and summer school programs, the at-risk weight is 0.43, which is $5,818.
- For students with mild and moderate students with disabilities, the combined weight is estimated to be 0.60, which is $6,780 per mild and moderate student with disabilities. Further detail is provided in Chapter Seven, the special education study that disaggregates this figure into separate weights for students with mild and moderate disabilities.
  - The EB model recommends that the state provide 100 percent of the costs of providing services for students with severe and profound disabilities, estimated to be two percent of the total student population. The cost of this recommendation is provided in the Chapter Seven special education study.

Chapter Seven: Colorado Funding for Special Education

The study team engaged special education leaders from across the state in conversations to understand the costs of serving special education students in Colorado. In addition to the conversations, a data review examined the current funding system and how it aligned with overall special education spending and best practices in funding from around the country.

When structuring the state funding formula for special education, there are several foundational principles to consider to ensure equity, adequacy, and transparency in the end result. A robust special education funding formula does five things:

1. Acknowledges that special education and general education dollars do not work in silos.
2. Covers the total incremental cost of providing special education services statewide.
3. Provides transparency, consistency, and the ability to forecast.
4. Allows for real-time adjustments.
5. Reflects the critical importance of high-cost reimbursement for schools.

When identifying the weights for a special education funding system, it can be advantageous and cost-neutral statewide to have separate weights for students with mild disabilities versus those with moderate disabilities. The study team first looked at the combined incremental costs of mild and moderate special education students and identified a cost of $6,780. This figure would be disaggregated:

- Mild disability incremental cost of $4,996; and
- Moderate disability incremental cost of $12,490.

The funding model should provide these additional funds based on the number of students with either a mild disability or a moderate disability in the amounts of $4,996 and $12,490 respectively, up to statewide caps of 7.5% and 2.5% of total enrollment.

The special education study team's work aligns with the theory of action from the EB model, in which the state should fully reimburse the cost of serving students with severe special needs, including transportation. These students represent large per-student costs, and their numbers vary from district to district. Even a handful of new special education students can create significant financial hardship for small districts. It is more reasonable for the state to take this risk, as it is better positioned to manage the costs.

The EB model assumes two percent of all students meet the definition of students with severe needs, which aligns with national trends and the research of the special education study.[22] The EB model caps such reimbursement at two percent of enrollment and assumes that incremental spending on students with severe needs is roughly equal to spending for students with mild-to-moderate special needs. The special education work accepts these same assumptions.

The following table outlines the forecasted costs based on each model, as well as the current funding and statewide spending. The EB and special education recommended models use the same assumptions and methodology, and any differences are due to rounding. Both models assume a total about 880,000 students statewide.

Table 9: Comparison of Funding Formulas, Current Funding, and Statewide Spending (approximate)

SPED Category	# of Students (%)	EB Model Forecasted Costs	SPED Study Forecasted Costs	Current State Funding	Current Statewide Spending
Mild	66,000 (7.5%)	$596,640,000 (combined)	$329,736,000	$213,080,000 (combined)	$1,231,350,000 (total)
Moderate	22,000 (2.5%)		$274,780,000		
Severe	17,600 (2.0%)	N/A	$676,000,000	$4,000,000	
Total	**105,600 (12%)**	**$596,640,000**	**$1,280,516,000**	**$430,000,000**	**$1,231,350,000**

*Includes additional state funding for Child Find ($2,886,287), Educational Orphans ($163,486), and Preschool SPED from Finance Act ($32,776,269), as well as federal funding ($179,199,757)

Current funding for special education, including federal funding, is just about $430 million. This includes funding to cover students with severe needs. This leaves a substantial shortfall in funding compared to both models' projections and the current level of spending by districts statewide.

Chapter Eight: Cost of Living Adjustments

States utilize cost adjustments in school finance formulas to account for differences in districts' costs. These adjustments primarily adjust for personnel cost differences and help equalize purchasing power across different districts to support the ability to hire necessary staff. Three basic approaches are used as part of school funding formulas: hedonic wage indices (HWI), cost of living indices (COL), and comparable wage indices (CWI). When identifying an adjustment to include in a formula, states need to decide what cost differences need to be

addressed, the availability of data to identify these differences, the difficulty level to update any adjustment, and the way to apply the factors derived from a specific approach. Table 10 shows the type of COL adjustments used in states.

Table 10: Regionalization Approaches by State

Approach	States that Utilize
Cost-of-living	Colorado, Wyoming*
Hedonic Wage	Alaska, Maine, Texas, Wyoming*
Comparable Wage	Illinois, Florida, Maryland, Massachusetts, Missouri, New Jersey, Nevada, New York, and Virginia

**Note, Wyoming uses the "best of" two approaches.*

Determining any new approach first requires identifying what costs the approach should adjust for and then determining the approach that best meets those needs. Ideally, the chosen approach would have a low data burden, be transparent, and be predictable. These are important takeaways to keep in mind, particularly as the methodology likely directly impacts implementation, as is the case with the statistical complexity of an HWI.

However, it is also important to acknowledge that those takeaways are only beneficial as long as the costs the adjustment is accounting for are aligned with the intent of what the state is looking to solve. In Table 11, the study team summarizes the pros and cons of each approach as they relate to the findings of this study and, ultimately, the broader Colorado context.

Table 11: Pros and Cons of Various COL of Approaches

Approach	Pros	Cons
Status Quo Cost of Living	• Maintains consistency in approach and transparency in methodology. • Straightforward to implement and update. • Requires no changes to legislation.	• Economic theory considers this approach inferior to a CWI. • Does not account for the cost of goods and services districts face. This is particularly important in the Colorado context as smaller, more rural districts often face higher costs but generally have lower COL. • Does not account for amenities that impact wages and, ultimately, a district's ability to attract and retain staff. The study team's community engagement highlighted the importance of teachers across all respondent types and locale types. High-quality teachers were consistently ranked as one of the most valued resources in a school and areas where additional funding should be targeted. Additionally, increased compensation was one of the highest-ranked ESSER investments to sustain.
Hedonic Wage Index	• Able to estimate the impacts of specific variables that may be of interest to the state, such as the impact of student characteristics on teacher wages for a given district.	• Statistically complex to develop, maintain, and update. • Data requirements can be onerous and often require requests and coordination across multiple agencies. • Agencies data collection methodologies and calculations may change over time, impacting the ability to update. • Would require updating CO legislation.
CWIFT	• "Next generation" of CWI39 • Readily available and updated dataset, with consistent and transparent methodology. • Viewed as superior by economic theory in comparison to COL.	• Labor cost index based on local labor markers rather than school districts. • Does not account for the cost of goods and services districts face. This is particularly important in the Colorado context as smaller, more rural districts often face higher costs, but generally have lower COL. • Would require updating CO legislation.
State Specific CWI	• Measures costs that are beyond the control of school districts.	• Potential to be statistically complex to develop, maintain, and update depending on factor specification.

Approach	Pros	Cons
	• Can account for more state specificity than a traditional CWI, as with Florida's FPLI. • Viewed as superior by economic theory in comparison to COL.	• Data requirements could be onerous and require requests and coordination across multiple agencies. • Would require updating CO legislation.
Composite Factor	• Utilizes CWI and "goods" index. • Measures costs that are beyond the control of school district administrators. • Can account for both labor costs and cost of goods in a given district. • Viewed as superior by economic theory in comparison to COL.	• "Goods" indices may not be available for all Districts, as with the BEA regional price parities in Nevada. • Would require updating CO legislation.

It is important to note that any changes will likely have considerable impacts on districts, given the current adjustments have a large impact on funding. Therefore, the study team recommends that the state consider a change with the adjustment when also implementing a new funding formula overall. This would help ensure that any dollars freed up as a result of this change would be available for all students or through other targeted funding.

Chapter Nine: Final Recommendations

The study team provides a set of recommendations that first identifies a single set of input adequacy study parameters, including a base cost, adjustments for students with additional needs, and district characteristic adjustments. This was done by reconciling the results of the PJ and EB approaches with information from the other study areas. Then, the study team used these parameters to recommend how Colorado's school funding formula should distribute resources needed for districts. Finally, a comparison of current funding to the proposed formula is provided for each district in the state.

The study team created nine recommendations:

1. The state should provide a base cost of $12,346 for all students in Colorado.
2. At-risk students should receive a weight of .35 to meet their academic and support needs.
3. ELL students should be funded through a multi-tiered system of weights related to their WIDA status including a .52 weight for WIDA levels 1&2, .36 for WIDA levels 3&4, and a .18 weight for WIDA levels 5&6.
4. A multi-tiered funding system should be implemented for special education students with mild disabilities funded with a weight of .44 and for moderate students, a weight of 1.1. The state would fully reimburse costs for serving severe students.
5. Small districts should continue receiving additional funding utilizing a formula similar to the one currently in place.
6. Colorado should create a state-specific cost adjustment that utilizes CWI and a cost of goods adjustment. If implemented, the state should consider capping the impact of a cost adjustment on the overall total funding.

7. Districts should be funded based on the greater of a three-year average of current year student count or current year count.
8. The state should provide equalized matching funds for Mill Levy Overrides (MLOs) to eligible districts without a cap on available dollars. If a significant change in funding is provided to districts, the state should consider lowering the cap on the additional funds districts can raise through MLOs.
9. The study team recommends a phase in of the HB24-1448 formula over the next six to ten years. Initial steps would include redesigning the formula to incorporate the relative weights described in the adequacy recommendation formula.

Additionally, the study team would recommend continued funding of online and dual enrollment programs like ASCENT, acknowledging that the Post-secondary and Workforce Readiness Study presently underway should provide additional funding recommendations for many such programs when it is released. Therefore, there are no specific recommendations for those programs in this report.

Table 12 on the following page provides a comparison of these recommendations against the current formula and HB24-1448 formula. Figures are shown in 2025-26 dollars.

Table 12: Final Recommendations Compared to Current Formula and HB24-1448 Formula

	Input Adequacy Recommendations	Current Formula	HB24-1448 Formula
Base Per student	$12,346	$8,726.00	$8,726.00
Student Count	Single day count with either a three-year average or current year; some students count separately, such as those who study online.	Single day count with up to five years declining enrollment adjustment, some students counted separately, such as online.	Single Day Count with up to four-year declining enrollment adjustment, some students counted separately, such as online.
Cost of Living Adjustment	Design Colorado Specific Index, Determine Maximum Impact	Cost of Living with Personnel Cost Factor	Cost of Living without Personnel Cost factor
Size Adjustment	District Size adjustment with high of 2.3380 at 50 students and a minimum of 1.0 for districts above 3,900 students	District Size adjustment with high of 2.3958 at 50 students and a minimum 1.0297 for all districts	District Size adjustment with high of 2.3958 at 50 minimum and 1.0 for districts above 6,500 students
Rural Factor	Not Included	Provides funding for rural districts with less than 6,500 students	Not Included
Locale Factor	Not Included	Not Included	Provides funding based on NCES Locale codes ranging from .25 to .025 weight
At-Risk	.35 weight applied to the same base amount for all districts, no concentration factor	Minimum weight of .12 but with a concentration factor greater for larger districts. Applied to COL/Size adjusted per student amount	.25 weight with concentration factor only for smaller districts with at least 75% concentration. Applied to the same base amount for all districts
ELL	Multiple weights by WIDA level: .52 for levels 1&2, .36 for 3&4, and .16 for 5&6, applied to same base amount for all districts	.08 weight applied to COL/Size adjusted per student amount	.25 weight applied to the same base amount for all districts
Special Education	.44 weight for mild and 1.1 weight for moderate applied to same base amount for all districts. Severe fully reimbursed by the state	Not Included	.25 weight applied to same base amount for all districts
Online and Extended High School	Funded at specified per student amount	Funded at specified per student amount	Funded at specified per student amount

Funding Comparisons

This section provides a high-level comparison of the total funding requirements in the current law and HB24-1448 formula compared to the input-based adequacy proposed formula. For the modeling, CDE's 25-26 finance workbook was used.[1] The workbook contains both the HB24-1448 formula and the current formula, the study team then adjusted the workbook to model these input-based adequacy study recommendations. The model does not contain the student count detail for ELL or special education necessary to apply the recommended tiered weights, so ELL is modeled at a .40 weight and special education at a .60 weight. The input adequacy model does not include a specific adjustment or amount for rural or locale-based funding, as those costs are included in the size adjustment, and does not model a cost-of-living adjustment.

Table 9.2. Comparisons of Funding Formula Amounts in 2025-26 Dollars

	Input Adequacy Model	HB24-1448 Full Implementation	HB24-1448 Phase In	Current Formula*
Total Program	$13,491,482,407	$10,408,605,930	$10,024,346,997	$9,929,428,661
Base Funding	$9,953,588,473	$7,070,801,446	7,070,801,445.99	$7,108,677,439
At-Risk	$1,691,936,023	$866,824,884	N/A	$570,291,553
ELL	$323,534,805	$142,793,027	N/A	$ 57,342,842
Special Education	$681,246,609	$240,545,759	N/A	$0
Size	$396,363,032	$181,822,232	N/A	$355,500,930
Cost of Living	$0	$1,437,093,324	N/A	$1,473,107,804
Rural Schools	$0	$0	N/A	$36,654,926
Locale	$0	$155,720,248	N/A	$0

** Due to multiplicative nature of the formula, size and cost of living also impact other adjustments*

^ Due to phase in, information on specific adjustments is not possible

The total program for the input-based adequacy formula is about $3.5 billion higher than either the phased in HB24-1448 formula or the current formula. It is about $3.1 billion higher than the fully implemented HB24-1448 formula. Base funding is nearly $3 billion more than the current or HB24-1448 formulas. Funding for special needs students is higher in all cases: at-risk funding is $1.1 billion more than current funding and $800 million more than HB24-1448; ELL funding is about $260 million more than the current formula and $180 million more than HB24-1448; and special education is $440 million more than HB24-1448. The size adjustment is about $70 million more than size and locale funding combined in HB24-1448 and $40M more than the current formula's size adjustment.

Cost Adjustment

As mentioned in recommendation 6, the study team recommends Colorado design its own index utilizing either a comparable wage index or a comparable wage index in combination with a cost of goods and services adjustment. The study team believes that the cost adjustment is less important within a full adequacy formula, and that the state should focus increases of funding on implementing the components described above.

[1] https://www.cde.state.co.us/cdefinance/fiscalyear2025-26schoolfinancfunding

The study team did model costs of the CWIFT factors, rebased to the statewide average, and the HB24-1448 cost of living adjustment against the new base figure of $12,346 applying the factors only to the base amount. Utilizing the CWFIT, additional statewide funding would $921 million. The HB24-1448 adjustments would add $2.105 billion. The CWIFT would add 6.8% more funding and the HB24-1448 adjustment 15.6%. If the state does create a new index, the study team would suggest identifying a limit on the impact of the formula.

Severe Special Education Funding

In addition to formula funding, categorical funding is currently available to districts. The study team does not make a recommendation on most of the categorical funding streams but does believe that the special education and ELL categorical funds could be repurposed. Current categorical funding for special education is done a tiered basis; with the inclusion of mild and moderate funding in the formula. The study team recommends that all current special education dollars be made available for severe special education funding. Similarly, the current ELL funding, $30.5 million, could be reallocated for severe special education, since it is not available to fund the formula, as total categorical funding is constitutionally protected. Reallocating these existing categorical dollars would provide about $370 million for severe special education funding. The study team estimated total special education funding from state and local dollars would be about $1.02 billion, of that $680 million would be in formula funding for special education as shown in the previous table, leaving the remaining $340 million to be funded outside of the formula to fully cover the costs of providing special education services to students with severe needs. Reallocating the existing categorical funds more than covers the additional costs for severe special education funding.

District by district comparisons of total program funding can be found in Appendix Nine. It is important to note that the study did not examine transportation or facilities costs. To have a fully funded system, these two areas would still need to be funded separately.

Introduction

Augenblick, Palaich and Associates (APA), in partnership with Picus Odden & Associates (POA) and Afton Partners (Afton) were selected by the Colorado Department of Education (CDE) to undertake an input-based adequacy study for the state. New Solutions K-12 and Tracie Rainey, a Colorado school finance expert, were also part of the study team. The team members bring together decades of experience conducting input-based adequacy studies across the country.

Adequacy studies are designed to estimate the resources needed for students, teachers, schools, and districts to meet state standards and requirements. These resources are used to calculate an adequate funding level and parameters for a state school finance formula. Identified parameters generally include, at least:

- **Base cost:** the amount of funding needed for a student with no special needs in a district with no special circumstances;
- **Student characteristic adjustments:** the additional resources needed for at-risk/poverty, multilingual, and special education students to meet state standards; and
- **District characteristic adjustments:** the additional resources needed to serve students in districts with characteristics that increase costs, such as small size, differences in costs of doing business, and/or remoteness.

Four adequacy approaches have been developed over the past three decades, the successful schools/districts (SSD), statistical (SA), professional judgment (PJ), and evidence-based (EB) approaches. The four approaches can generally be grouped into two types: input and output approaches. **Input-based approaches,** including the PJ and EB approaches, identify a specific resource basis by identifying the personnel and other costs (i.e. inputs) needed in prototypical schools and district(s) and then cost out those identified resources to create the adequacy estimates. **Output-based approaches**, including the SSD and SA approaches, instead of being resource driven, utilize data analysis of current education spending, outcomes, and other factors to estimate adequate funding.

Many recent statewide adequacy studies have utilized multiple approaches, including at least one input and one output approach. The approaches are used in conjunction with one another, and the results are either combined to identify a single recommendation or a range of choices for a state's policymakers. Instead of having one study utilizing both types of approaches, the Colorado Legislature identified the need for two separate adequacy studies, one utilizing input-based and one utilizing output-based approaches. This report details the results of the input-based study, led by APA. A separate report on the output-based study will also be produced by the American Institute of Research (AIR).

The study team has worked together on several adequacy studies and has drawn on these past experiences to design an input-based adequacy study that contributes to the state's understanding of the resources needed for Colorado students to meet the state's education requirements and goals. To identify the parameters needed, the study team implemented the PJ and EB adequacy studies and a study of Colorado's special education system to identify a baseline set of adequacy figures for the state. These figures were then adjusted based on additional surrounding data collected through (1) conducting a landscape analysis, (2) examining the impacts of wealth and income on resources, (3) studying differences in the cost of living and business across the state, and (4)

administering a statewide community survey. The impacts of COVID and the budget stabilization factor (BSF) have been highlighted throughout each of the study components.

The body of this report includes chapters summarizing each of the major components of the study, with full reports for each component provided as appendices. Each chapter includes details on how each component was implemented, the analysis results, and the key findings.

Chapter One examines the current structure of Colorado's school funding system, and the changes proposed in HB24-1448, which will be implemented for the 2025-26 school year. This chapter provides a summary of the state's current system, maps the changes proposed in HB24-1448, and examines how well either system meets best practices related to school finance formula creation.

Chapter Two provides a landscape analysis of the districts and schools in Colorado, highlighting differences in size, demographics, revenues, spending, and performance. It provides the reader with an overview of differences across the state and how these differences impact available resources and student outcomes.

Chapter Three examines the impacts of wealth and income, focusing on differences in resources depending on districts' property and income wealth. The chapter undertakes a detailed analysis of the impacts of mill levy overrides on the dollars available per student and on the salaries and staffing available to students.

Next, **Chapter Four** discusses the community survey results given to nearly 1,500 Colorado community members. The survey results provide details on the program and resource priorities for Colorado education stakeholders.

Chapter Five details the PJ approach, which relies on the expertise of Colorado educators to identify the resources needed in six different sized districts. The chapter summarizes the resources identified by panelists and the differences in resource needs across student characteristics, groups, and district sizes. It also describes the processes used to determine salaries based on the resources identified in the PJ and EB approach.

The next chapter, **Chapter Six**, describes the EB approach, which relies on the latest research shown to impact student performance in schools. It begins with a theory of action on how the EB model has been derived. The chapter details the resources identified for a prototypical district and how adjustments were made to fit the Colorado context.

The results of the special education study are presented next in **Chapter Seven**. The study engaged special education leaders from across the state in conversations. In addition, a data review examined the current funding system and how it aligned with overall special education spending and best practices in funding from around the country. Finally, the chapter presents recommendations for a special education formula and highlights best practices that could be implemented to better serve special education students.

The study team then examines how the state might adjust for the costs of doing business that districts face in **Chapter Eight**. This includes examining how other states adjust for these factors, the current approach in Colorado, and the impacts of alternative approaches on Colorado districts.

Finally, **Chapter Nine** combines the results of each adequacy study with analysis conducted in previous chapters. For each parameter, confirming details and adjusting details are identified, allowing for the creation of the final

set of adequacy parameters. Using these parameters, a recommendation is made for a new Colorado formula. Each recommendation in the chapter is mapped to current state policy and how the area is addressed in HB24-1448. Additionally, the district provides a model of the results of the study team's recommendations for current funding and funding in HB24-1448. The study did not examine the costs of transportation or facilities, both areas are important to consider when determining the full costs to districts.

Chapter One: Examination of the Current Structure of Colorado's School Funding Formula

In fiscal year 24 (FY24), Colorado's school finance formula identified approximately $9.2 billion for public PK-12 education.[2] The state provided $5 billion of this amount, and local school districts contributed the remaining $4.2 billion. These funds were distributed through a complex school funding formula that originated in the Public School Finance Act of 1994. Although policymakers in Colorado have often expressed concern over the age of this legislation, the Public School Finance Act of 1994 has been flexible. The State Legislature changes this act annually through a school finance bill that amends the original Act and describes how the state and local tax revenues should be distributed among the state's 178 school districts.[3] Over time, the formula's components have been modified by the legislature and, at times, impacted by state constitutional amendments. It has adapted to the Taxpayer Bill of Rights (TABOR) and voter overrides, and for 14 years included a Budget Stabilization Factor (BSF) that reduced each district's funding to help balance the state's budget.

In 2024, the Colorado Legislature made substantial modifications to the school funding formula through HB24-1448 which will be implemented over six years[4] starting in FY26. This report analyzes Colorado's current school funding formula for FY25, identifies its strengths and weaknesses, and compares that with an analysis of the formula scheduled for implementation in FY26.

Colorado's school funding formula estimates the total revenue for each school district. The current formula starts with a legislatively determined base funding amount per student and makes a series of adjustments to that amount to reach a district's total funding. The new formula, established through HB24-1448, also starts with a legislatively determined base funding level but changes how some adjustments are calculated and revises the order in which they are included in the calculations. Both changes impact the relative distribution of funds to districts and address some of the weaknesses of the current system. Table 1.1 summarizes the two approaches side-by-side.

The HB24-1448 formula will be implemented over a six-year period during which school districts will receive funding based on whichever formula (with some limitations) provides the greater total funding. The most notable changes, as displayed in Table 1.1 include:

- Changing how the cost of living (COL) adjustment is applied, including removing the personnel cost factor and capping the adjustment at .23;
- Removing multiplicative funding throughout the formula;
- Changes to student weights, including adding funding for special education;
- Changing the size formula, including not providing an adjustment for districts with enrollment above 6,500; and
- Adding a locale factor and eliminating the rural factor;

[2] Colorado Legislative Staff, 2024
[3] Colorado Legislative Staff, 2018
[4] Mention Governor's suggestion to go four years

Table 1.1: Comparison of Colorado's Current and Revised School Finance Formulas

	Current Funding Formula School Finance Act of 1994	HB 24-1448 Formula (Effective FY26)
Base Per student	Historical figure adjusted annually for inflation, not related to reaching adequacy	Historical figure adjusted annually for inflation, not related to reaching adequacy
Funded Student Count	Single Day Count with up to five-year declining enrollment adjustment, some students counted separately, such as online	Single Day Count with up to four-year declining enrollment adjustment, some students counted separately, such as online
Cost of Living Adjustment	Complex formula focused on the cost of a basket of goods, applied in multiplicative approach impacting all funding (includes Personnel Cost Factor)	Complex formulas focused on the cost of a basket of goods not applied multiplicatively (no longer includes Personnel Cost Factor, caps adjustment at .23)
Size Adjustment	Adjustment with largest impact for smallest districts, though all districts get some funding. Applied in multiplicative approach impacting all funding	Adjustment with largest impact for smallest districts; no longer funds all districts; no longer applied in multiplicatively
Rural Factor	Provides funding for rural districts with less than 6,500 students	Not Included
Locale Factor	Not Included	Provides funding based on NCES Locale codes ranging from .25 to .025 weight
At-Risk	Minimum weight of .12 with a greater concentration factor for larger districts. Applied to COL/Size adjusted per student amount	.25 weight with concentration factor only for smaller districts with at least 75% concentration. Applied to the same base amount for all districts
ELL	.08 weight applied to COL/Size adjusted per student amount	.25 weight applied to the same base amount for all districts
Special Education	Not Included	.25 weight
Online and Extended High School	Funded at specified per student amount	Funded at specified per student amount

[A]Source: Colorado Legislative Council Staff (2024)

[B]Source: Colorado School Finance Project (2024)

The goal of a school finance formula is to ensure all students have equal access to the resources needed to meet the state's student performance standards. The adequacy studies in this analysis will provide information on whether Colorado appropriates adequate funding for its schools. Regardless of the level of funding, the school finance formula used by the state will determine how fairly those funds are distributed to school districts. Table 1.2 outlines the strengths and weaknesses of both the Public School Finance Act of 1994 and the new formula to be implemented by HB24-1448. Further details are included in Appendix One of this report.

Table 1.2: Summary of Strengths and Weaknesses of Each Formula Component

Current Funding Formula School Finance Act of 1994		HB 24-1448 Formula (Effective FY26)	
Strengths	**Weaknesses**	**Strengths**	**Weaknesses**
Student Count			
Once a year count with a "soft landing" for districts with declining enrollments		Once a year count with a "soft landing" for districts with declining enrollments	
Statewide Base Per Student Funding			
	No clear rationale for determining the base funding level		No clear rationale for determining the base funding level
	BSF	Eliminated BSF	
Cost of Living Adjustment			
	The multiplicative method advantages districts with a high cost index	The additive method adjusts for costs at the end of the computations	
	Computation of the index is overly complex		Computation of the index could be more complex. A review of alternatives is recommended.
	The percentage of district expenditures for personnel is not based on actual district expenses but rather a formula based on enrollment		The percentage of district expenditures for personnel is not based on actual district expenses but rather a formula based on enrollment

Current Funding Formula School Finance Act of 1994		HB 24-1448 Formula (Effective FY26)	
Size Adjustment, Rural Factor, and Locale Factor			
Adjusts for additional costs of small schools through a comprehensive formula—additional funding for small rural districts	Provides an adjustment for all districts regardless of size. Even though the size of the adjustment declines, large districts may garner a large share of the funds intended for this purpose	Adjusts for additional costs of small schools through a comprehensive formula that includes both locale and district size. Most large districts will no longer receive funds for the size adjustment	The final impact of the combination of a locale and size factor leaves it unclear as to its impact
At-Risk Students			
The new formula to count at-risk students is more comprehensive. The concentration factor is likely a strength	The weight of 12% is relatively low compared to other states and lower than the current adequacy studies are likely to recommend	New weight of 25% combined with the new at-risk count will better serve at-risk students	While the 25% weight, while similar to what most states currently use, may remain lower than what is needed to serve at-risk students
English Language Learner (ELL) Students			
Funding is available for ELL students	Weight of 8% is low compared to programs in other states	New weight of 25% provides more resources for ELL students	Adequacy studies may recommend higher weights
Online and Extended High School Students			
Provides funding at an amount approximately the same as the base funding level		Provides funding at an amount approximately the same as the base funding level	
Budget Stabilization Factor (BSF)			
	Reduces funding across the board for all school districts providing fewer resources than the funding model estimates are needed	No longer part of the formula	
Local and State Share of Funding			
Shared state and local funding responsibility. Limited recapture through categorical buyout requirements	Many district property tax mill rates are below the goal of 27 mills due to the time required to increase those mill rates. The budget stabilization factor's impact on total revenues	Elimination of the budget stabilization factor	Districts are able to further increase override levies if they experience reductions in their total funding level due to the cost of living adjustment

Beyond the funding formula, districts receive funding through categorical funding and additional local mill levy overrides. Federal funding and other grant programs complete the funding available to districts.

Colorado's categorical programs provide additional revenue for students with various needs or disabilities. In FY 24, Colorado spent nearly half a billion dollars on categorical programs, over $340 million for special education. According to the state, this funding must grow by the inflation rate and cannot be reduced in economic downturns. Categorical programs can be used to ensure students with specific needs receive additional funding not available through the general funding formula. In addition to special education, programs include ELL, gifted and talented, small attendance centers, transportation vocational education, and several others. A strong categorical funding program is a strength of any school finance formula. The largest of these, special education, is the topic of a separate study that is part of this analysis, and appropriate funding levels for other programs may also be estimated from adequacy studies.

With voter approval, school districts can raise additional revenue through mill levy overrides. These overrides are limited to 25% (30% for small rural districts) of a district's total funding. These levies, and those used by school districts for debt, capital improvements, transportation, full-day kindergarten, special building maintenance, and technology are generally not equalized with state funding. The strength of this is that districts may, at their choice, spend more money on schools than is determined through the school funding formula. The weakness is that districts with high property wealth per student can raise more funds at lower tax rates than districts with low property wealth per student. A limited amount of matching for lower wealth districts with mill levy overrides in place has been implemented, which helps mitigate some of the negative impacts. The HB 24-1448 formula increases the override cap for districts that have reduced revenue with the new cost of living changes, which could create greater variances in local levy decisions and less overall school funding equity. Chapter Three looks at the impacts of the differences in the wealth and income of districts.

Chapter Two: Landscape Analysis of Current Resourcing in Colorado Schools and Districts

Introduction

The study team conducted a landscape analysis to examine the current resourcing in Colorado schools and districts. This analysis explored differences in how resources were utilized in different types of schools and districts and what, if any, relationships exist between school level demographics and needs, spending patterns, and academic performance. Analyses focused on the dollars that school districts generate and how these dollars are used to fund investments in education. The study team developed two databases, one at the district level for all districts and one at the school level for all public schools in the state, to compile data points across many variables and to facilitate the process of categorization of both districts and schools into key archetypes based on a variety of characteristics to allow for comparative analyses. The study team populated these databases with publicly available data and data received from CDE through a data request.

The study team used a combination of descriptive statistics, simple linear regression, and multivariate regression analyses to explore and identify any differences in how resources are utilized in different types of schools and districts. Additional information on the data collected and the methodology used can be found in Appendix Two.

Current State

Attributing student outcomes directly to funding, investments, or initiatives is challenging due to the complexity of causal relationships in education. Many factors affect student outcomes including school leadership, school climate and culture, community involvement, and non-academic influences. While local strategic investment decision-making is just one part of a broader ecosystem influencing the student experience and academic performance, this chapter aims to summarize the current landscape of PK-12 public school education in Colorado and explore the relationships between school funding, spending, student needs, demographics, and academic performance.

In FY23, Colorado's public schools served approximately 880K[5] students across 178 Local Education Agencies (LEAs) and 1,935 public school figures, which includes the Charter School Institute district, which consists of 43 schools that serve 22,003 students.[6] Of the schools within the 178 LEAs, approximately 14% are public charter schools, and three percent are online schools. While the state has experienced a 2.3% increase in overall PreK to grade twelve public school enrollment over the last decade, it has also observed a 3.1% decline from peak enrollment of 911K in FY18. The student demographic is comprised of 35% of students identifying as Hispanic or Latino, 51% as White, five percent as Black or African American, and smaller percentages of Asian, Native Hawaiian or Other Pacific Islander, and multi-racial backgrounds.

The Public School Finance Act of 1994 Total Program funding formula and separate categorical funding streams recognize the additional needs of specific student groups by allocating incremental funding to districts based on the number of students they serve with these needs. In Colorado, approximately 39% of students qualify for Free and Reduced Lunch, identifying them as economically disadvantaged (as proxy for at-risk), while English

[5] Student Membership for Colorado PreK through 12th grade public school membership, based upon the Student October Count.

[6] This Landscape Analysis is grounded in the 2022-2023 school year, or Fiscal Year 2023 (FY23) unless otherwise noted. FY23 is the most recent year for which CDE reported school-level financial expenditure data was available at the time of this report.

language learners (ELLs) and Students with Disabilities (SwD) each represent 12% of the student body. While these figures help demonstrate the needs of the total student population, this report will highlight wide variation in the concentration of student needs across the state's LEAs and individual schools.

School Level Resourcing

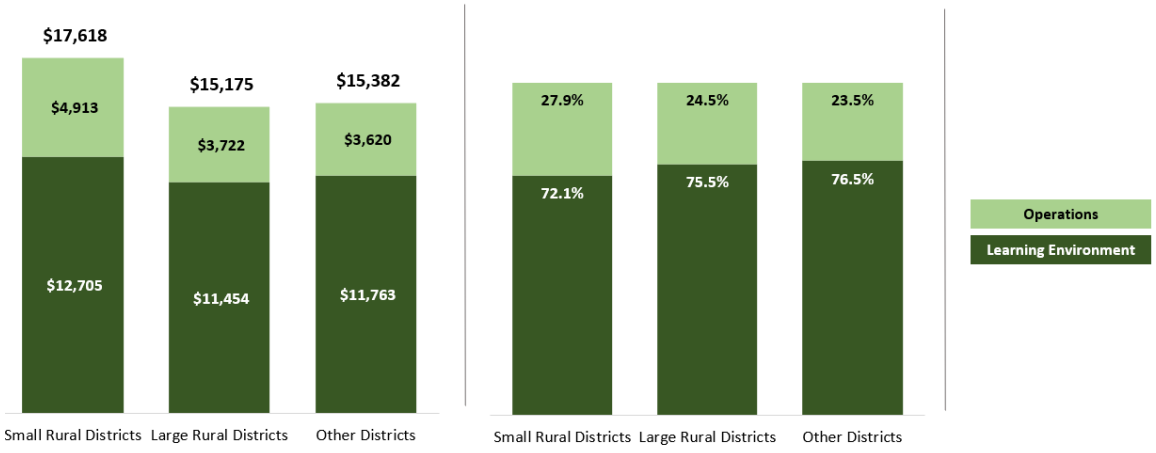
Colorado's school districts decide how local funds are allocated to their schools. Generally, smaller, higher-needs schools with larger concentrations of at-risk, ELLs, and SwD spend more per student. Analysis reveals differences across district and school sizes and strong correlations related to at-risk and ELL students.

District Size and Geography

There are 110 rural districts and 291 rural schools in Colorado, resulting in 2.6 schools per rural district. This is in stark contrast to city districts, which average 47.3 schools per district, and suburban districts, which average 33.3 schools per district.

For the 2024-25 school year, rural funding was included in the state's school finance formula. This funding had been in place previously but was not included in the school finance formula. The funding identifies "Small Rural Districts" as rural districts with fewer than 1,000 enrolled students; "Large Rural Districts" were defined as rural districts with more than 1,000 enrolled students but fewer than 6,500. Currently, small rural districts spend more per student than their larger counterparts and all other non-rural districts. As shown in Figure 2.1, these districts also spend smaller proportions of their budgets on Learning Environment when compared to other districts. These smaller districts receive rural funding and are also impacted by the state's district size formula which increases funding for smaller districts.

Figure 2.1: Average Per Student Spending Categories by District Classification



On average, the student body served by small rural districts reflects that of the state. This subset of districts enrolls at-risk and SwD students in similar proportions to statewide averages. At-risk enrollment in large rural districts differs from the state; on average, 35% of students in large rural districts are at-risk, notably lower than the state-wide average of 46%.

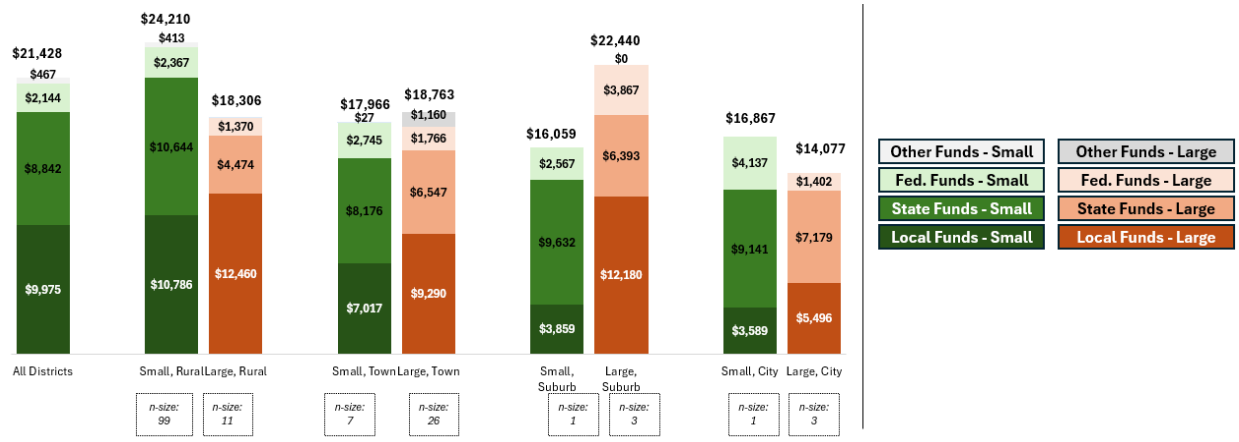
Larger districts often generate significantly higher total funding due to their higher student counts, but this does not always translate to higher per student funding. Compared to larger districts serving between 1,000 and 6,500 students, on average, smaller districts, defined as those serving fewer than 1,000 students, reported $5,086 more per student in total funding. While per student funding levels are higher for small districts in each

funding level aside from other (local, state, and federal), this total difference is driven primarily by the size adjustment in the state funding formula. However, of the 108 districts classified as small, 56 report per student funding levels below the maximum large district per student funding. Of these 56 small districts with lower funding, 84% are rural, 46% are low-income, and 46% are low wealth. While these districts serve the average proportion of SwD (state average of 13%) they serve a significantly smaller proportion of ELL students (7% versus the state average of 12%).

Figure 2.2: Average Reported Funding per Funded Student by Small and Large Districts

A geographic analysis of Colorado's school district funding further highlights the considerable variation in per student funding levels and the sources from which districts derive their funds. On average, regardless of size, city districts, which typically have higher concentrations of at-risk students, report lower local, state, and total per student funding despite higher levels of federal at-risk-related funding. The lower total per student funding suggests the state funding formula may not adequately account for at-risk populations in city districts. Figure 2.3 shows the average reported per student funding by state, local, and federal sources for all four NCES geography groupings.

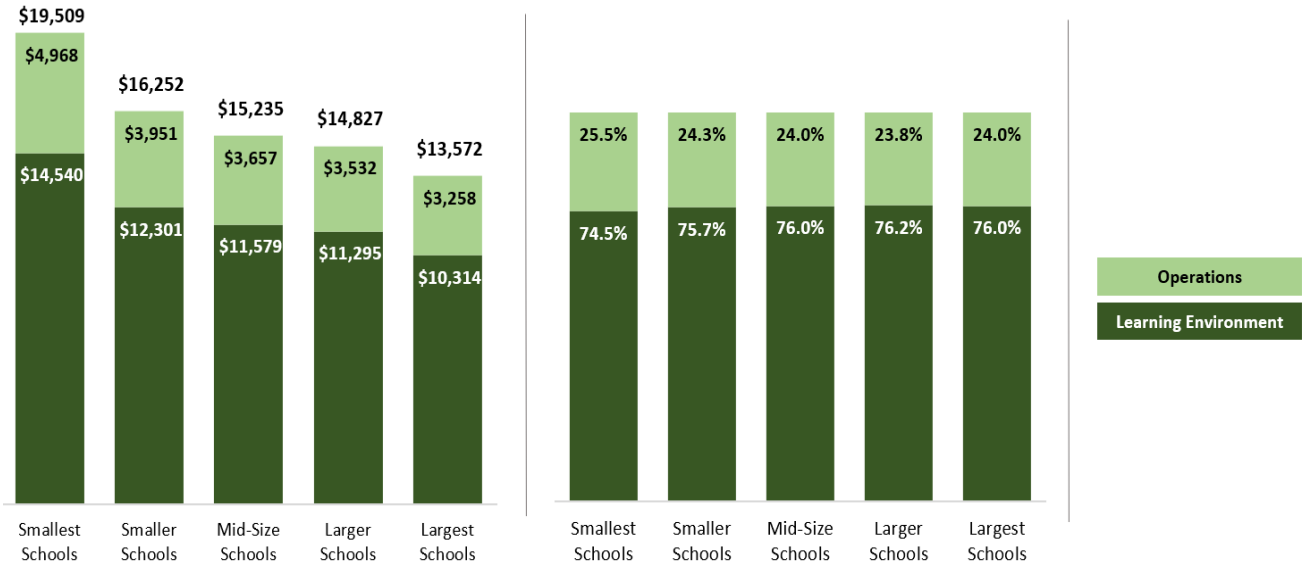
Figure 2.3: Average Reported per Student Funding by NCES Codes



School Size

School size in Colorado ranges widely, with an average and median school enrollment of 457 and 366 students, respectively.[7] As school size grows, so do efficiencies; consequently, larger schools report lower average total per student spending. Schools of all sizes report spending similar proportions of their budgets on Learning Environment and Operations, with schools in the 1st quintile (smallest) spending slightly less on Learning Environment and more on Operations than schools in other quintiles.

Figure 2.4. Average Per Student Spending Categories by Size Quintile (values and percentages)

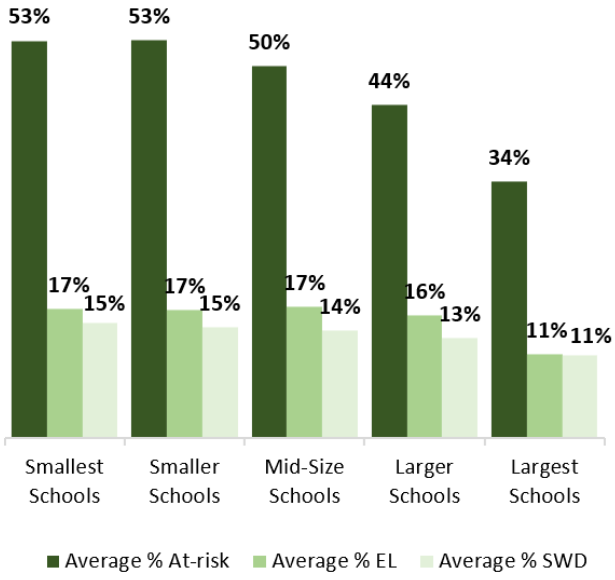


Although the smallest schools spend the most, on average, per student, they tend to pay their teachers lower salaries, with an average salary of roughly $62K in comparison to the average salary of the largest schools,

[7] Figures based on 2022-2023 reported total school enrollment.

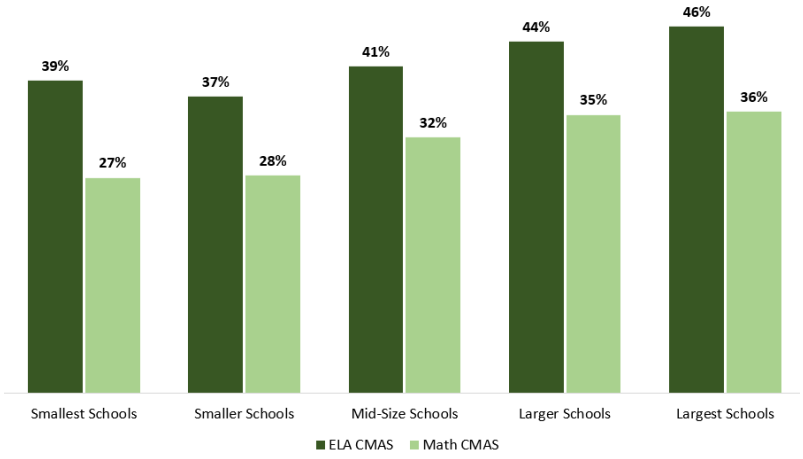
roughly $71K. They also employ more teachers per student compared to the largest schools, 16:1 (students to teacher) compared to 19:1. Almost half of the state's smallest schools are in rural districts. Further, 61% of rural schools fall within the smallest quintile size; town districts have the next highest concentration of small schools, with 27% of their schools in the smallest quintile. City and suburb districts have significantly fewer small schools, with most of their schools falling between the third and fifth size quintiles.

Figure 2.5. Student Demographics by Size Quintile



Generally, smaller schools enroll higher proportions of at-risk and SwD. On average, in the smallest quintile schools, the share of at-risk students is 53%, a notable increase from the 34% at-risk in the largest quintile schools. Additionally, the smallest quintile schools enroll SwD at higher rates, with average SwD enrollment at 18% in the smallest and 11% in the largest quintile schools. Performance analysis across size quintiles reveals that smaller schools face more significant achievement gaps. Though there is a wide range of scores across all quintiles, on average, the smallest quintile schools report lower scores across English Language Arts (ELA) and Math for both the CMAS and SAT. Notably, on almost all tests, at-risk and SwD performed similarly in the smallest and largest quintile schools, implying that school size does not impact at-risk or SwD achievement gaps in either direction.

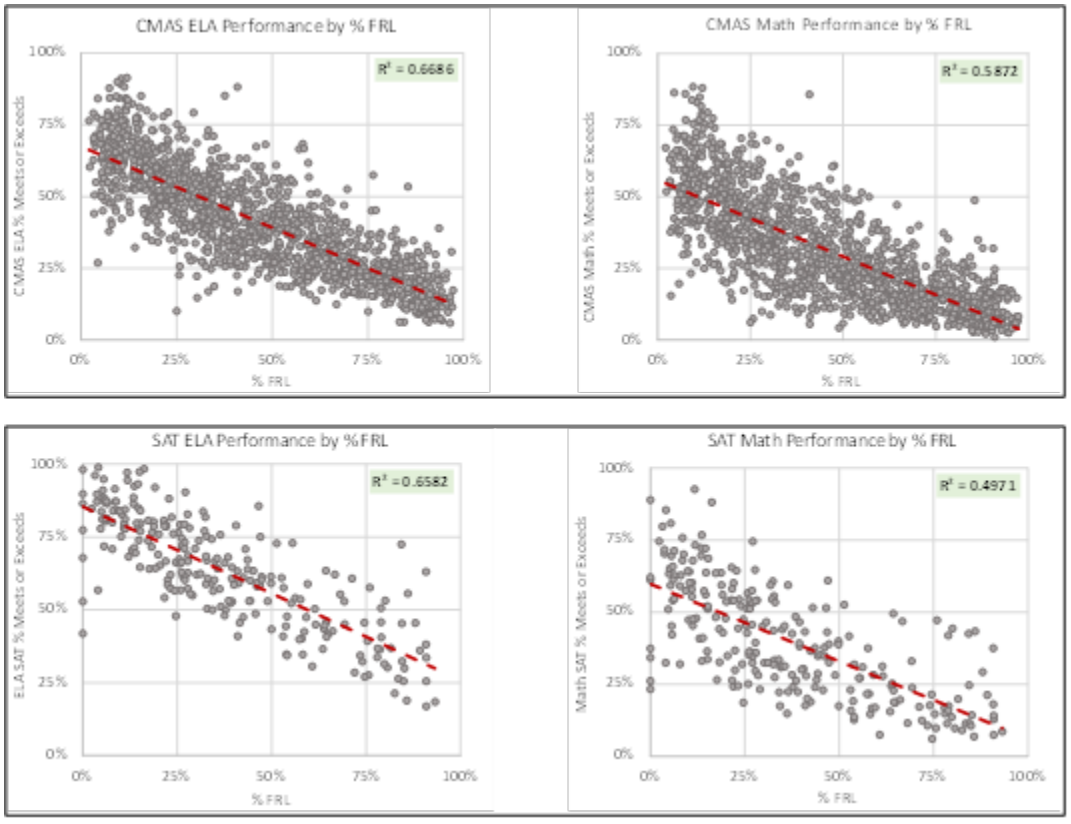
Figure 2.6: Student Performance by Size Quintile



Student Needs: At Risk

Across all factors, the study team found that a school's concentration of students identified as at-risk was the strongest predictor of school CMAS and SAT performance. On average, schools with higher concentrations of at-risk students experience more significant gaps in academic achievement compared to schools with lower at-risk populations. The direction of this relationship remains true regardless of district size but is more pronounced for large districts.

Figure 2.7: CMAS and SAT Performance by At-Risk Concentration



As shown below, there is minimal relationship for small districts, though the n-size is small, but there is a strong, negative relationship between at-risk and performance in large districts

Figure 2.8: CMAS Performance by At-Risk Concentration, Small vs. Large Districts

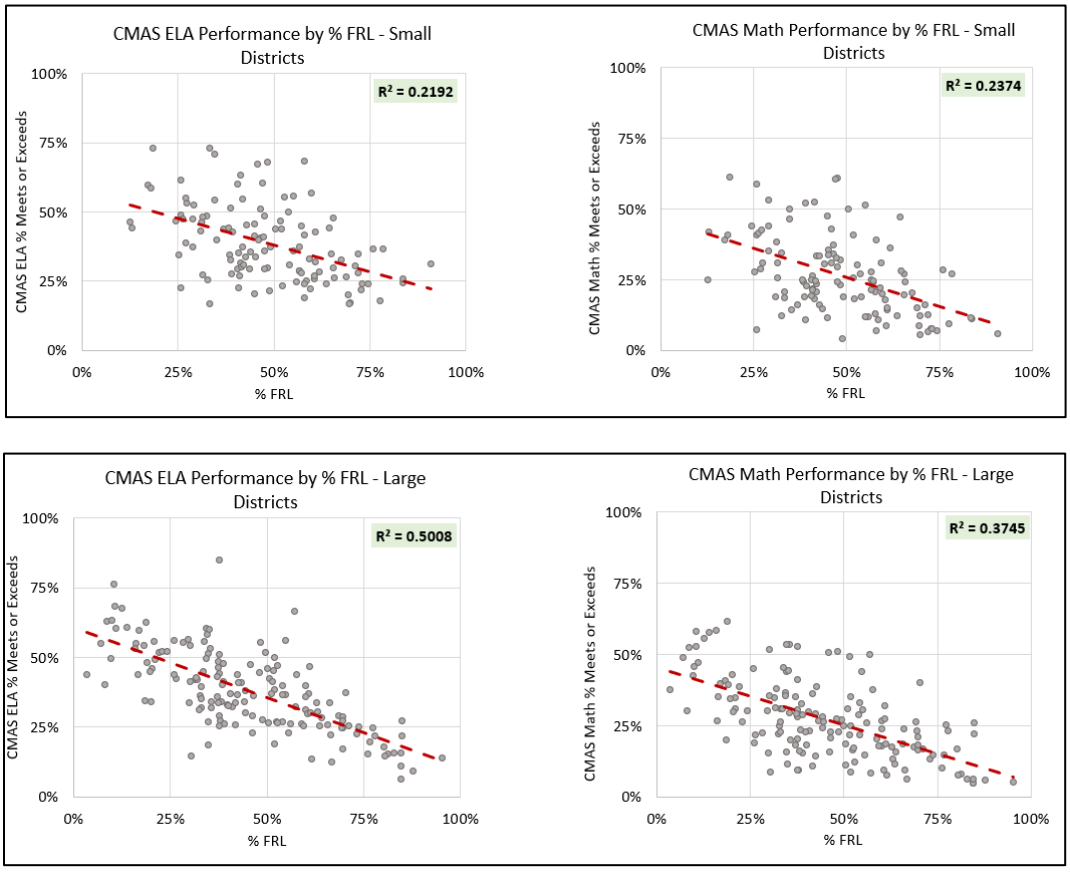
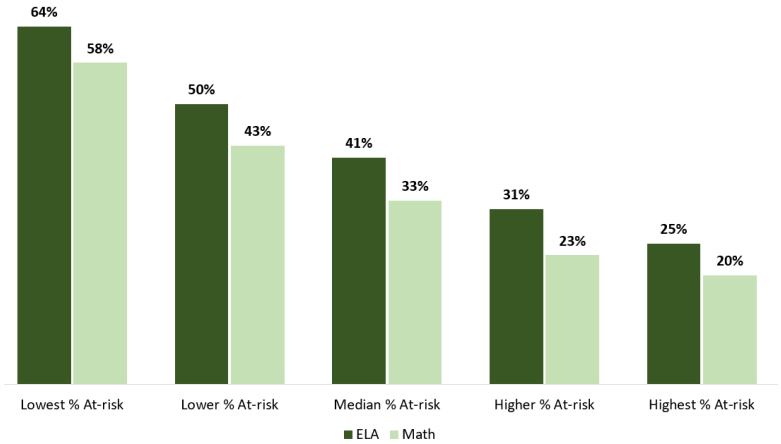


Figure 2.9: Student Performance by At-Risk Quintile



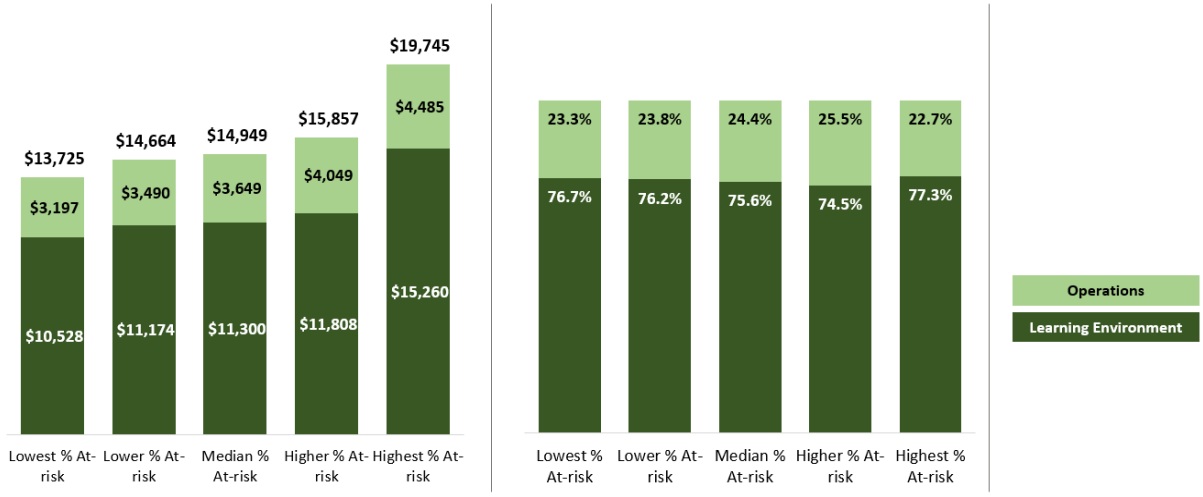
To understand how schools with different concentrations of low-income students compare, the study team organized all Colorado public schools into at-risk quintiles, with the first quintile being the schools with the lowest concentrations of at-risk students ("high-income") and the fifth quintile being the schools with the highest concentrations of at-risk students ("low-income"). An analysis of the state's elementary schools shows

that, on average, the achievement gap between low-income and high-income schools is 39 percentage points for ELA and 38 percentage points for Math.[8]

Narrowing the focus, the study team examined the performance of student subgroups against at-risk concentration and found that as the proportion of at-risk students increases, low-income students themselves and students with other needs, particularly ELL and SwD, face larger achievement gaps. There is more variability within these relationships, with at-risk concentration's effect on ELL student achievement being the strongest correlation.

The study team used FY23 school-level actual expenditure data reported on the CDE Financial Transparency website to compare how schools spend. On average, compared to high-income schools, low-income schools face higher achievement gaps, spend $3,977 more per student[9], enroll fewer students (smaller schools), tend to serve higher concentrations of ELLs and SwD, and have slightly lower student-teacher ratios. An analysis of all schools' spending by at-risk quintile shows that on average low-income schools spend more per student on both Learning Environment and Operations. The proportion of schools' total spending on the learning environment compared to operations is relatively similar across at-risk quintiles, as shown in the figure below. Differences in district size do not easily explain this spending difference; 14% of low-income districts are classified as moderately large and 13% are small.

Figure 2.10: Average Per Student Spending Categories by At-Risk Quintile (values and percentages)



Although schools with the highest percentage of at-risk students spend more per student, on average, they do not pay their teachers higher salaries, with an average teacher salary of roughly $70K compared to schools with the lowest percentage of at-risk students, who have an average teacher salary of $72K. However, they employ more teachers for every student, with an average student-teacher ratio of 16:1 compared to 18:1.

[8] Achievement gap here is proficiency based and defined as the difference in CDE-reported school-level percentage of students meeting or exceeding expectations in ELA and Math on the Colorado Measures of Academic Success (CMAS) exam.

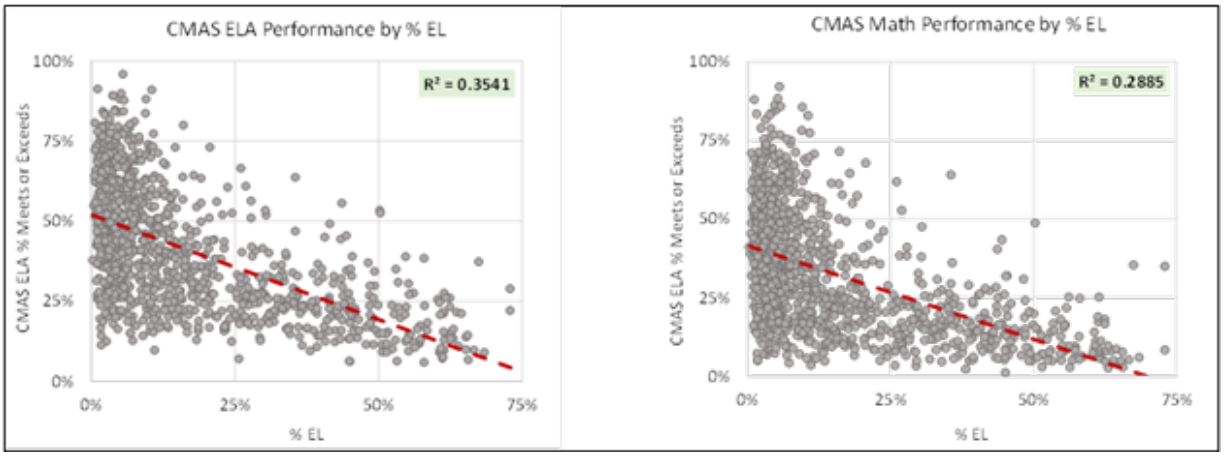
[9] Analysis excludes Online, Pre-K only, schools serving primarily SwD students, and outlier schools reporting below $7k and above $40k per student. As pointed out in the District-Level Funding section, higher concentrations of low-income students can generate more state and categorical funding for districts. Low-income schools defined as schools in the 5th at-risk Quintile and high-income schools defined as schools in the 1st at-risk Quintile.

The study team also performed a multi-variable analysis to isolate the concentration of at-risk students. When controlling for school size, percent white, percent ELL, and percent SwD, a statistically significant relationship exists between at-risk concentration and the proportion of students who meet CMAS proficiency. For every percent increase in at-risk concentration, we find a one-half percent decrease in CMAS proficiency, suggesting high at-risk face more significant achievement gaps than other schools even after controlling for other factors. There is some statistically significant relationship between at-risk concentration and higher per student expenditures. After controlling for enrollment size, percent white, percent ELL, and percent SwD, we find that schools with higher at-risk student populations generally spend more per student.[10] There is no statistically significant relationship between at-risk concentration and school revenue. However, because this analysis was driven by district data rather than school data, this relationship may not be statistically significant because of its low N size. Together, these relationships suggest that at-risk concentration has a meaningful impact on student achievement and necessitates higher per student spending. However, the current state funding formula does not provide an adequate adjustment to ensure the required resources are allocated accordingly to these higher-need students.

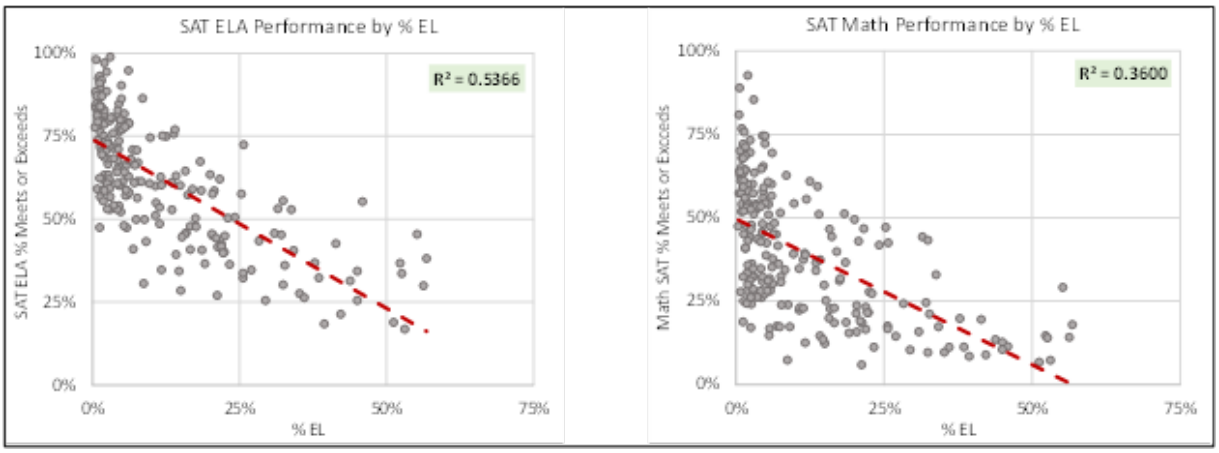
Student Needs: English Learners (ELLS)

Similarly to students identified by at-risk status, ELLs often face distinct challenges that can influence their academic performance and additional resource needs at the schools that serve them. The study team found that the percentage of ELLs in a school is correlated with academic performance, and schools with higher concentrations of ELLs generally face larger achievement gaps on the CMAS and SAT.

Figure 2.11: CMAS and SAT Performance by ELL Concentration

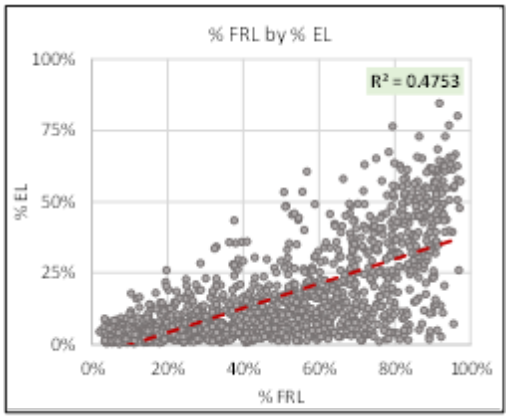


[10]Note: This model has a fairly low R squared (0.34), which suggests there are other unaccounted factors that could drive per-student spending beyond at-risk concentration. When we break down this analysis by expenditure type, we find that high at-risk schools spend slightly less on instruction and slightly more on student and staff supports.



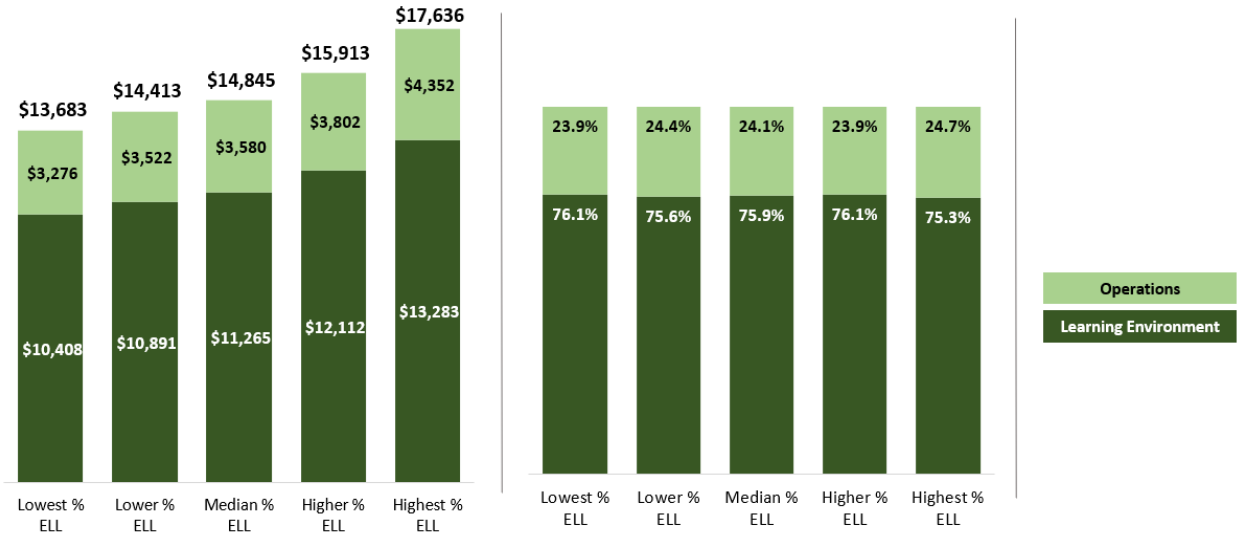
Additionally, there is a correlation between the percent of ELLs and the percent of at-risk students, showing that schools with higher ELL populations are more likely to serve higher concentrations of FRL students, shown in Figure 2.12.

Figure 2.12: ELL Concentration by At-Risk Concentration



On average, schools in the highest ELL quintile spend more per student than their counterparts in lower quintiles. The following breakdown highlights how resource allocation varies with ELL concentration. Schools in the highest ELL quintile spend approximately $3,952 more per student than schools in the lowest quintile and spend more in nearly all CDE expenditure categories. For schools in the highest ELL quintile, greater portions of the budget are dedicated to Student Supports and Instructional Staff Supports. While these schools spend about $2,300 more per student on instructional resources, they spend a smaller portion of their overall budget on instruction than schools in the lowest ELL quintile, as shown in Figure 2.13.

Figure 2.13: Average Per Student Spending Categories by ELL Quintile (values and percentages)



Landscape Analysis Findings

Through this analysis, the study team found that schools with higher concentrations of at-risk students face larger achievement gaps and higher spending needs. However, these schools, particularly in city districts, are not receiving adequate additional funding to address the higher needs of their students. Due to increased efficiencies with economies of scale, larger schools spend less per student on average.

While schools of all sizes report spending similar proportions of their budget on Learning Environment and Operations, the smallest schools in the state spend slightly less on Learning Environment and more on Operations than larger schools. Additionally, smaller schools tend to pay teachers lower average salaries and have lower student-to-teacher ratios. On average, smaller districts, many of which are rural, generate more funds per student, though they do not serve the highest concentrations of high-needs students. Meanwhile, the proportion of ELL and at-risk students in schools is correlated; schools with high ELL concentrations tend to also have higher at-risk concentrations, which increases the level of support needed in schools.

Chapter Three: Impacts of Income and Wealth

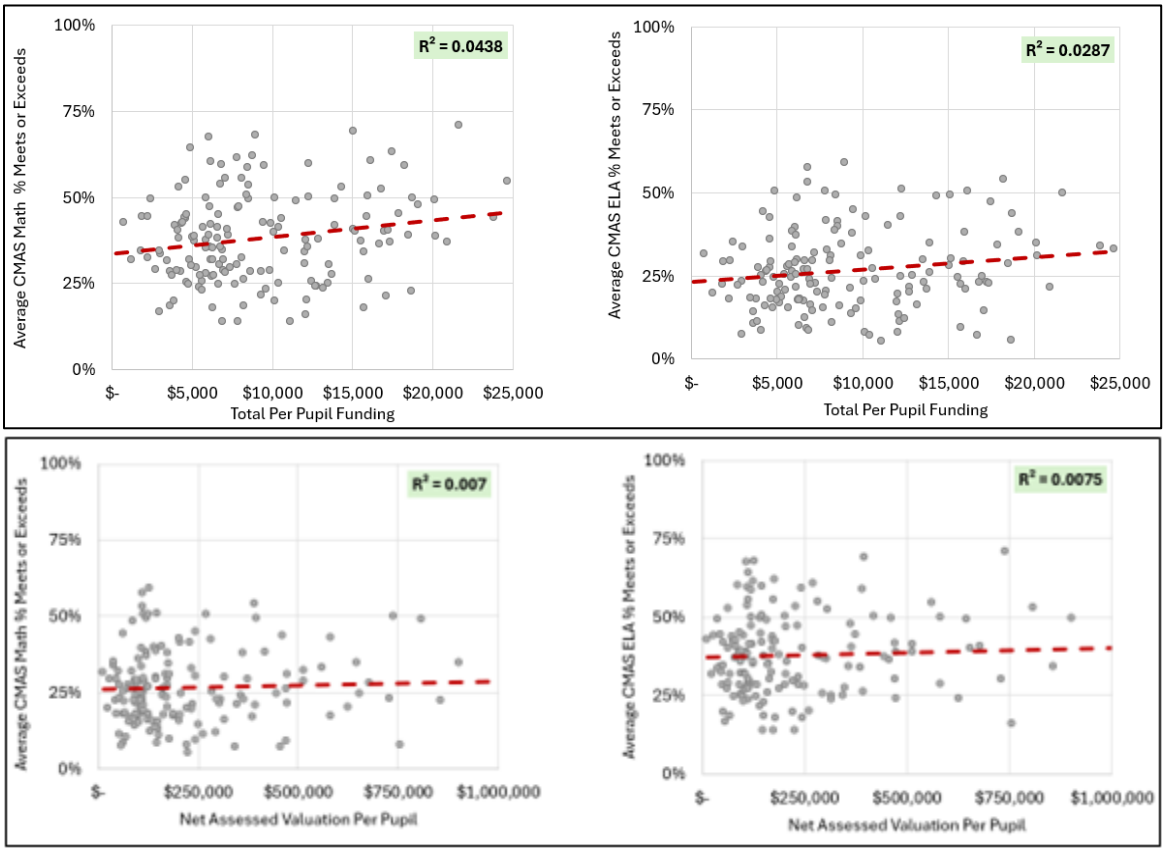
Introduction

Districts in Colorado generate federal, state, and local funding, with local contributions primarily derived from property taxes based on Net Assessed Valuation (NAV). The local mill levy override system further increases school funding variability, which allows districts to increase local funding for schools. The study team explored the impact of varying levels of community wealth and income on the funding available to school districts and, consequently, the education opportunities available to students. It examines the juxtaposition of districts with high property tax bases that may not necessarily represent high-income populations against those with lower bases that might not capture significant low-income populations.

Wealth & Income vs. Performance

Community wealth, as measured by NAV per student and total local funding per student, is a poor predictor of student performance. On average, districts serving higher concentrations of low-income students underperform those with lower concentrations. Of note, the strength of the relationship is stronger for the percent at-risk (based on FRL) than for median household income (MHI).

Figure 3.1: Average CMAS Math and ELA Performance by Local Per Student Funding and NAV Per Student



Mill Levy Overrides

Districts can increase funding for education above the base mill levy from the state funding formula with voter-approved additional mills through Mill Levy Overrides (MLO). In FY23[11], 114 (64%) school districts generated funding from Mill Levy Overrides, while 64 (36%) did not. On top of that, beginning in 2022-23, the state passed a bill directing the CDE to allocate funds as a match to the local revenue raised (MLO State Match funds). Figure 3.2 shows a wide range of MLO revenue on a per student basis across districts, and generally, state matching funds are allocated sporadically. This is reflective of the small size of the total allocation from the state, at roughly $10M[12] in FY23. This funding represents less than one percent of the total program funding for public schools that year. Additional information on the makeup of districts that do and do not generate MLO can be found in Appendix Three.

Figure 3.2: Mill Levy Override and State Match Per Student Revenue by District

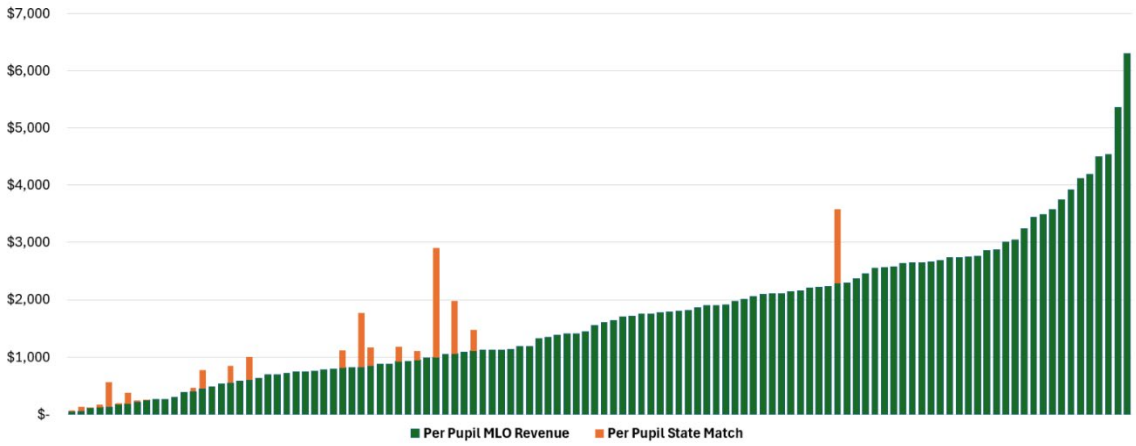
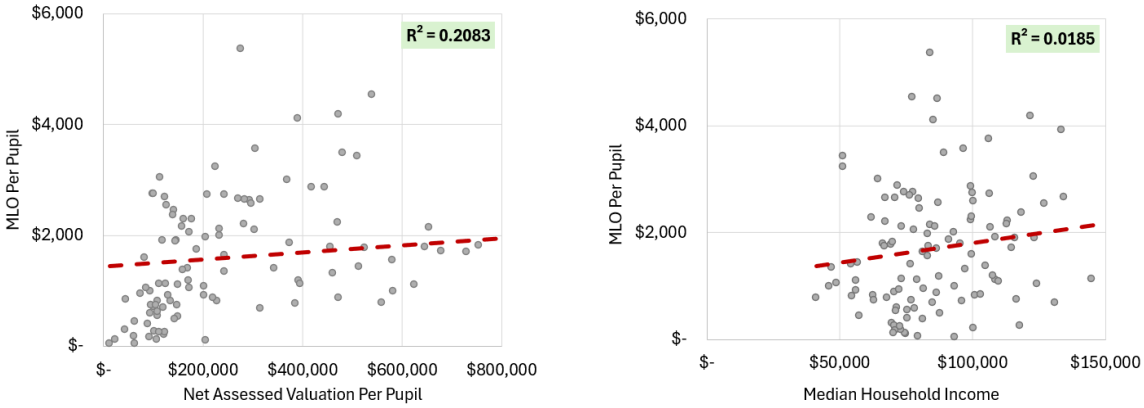


Figure 3.3: Per Student MLO Revenue by Median Household Income



[11] This analysis is grounded in the 2022-2023 school year, or Fiscal Year 2023 (FY23) unless otherwise noted, to align to the Landscape analysis. FY23 is the most recent year for which CDE reported school-level financial expenditure data was available at the time of this report.

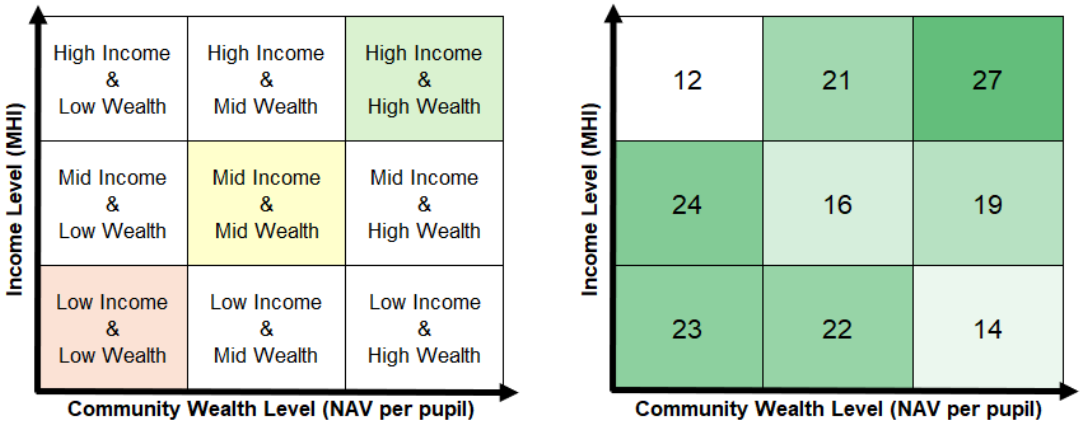
[12] Source: https://leg.colorado.gov/sites/default/files/mlo_match_interested_persons_memo_0.pdf.

Additionally, though total mill levy revenue generally increases as district wealth increases, regression analysis (Figure 3.3) found no real relationship between MLO revenue values and district levels of wealth and income as measured by Median Household Income and Net Asset Value (NAV).

Combined Effects of Wealth and Income – District Type Categories

To better isolate the impacts of wealth versus income and acknowledge unique community circumstances across the state, the study team classified all 178 school districts into distinct categories based on the combined effects of wealth and income levels. For this analysis, districts are assigned to tertiles low, medium (mid), and high for both MHI and NAV per student, creating nine distinct district types[13]:

Figure 3.4: District Type Categories (left) and Count of Districts by Type (right)



Across these district-type categories, districts classified as high-income districts are in areas with the highest reported MHI levels and serve the lowest concentrations of at-risk students. Low-income districts both have the lowest MHI levels and serve the highest concentrations of at-risk students. Districts classified as high wealth for this analysis, regardless of family income classification, are in areas with the highest reported NAV per student and generate the highest levels of local property tax funding per student.

The study team's analysis shows that voters in higher income and higher wealth districts are more likely to approve MLOs for increased local education funding. 93% of high-income and high-wealth districts generate MLO revenues, whereas just 13% of low-income and low-wealth districts generate MLO revenues. As the income level tertile increases, within each wealth level tertile, the percentage of districts generating MLO increases.

Conversely, state match funds favor districts in lower income and lower wealth tertiles, suggesting the matching mechanism is rewarding districts as intended, regardless of how low funding levels for state match funds may be. Of the 22 districts receiving the state match, 15 are in the low-wealth tertile and zero are in the high-wealth tertile. This aligns with the program's design, which allocates matching funds depending on a district's override mill capacity. Override mill capacity is a function of median household income; essentially, as a district's median household income goes up, its override mill capacity goes up because the government can reasonably rely on

[13] Low-income Tertile range: $34,545-$67,658 MHI; Mid Income Tertile range: $67,658-$84,366 MHI; High-income Tertile range: $84,366-$151,914 MHI; Low-wealth Tertile range: $12,002-$116,596 NAV per student; Mid Wealth Tertile range: $116,596-$251,498 NAV per student; High-wealth Tertile range: $251,498-$8,398,748 NAV per student.

that district to raise additional local funds. A district with low median household income has a lower override mill capacity, meaning the state government cannot reasonably expect the district to raise a large amount of additional local funds, thereby qualifying that district for state match funds.

Figure 3.5: Average Override Mills (left) and Median Override Mills for LEAs Generating (right)

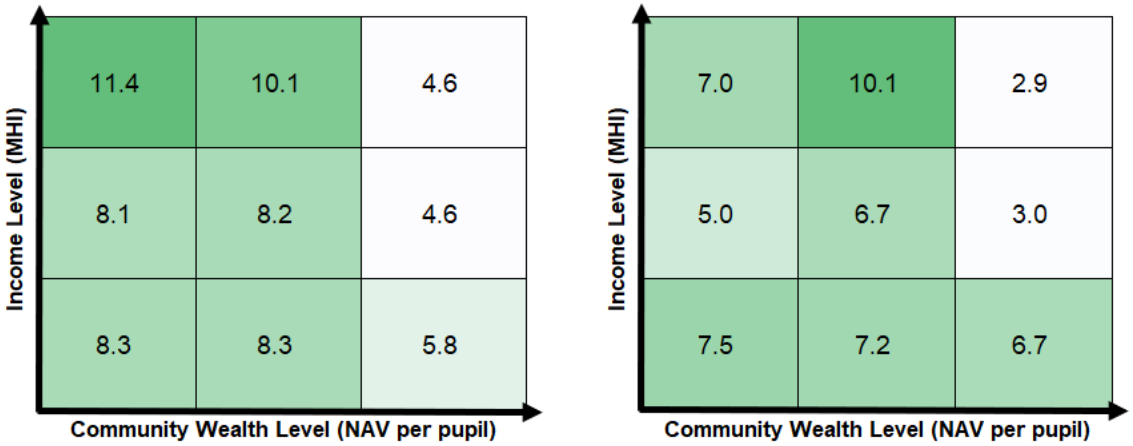
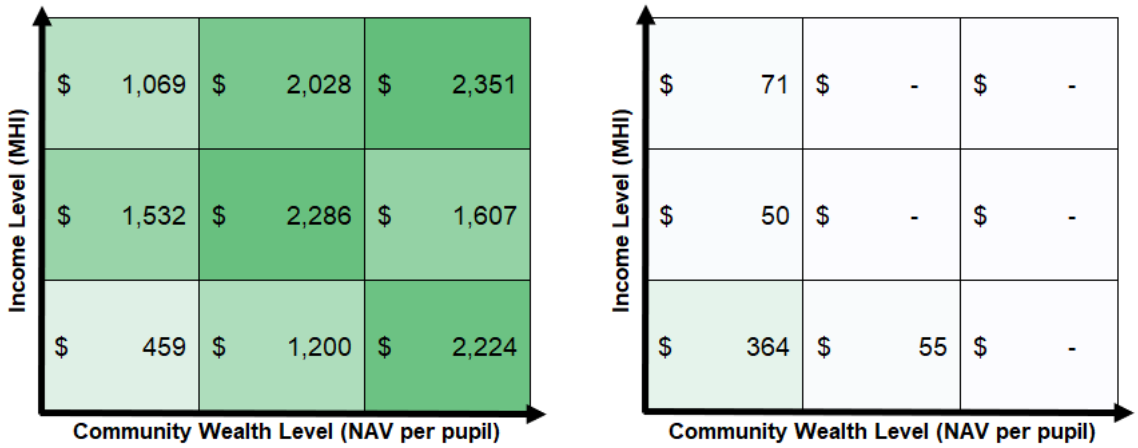
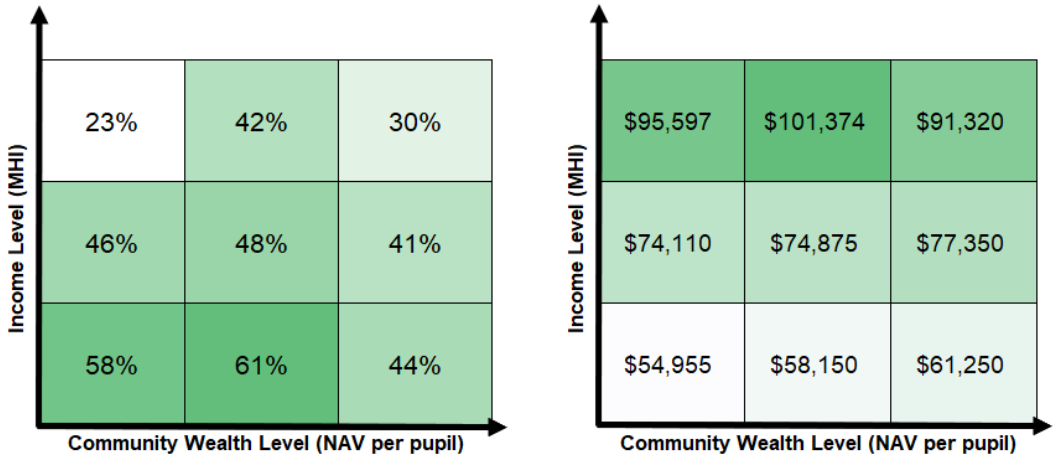


Figure 3.6: Average Mill Levy Override (MLO) Per Student (left) and MLO State Match Per Student for LEAs Generating (right)



Narrowing the analysis further, the study team examined these relationships solely in small districts and found that the statewide relationships persisted. Of the 108 districts classified as small, 44% are considered low-income. However, a large portion (27%) of the low-income, small districts are also considered high wealth. Further, 41% of small districts are also high wealth across income levels. Additionally, when comparing small districts to the state, the study team found that small districts report lower averages across wealth and income metrics. Specifically, the highest income, small districts still report lower average MHI than the state; the same can be said about the lowest-income, small districts. In terms of wealth, although there is some variation in NAV per student, local property tax funding per student is consistently lower in small districts compared to their state-wide counterparts.

Figure 3.7: Median % At-risk (left) and Median District Household Income (MHI) (right) – Small Districts



Educational Inputs

Finally, the study team examined the differences in critical educational inputs across districts of differing wealth and income levels, explicitly comparing districts that generate MLO revenue to those that do not. Regardless of MLO revenue, higher-income and higher-wealth districts, on average, pay their teachers higher salaries. Low-income and high-wealth districts maintain the lowest student-to-teacher ratios, while the highest-income districts maintain the highest ratios.

Figure 3.8: Average Teacher Salary (left) and Student-to-Teacher Ratio (right) for LEAs Generating MLO Revenue

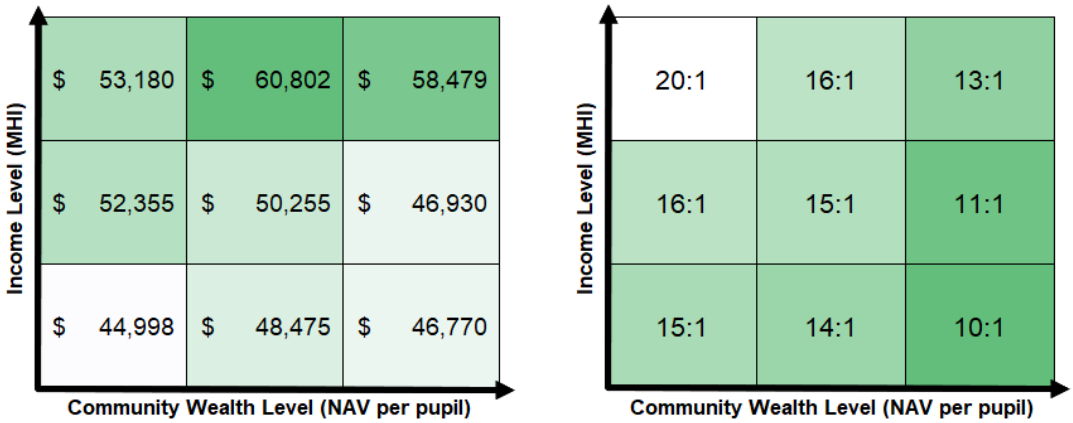
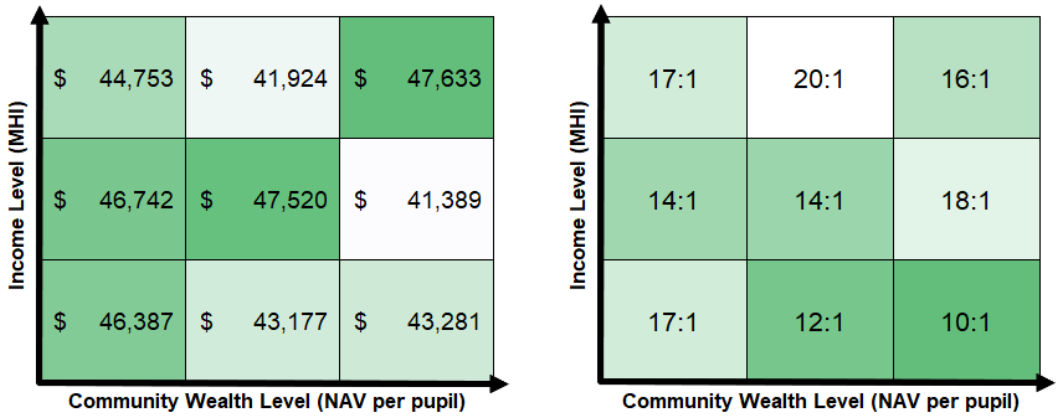


Figure 3.9: Average Teacher Salary (left) and Student-to-Teacher Ratio (right) for LEAs Not Generating MLO Revenue



When comparing districts that generate MLO revenue to those that do not, on average, medium-income & medium-wealth districts that generate MLO revenue have an average teacher salary $2,375 higher than those that do not generate MLO revenue, representing the smallest difference across groupings. Additionally, on average, high-income & medium-wealth districts that generate MLO revenue have an average teacher salary $18,878 higher than those that do not generate MLO revenue, representing the largest difference across groupings. Low-income & low-wealth and high-income & high-wealth districts that generate MLO revenue both saw equal difference in the number of students per teacher.

When controlling for size, the study team found that the observed trends remained consistent in small districts. Moreover, small districts generating MLO revenue are more likely in all but three cases to pay higher average teacher salaries than small districts that do not generate MLO revenue and are more likely in all but two cases to employ more teachers per student than small districts that do not.

Even when looking only at small districts, the impact of additional dollars from MLO revenue is clear, as students in MLO districts tend to face smaller achievement gaps than those in non-MLO districts. Specifically, the differences in resource allocation between small districts that generate MLO revenue and those that do not lead to an aggregate six percent and four percent increase in CMAS ELA and Math proficiency, respectively, for small districts that generate MLO revenue.

Conclusion

This study has shown that higher wealth districts benefit from greater local funding by leveraging higher net assessed valuations and mill levy overrides, while lower wealth districts, regardless of the socioeconomic status of their students, often struggle to secure similar funding levels. This not only highlights the limitations of relying heavily on local property taxes for funding education, but also underscores the critical role of state funding formulas in attempting to allocate funds where needed most. Given that income levels strongly predict student performance, and with state funding aimed at addressing disparities in lower-income districts, the local property tax base, particularly a district's ability to generate local revenue through use of overrides, becomes a crucial determinant of whether these districts can secure sufficient levels of total funding. The state, through the MLO state match program, is attempting to remedy these inequities in local funding capacity across districts with varying degrees of wealth. However, this funding stream, totaling $10M in FY23 and $32.5M in FY24, constitutes

a small portion of total education funding at present. It appears that this incentive has not been strong enough for low-income, low-wealth districts to generate MLOs; as evidenced by the 13% of low-income, low-wealth districts that have approved MLOs compared to the 93% of high-income, high-wealth districts. A n

A new formula is needed to lessen these disparities in funding. The lower-income & lower-wealth districts that generate lower levels of MLO revenue have difficulty providing adequate services to their higher-needs student populations. Additionally, evidence suggests that districts that generate MLO revenue typically spend additional funds on critical inputs such as higher salaries for teachers and additional teachers per student, which help to close achievement gaps.

Implementing a formula that is adequacy-based would ensure that all districts are starting with the resources needed for all students to meet state standards. Under the new formula, districts would rely less on MLOs to provide the resources needed to adequately serve students. Colorado could also consider reducing the amount of MLO revenue that districts can generate above the state-wide adequacy level, and additional MLOs would be wealth equalized by the state.

Chapter Four: Survey Analysis

Introduction

Study team members conducted a wide-reaching survey of parents, students, educators, district and school leaders, community members, business groups, advocates, and policymakers. The goal of the survey was to better understand what the Colorado public values at their schools and the resources they would prioritize if additional funding was available. The survey was open for response for roughly one month and had both English and Spanish language response options. Ultimately, the study team was able to collect responses from nearly 1,500 respondents. Please see Appendix Four, Section A for the full list of survey questions, as well as a detailed analysis of responses.

Demographics

Survey respondents represented a diverse range of voices across the state. The majority of respondents identified as school or district staff with 35% of respondents identifying as school instructional/certified staff, 14% as school or district leaders, and ten percent as school support staff.[14][1] The remaining 41% of respondents identified as family, students, and community members. Most respondents identified their racial/ethnic background as White (75%) or Hispanic/Latino (12%).

Geography & School Type

One hundred twenty-nine of Colorado's 178 school districts were represented. The five districts with the highest percentage of respondents came from Gunnison Watershed RE1J (183 responses), Jefferson County R-1 (158 responses), Monte Vista C-8 (104 responses), Aspen 1 (86 responses), and Ellicott 22 (66 responses). Nearly half of all respondents, 46%, were associated with Rural districts, while 22% were associated Suburban districts, 18% with Town districts, and nine percent with City districts. Over 90% of respondents were most associated with at least one traditional public school type, four percent with an alternative school, and three percent with an online school.

Survey Responses

School Resourcing

The survey first asked respondents to indicate what they valued most in their school(s) by rank ordering options from 1-15, with 1 being the **most** valued option and 15 being the **least** valued option. Table 4.1 below shows the priorities broken down separately for Families, Students, and Community Members (Community); School Instructional/Certified Staff (Instructional Staff); School Support Staff (Support Staff); and School or District Leaders (Leaders). Across all four groups, teacher quality was ranked the highest priority, with school culture, academic performance, school leadership, and support for mental and emotional health following. Meanwhile, before/after school opportunities and extracurricular activities were consistently ranked in the bottom four for all four groups. Community respondents ranked course offerings as a higher priority compared to School Staff or Leaders, and School Staff and Leaders ranked low-income and ELL supports higher than Community respondents.

[14] [1]School Instruction/Certified Staff including Teacher, Counselor, Social Worker, Nurse, Instructional Coach, Interventionist, Other Licensed Staff; School or District Leader (including Principal, Assistant Principal, Dean, Central Office Leadership); School Support Staff (including Teacher Assistant, School Clerk, Food Service, Bus Drivers, Engineer, Custodial, Other Non-Classroom Staff)

Table 4.1: School Resourcing Ranks by Respondent Type

Rank	Families, Students and Community Members	School Instructional/Certified Staff	School Support Staff	School or District Leader
1	Teacher Quality	Teacher Quality	Teacher Quality	Teacher Quality
2	School Academic Performance	School Culture	School Academic Performance	School Culture
3	School Culture	School Leadership	Support for Low Income Students	School Academic Performance
4	School Leadership	Support for Emotional and Mental Health	School Culture	School Leadership
5	Course Offerings	School Academic Performance	Support for Emotional and Mental Health	Support for Emotional and Mental Health
6	Support for Emotional and Mental Health	Support for Special Education Students	Support for Special Education Students	Support for Special Education Students
7	Family Engagement	Low-Income Students	School Leadership	Course Offerings
8	Facilities	Support for English Language Learners	Facilities	Support for Low-Income Students
9	Support for Special Education Students	Family Engagement	Support for English Language Learners	Family Engagement
10	Technology	Course Offerings	Family Engagement	Support for English Language Learners
11	Low-Income Students	Facilities	Technology	Facilities
12	Extracurricular Activities	Technology	Transportation	Technology
13	Before/After School Opportunities	Extracurricular Activities	Before/After School Opportunities	Extracurricular Activities
14	Transportation	Before/After School Opportunities	Extracurricular Activities	Transportation
15	Support for English Language Learners	Transportation	Course Offerings	Before/After School Opportunities

When looking at the responses by locale type defined by NCES codes (Table 4.2), teacher quality is still ranked highest priority by all groups. School culture, school academic performance, and support for emotional and mental health are also highly rated. City and Suburban respondents tended to value course offerings at a lower level than Town and Rural respondents. City respondents ranked support for low-income students and English language learners higher than in other locales. Town respondents ranked facilities higher than any other locale group. All four locales ranked extracurricular activities, before/after school programs, and transportation the lowest. See Appendix Four for additional information.

Table 4.2: School Resourcing Ranks by District Type

Rank	City	Suburb	Town	Rural
1	Teacher Quality	Teacher Quality	Teacher Quality	Teacher Quality
2	School Culture	School Culture	School Academic Performance	School Culture
3	School Leadership	School Leadership	School Culture	School Academic Performance
4	School Academic Performance	School Academic Performance	School Leadership	School Leadership
5	Support for Emotional and Mental Health	Support for Emotional and Mental Health	Support for Emotional and Mental Health	Course Offerings
6	Support for Low-Income Students	Support for Special Education Students	Course Offerings	Support for Emotional and Mental Health
7	Support for Special Education Students	Course Offerings	Facilities	Support for Special Education Students
8	Support for English Language Learners	Support for Low-Income Students	Support for Special Education Students	Family Engagement
9	Course Offerings	Family Engagement	Family Engagement	Facilities
10	Family Engagement	Support for English Language Learners	Support for Low-Income Students	Support for Low-Income Students
11	Facilities	Facilities	Technology	Technology
12	Technology	Technology	Support for English Language Learners	Support for English Language Learners
13	Extracurricular Activities	Extracurricular Activities	Extracurricular Activities	Extracurricular Activities
14	Before/After School Opportunities	Before/After School Opportunities	Transportation	Transportation
15	Transportation	Transportation	Before/After School Opportunities	Before/After School Opportunities

Additional Funding Prioritization

The survey then focused on understanding how and where respondents would prioritize additional funding. Responses for this question closely aligned to what respondents most valued in their schools across respondent type and district type.

When looking by respondent type, community respondents prioritized funding for course offerings higher than they ranked it in value (Table 4.3), conversely, they prioritized funding for family engagement less than they ranked it in value. Instructional staff similarly prioritized funding for family engagement less than they ranked it in value. The group also prioritized facilities higher than they ranked it in value, moving from eleventh to seventh. Support staff prioritized funding for course offerings far higher than they ranked it in value, moving from fifteenth to fifth. Leaders also prioritized funding for facilities higher its ranked value, moving from eleventh to eighth. These variations in responses help to highlight the tension schools and districts face when making tradeoff decisions about their resource allocations.

Table 4.3: School Funding Prioritization by Respondent Type

Rank	Family, Student, Community Members	School Instructional/ Certified Staff	School Support Staff	School or District Leader
1	Teacher Quality	Teacher Quality	Teacher Quality	Teacher Quality
2	School Academic Performance	Support for Emotional and Mental Health	School Academic Performance	School Academic Performance
3	Course Offerings	School Culture	School Culture	School Culture
4	School Culture	Support for Special Education Students	Support for Emotional and Mental Health	Support for Emotional and Mental Health
5	Support for Emotional and Mental Health	School Academic Performance	Course Offerings	School Leadership
6	School Leadership	Support for Low-Income Students	School Leadership	Support for Special Education Students
7	Facilities	Facilities	Facilities	Course Offerings
8	Technology	Course Offerings	Support for Special Education Students	Facilities
9	Support for Special Education Students	Support for English Language Learners	Support for Low-Income Students	Support for Low-Income Students
10	Support for Low-Income Students	School Leadership	Technology	Technology
11	Family Engagement	Technology	Family Engagement	Support for English Language Learners
12	Extracurricular Activities	Family Engagement	Support for English Language Learners	Family Engagement
13	Before/After School Opportunities	Before/After School Opportunities	Extracurricular Activities	Extracurricular Activities
14	Transportation	Extracurricular Activities	Before/After School Opportunities	Transportation
15	Support for English Language Learners	Transportation	Transportation	Before/After School Opportunities

When examining responses by locale (Table 4.4), City and Suburb respondents prioritize funding for special education and support for emotional and mental health higher than their ranked value. Support for emotional and mental health is the second highest funding priority behind teacher quality for both groups. Urban, Suburban, and Rural respondents ranked facilities funding higher than its ranked value, while Town respondents ranked facilities in line with its ranked value. Family engagement was a lower funding priority than value ranking for all four locale groups.

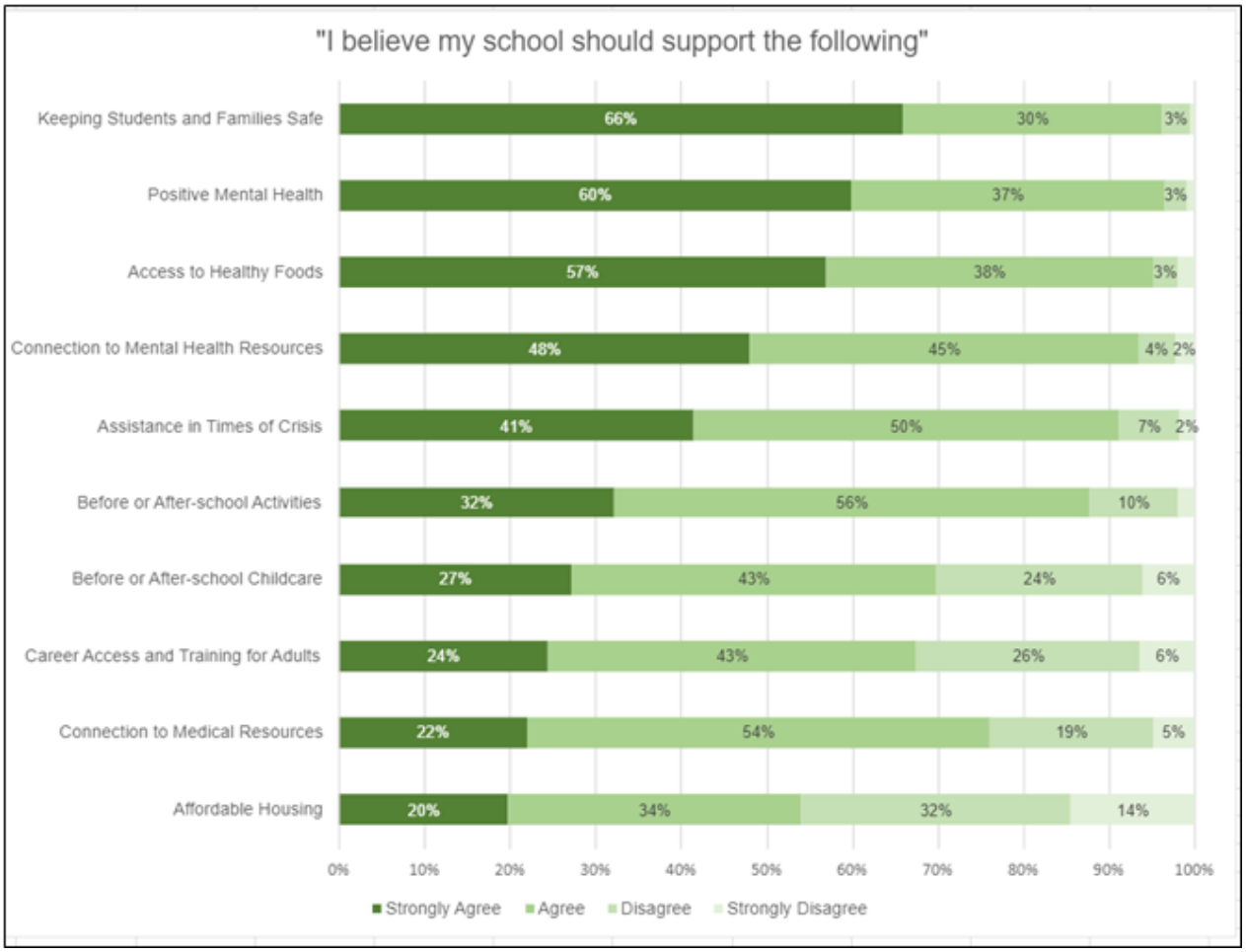
Table 4.4: School Funding Prioritization by Locale

Rank	City	Suburb	Town	Rural
1	Teacher Quality	Teacher Quality	Teacher Quality	Teacher Quality
2	Support for Emotional and Mental Health	Support for Emotional and Mental Health	School Academic Performance	School Academic Performance
3	School Academic Performance	Support for Special Education Students	School Culture	School Culture
4	School Culture	School Culture	Support for Emotional and Mental Health	Course Offerings
5	Support for Special Education Students	School Academic Performance	Course Offerings	Support for Emotional and Mental Health
6	Support for Low-Income Students	Support for Low-Income Students	School Leadership	School Leadership
7	Course Offerings	Facilities	Facilities	Facilities
8	School Leadership	Course Offerings	Support for Special Education Students	Support for Special Education Students
9	Facilities	Support for English Language Learners	Support for Low-Income Students	Technology
10	Support for English Language Learners	School Leadership	Technology	Support for Low-Income Students
11	Family Engagement	Technology	Family Engagement	Family Engagement
12	Technology	Family Engagement	Support for English Language Learners	Support for English Language Learners
13	Before/After School Opportunities	Extracurricular Activities	Extracurricular Activities	Transportation
14	Extracurricular Activities	Before/After School Opportunities	Before/After School Opportunities	Extracurricular Activities
15	Transportation	Transportation	Transportation	Before/After School Opportunities

School Supports

To better understand how the public views the role of schools, the survey asked whether respondents believe schools should support specific programs and resources. As shown in Figure 4.1, across all respondent types, most respondents either strongly agreed or agreed that schools should provide support for keeping families and students safe, positive mental health, access to mental health resources, access to healthy foods, assistance in times of crisis, and before/after school activities. Though most respondents agreed or strongly agreed with supporting all areas, respondents across all types were less likely to agree or strongly agree with the idea that schools should provide affordable housing, connection to medical resources, career access and training for adults, and before/after school childcare.

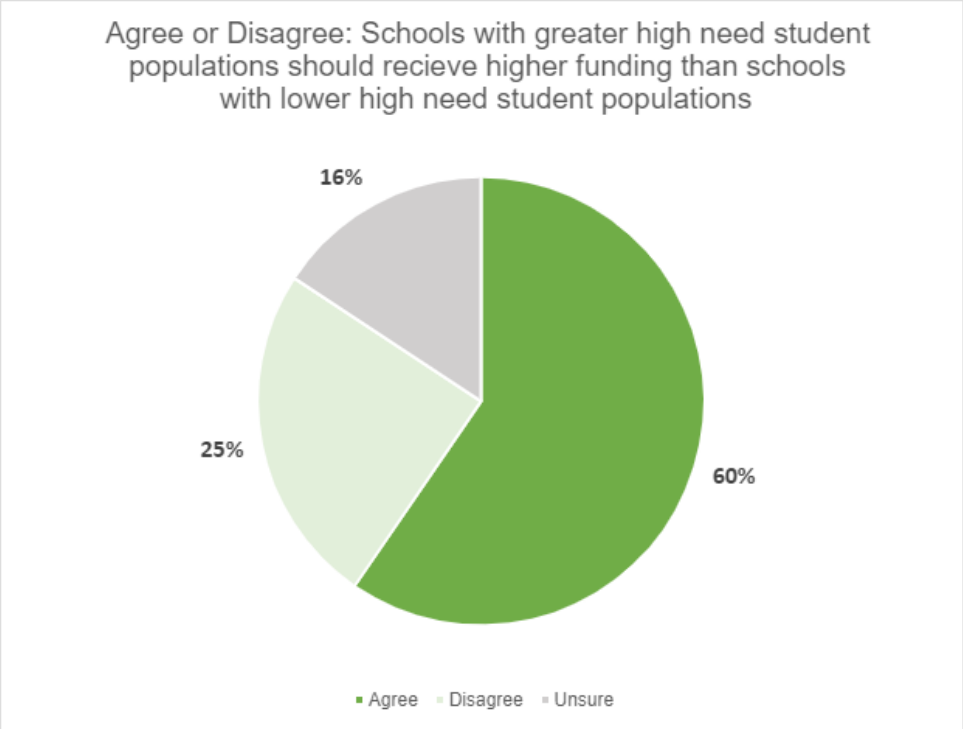
Figure 4.1: Expected School Supports



High-Need Schools

Respondents were asked whether they agree, disagree or were unsure regarding the following statement: "School A has more high need students (low income, special education, English language learners) than School B. Therefore, School A should receive more money than School B." Across all respondents, 65% agreed, 19% were unsure and 16% disagreed. Wider variation exists when examining these responses across respondent type and locale types, as seen in Figure 4.2. Community and support staff respondents were less likely to agree with this statement and more likely to be unsure in their response in comparison to instructional staff and leaders. Similarly, Rural and Town respondents were less likely to agree with this statement and more likely to be unsure in their response in comparison to city and suburb respondents.

Figure 4.2: High Need School Supports



Sustaining ESSER Investments

The survey asked respondents to indicate whether they were familiar with ESSER/COVID funding and based on this response, asked to indicate which ESSER funded investments they felt were the most valuable to sustain. Of the respondents who indicated they were familiar with ESSER/COVID funding (54% of total respondents) instructional staff, increased compensation, and school based mental health programming were identified as the most critical investments to sustain, which tracks closely with the results of the school resourcing questions. Conversely, community partnerships, extracurricular activities, and administrative staff were identified as the least critical investments to sustain, the extracurricular activities track closely with the results of the school resourcing questions.

The study team used the survey results as considerations for the new recommended formula.

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Chapter Five: Professional Judgement Approach Study

Introduction

The **Professional Judgment** (PJ) approach relies on the experience and expertise of educators in the state to identify the resources needed to ensure that all districts, schools, and students can meet state standards and requirements. Resources include school level personnel, non-personnel costs, additional supports and services, technology, and district level resources. These resources are first identified for students with no additional needs (which allows for calculating a base cost) and then separately for students in specific groups with additional needs, presented as weights.

Creating Representative Schools and Representative Districts

The PJ approach estimates the adequacy costs by creating a series of representative schools and districts. These representative schools are intended to resemble actual schools and districts in Colorado in terms of size, configuration, and demographics, including the percentage of students who are at-risk or English Language Learners (ELL).[15] This allowed PJ panelists to comfortably estimate what resources are needed since the representative school and district sizes generally looked familiar. At the same time, by looking at multiple sizes and different configurations of schools and districts, the approach developed per-student figures that can be applied in each unique district and school in Colorado based on actual enrollment figures and demographics.

Professional Judgment Panel Design

Based on its experience using the PJ approach in other states, the study team utilized multiple levels of PJ panels because: 1) multiple panels allow for the separation of school-level resources (which include resources like teachers, other school staff, supplies, materials, and professional development (PD)) from district level resources (such as district administration staff, facility maintenance and operations, insurance, and school board activities); and 2) the study team believes strongly in having each panel's work reviewed by another panel for a consensus approach to be effective. The PJ panel structure in Colorado was designed to conduct panels in the following progression:

1. School-level panels: the study team first held three school level panels based on grade level (elementary, middle, and high school with results used to develop a K-8 school).
2. Special needs panels: next, the study team held two special needs panels (one each for at-risk and ELL) to review the work of the previous panels.
3. District level panels: Next, four district panels were created, and the work of the previous school level and special needs panels were reviewed.
4. Chief Financial Officers (CFO) panel: the study team also held a panel specifically with CFOs to identify all non-personnel costs for all school and district levels.
5. Remoteness Panel: the study team held a panel specifically to address the additional costs districts incur by being remote.
6. Statewide panel: finally, the study team held a statewide panel to review the work of all previous panels to resolve any remaining inconsistencies across panels.

[15] The term "at-risk" was used to refer to students that struggle academically and was defined using free and reduced-price lunch (FRPL) eligibility as a proxy, and for this study ELL students were further disaggregated into World-Class Instruction Design and Assessment (WIDA) levels by school type. Further, the PJ approach did not examine resources for special education students, as there was a separate study specifically on special education. Gifted students were also discussed as part of the base resources needed in a school.

Each panel had between five and nine participants, with a combination of classroom teachers, principals, personnel who provide services to students with additional needs, directors, superintendents, paraprofessionals, and school business officials. The study team worked with districts, the Colorado Association of School Executives (CASE), the Colorado Association of School Boards (CASB), the Colorado Education Association (CEA), and CDE to encourage educators to sign up as potential panelists and then selected individuals from a variety of backgrounds and locations to be on panels.

PJ Panel Requirements

Before the commencement of any PJ panel discussions, all panelists reviewed a specific set of background materials and instructions (Appendix 5, Section A) prepared by the study team. Panelists were instructed that their task was to identify the resources needed to meet all Colorado standards and requirements, which included graduation requirements, as well as additional requirements for schools and districts around assessment, accountability, and educator evaluation. The study team prepared a summary document of these standards and requirements, which CDE reviewed (Appendix 5, Section B).

The study team provided the PJ panels with some starting point figures from a review of best practice research and any available staffing recommendations from the evidence-based baseline report. These figures were used to prompt discussion, and these initial figures did not constrain panelists. Instead, panelists could adjust the figures as they saw fit to suit Colorado best and add additional necessary staffing positions.

The figures the study team recorded for each panel represent a consensus among members. At the time of the meetings, no participant (either panel member or study team member) had a precise idea of the costs of resources being identified (the study cost out the resources after all panels were complete). This is not to say that panel members were unaware that higher levels of resources would produce higher base cost figures or weights. However, without specific price information and knowledge of how other panels were proceeding, it would have been impossible for any individual or panel to suggest resource levels that would lead to specific base cost figures or weights. Panelists were frequently reminded to identify the necessary resources to meet state standards most efficiently, without sacrificing quality.

Professional Judgment Resources Identified

While panels varied in the resources they identified as necessary for an adequate education, several key recommendations were common across most panels:

- Small class sizes, with student-to-teacher ratios of 15:1 in kindergarten through grade one, 18:1 in grade two through grade three, 22:1 in grade four through grade five, 25:1 in grades six through twelve;
- Significant time for teacher planning, collaboration, and embedded PD with instructional coaches to allow teachers to continuously improve their practice;
- A high level of student support (staffed as counselors, social workers, and psychologists) available for all students to address mental health and behavioral needs;
- Sufficient health support ensures students receive necessary medical care and monitoring from nurses and/or health aides, with a full-time person at each school;
- Administrative support in the form of assistant principals to address behavior issues and allow for required staff evaluations to be done thoroughly and effectively;

- Before- and after-school programs and summer-level learning opportunities, particularly for at-risk students;
- Sufficient staff to serve at-risk and ELL students, including teachers, interventionists and student support professionals, and deans, as well as coordination support for gifted and talented students and students with 504 plans;
- Counselor and career exploration staff to ensure students can achieve post-secondary goal; and
- Extended learning opportunities, including afterschool, summer school and bridge programs, for at-risk students.

It should be noted that the resources PJ panels identified in this report are examples of how funds might be used to organize programs and services in representative schools. The study team cannot emphasize strongly enough that the resources identified are not the only ways to organize programs and services to meet state standards. Instead, the exercise aims to estimate the overall level of resources and, therefore, the cost of adequacy, not to determine the best way to organize schools and districts.

School-level Personnel

Tables 5.1-5.3 show the school-level resources panels identified for the base education of students in Colorado. The tables first provide the school or program size and the panel recommended average class size. The tables then identify the personnel needed to serve all students (on an FTE basis), regardless of need, at the elementary, middle, and high school settings (base education). Subsequent tables identify the additional personnel needed to serve special needs students.

Table 5.1: Elementary/K-8 School Personnel as Recommended by Colorado PJ Panels, Base Education

School Configuration & Size	K-8 270 students	K-5 240 Students	K-5 390 Students	K-5 540 Students
Average Class Size	Grades K-8: 10	Grades K-1: 15 Grades 2-3: 18 Grades 4-5: 22	Grades K-1: 15 Grades 2-3: 18 Grades 4-5: 22	Grades K-1: 15 Grades 2-3: 18 Grades 4-5: 22
Instructional Staff				
Teachers	10.0	13.4	20.1	30.2
Specials Teachers	2.0	4.0	4.0	6.0
Instructional Coaches	0.5	1.0	1.0	1.5
Interventionists	0.5	2.0	2.0	3.0
Librarians/Media Specialists	0.5	1.0	1.0	1.0
Media Aide			0.5	1.0
Technology Specialist	0.25	0.75	1.0	1.0
Assessment/504/GT Coordinator	0.25	0.5	0.8	1.0
Instructional Aides	1.0	2.7	4.0	6.0
Student Support Staff				
Counselors	0.5	1.0	1.0	1.5
Nurses	0.5	0.5	0.5	1.0
Health Aides		0.5	0.5	
Psychologists	0.2	0.2	0.2	0.2
Social Workers	0.6	0.6	1.0	1.0
Administrative Staff				
Principals	0.5	1.0	1.0	1.0
Assistant Principals		1.0	1.0	1.0
Clerical/Data Entry Staff	1.0	2.0	2.0	3.0
Other Staff				
IT Technicians		0.2	0.2	0.5
Substitutes	1.0	1.0	1.0	1.0
Supervisory Aides			2.0	2.0

Table 5.2: Middle School Personnel as Recommended by Colorado PJ Panels, Base Education

School Configuration and Size	Grades 6-8 225 Students	Grades 6-8 450 Students	Grades 6-8 735 students
Recommended Average Class Size	25	25	25
Schedule	Eight-period day; teachers teaching six periods	Eight-period day; teachers teaching six periods	Eight-period day; teachers teaching six periods
Instructional Staff			
Teachers	12.0	24.0	39.2
Instructional Coaches	1.0	2.0	2.0
Interventionists	1.0	2.0	2.0
Librarians/Media Specialists	1.0	1.0	1.0
Media Aides		1.0	1.5
Technology Specialists	0.5	1.0	1.5
Assessment/504/GT Coordinator	0.5	1.0	1.3
Instructional Aides	3.0	3.0	6.0
Student Support Staff			
Counselors	1.0	2.0	3.0
Nurses	1.0	1.0	1.0
Heath Aides			1.0
Behavior Interventionists	0.5	1.0	2.0
Administrative Staff			
Principal	1.0	1.0	1.0
Assistant Principals	0.5	1.0	2.0
Clerical/Data Entry Staff	3.0	3.0	4.0
Other Staff			
IT Technicians	0.2	0.5	1.0
Supervisory Aides	2.0	2.0	4.0
Substitutes	0.5	1.0	1.0

Table 5.3: High School Personnel, as Recommended by Colorado PJ Panels, Base Education

School Configuration and Size	Grades 9-12 40 Students	Grades 9-12, 200 students	Grades 9-12, 400 students	Grades 9-12, 800 students	Grades 9-12, 2,000 students
Recommended Average Class Size	10	25	25	25	25
Schedule	Eight period day; teachers teaching six periods	Eight period day; teachers teaching six periods	Eight period day; teachers teaching six periods	Eight period day; teachers teaching six periods	Eight period day; teachers teaching six periods
Instructional Staff					
Teachers	6.0	11.0	21.3	42.7	106.7
Instructional Coaches	0.5	1.0	2.0	4.0	10.0
Interventionists	0.5	1.0	1.0	2.0	5.0
Librarians/Media Specialists	0.5	0.5	1.0	1.0	1.0
Media Aides		0.5		0.5	2.0
Technology Specialists	0.2	0.5	1.0	2.0	3.0
Assessment/504/GT Coordinator	0.5	0.5	1.0	2.0	3.0
Student Support Staff					
Counselors	1.0	2.0	2.0	3.2	8.0
Nurses	0.5	1.0	1.0	1.0	1.0
Health Aides					2.0
Psychologists			0.5	1.0	2.0
Social Workers	0.5	0.5	0.5	1.0	2.0
Addiction/Mental Health Counselors		0.5	0.5	1.0	2.0
Workforce Coordinators	0.5	0.5	1.0	1.5	2.5
Administrative Staff					
Principal	0.5	1.0	1.0	1.0	1.0
Assistant Principals	0.5	1.0	1.0	2.0	4.0
Athletic/Activities Director		0.5	1.0	1.0	1.0
Bookkeepers		1.0	1.0	1.0	2.0
Clerical/Data Entry Staff		2.0	2.0	4.0	6.0
Other Staff					
IT Technicians	0.2	0.2	0.5	1.0	2.5
Supervisory Aides	1.0	2.0	2.0	2.0	2.0
Security Staff	1.0	1.0	1.0	1.0	2.0

Additional Needs Personnel at the School Level

The resources described above detail the resources any student in Colorado should expect to find when entering a school. This section focuses on the resources schools and districts need to serve at-risk and ELL students. As noted previously, the study team did not examine special education within the PJ approach because it was a separate piece of the Colorado input-based adequacy study. The study examined the following additional needs populations:

- Panelists looked at three concentration levels (25%, 55%, and 75%) of at-risk students; and
- The resources needed for ELL students were identified by WIDA levels (WIDA 1&2, WIDA 3&4, and WIDA 5&6).

At-Risk Resources

Tables 5.4-6 identify the resources needed to serve at-risk students at the three concentration levels. Resources shown in the tables are above and beyond the resources identified in the base. Each table should be considered separately. For example, instructional aide is suggested for the large elementary school at the 25% concentration, and three instructional aides at the 55% concentration. These are separate identifications and should not be added together.

Table 5.4: Additional Personnel Needed to Serve At-Risk Students, 25% Concentration

25% At-Risk Students					
Elementary School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	23 students	60 students	90 students	90 students	135 students
Interventionists			0.4	0.4	0.8
Instructional Aide			1.0	1.0	1.5
Counselor	0.3	0.3	0.3	0.3	0.3
Psychologists		0.2	0.3	0.3	0.3
Social Workers		0.3	0.3	0.3	0.3
Family Liaisons		0.3	0.3	0.3	0.3
Middle School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	23 students	56 students	56 students	113 students	225 students
Interventionists		0.4	0.4	0.8	1.0
Instructional Coaches		0.2	0.2	0.5	0.8
Social Workers	0.3	0.25	0.25	0.5	0.8
Family Liaisons		0.25	0.25	0.5	0.8
Assistant Principals		0.2	0.2	0.4	0.8
High School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	10 students	50 students	100 students	200 students	500 students
Interventionists		0.3	0.5	1.0	3.0
Instructional Coaches	0.2	0.4	0.8	1.6	2.0
Social Workers		0.1	0.2	0.4	1.0
Family Liaisons		0.1	0.2	0.4	1.0
Addiction/Mental Health Counselors		0.1	0.2	0.4	1.0
Workforce Counselors		0.1	0.2	0.4	1.0
Assistant Principal		0.1	0.2	0.4	1.0

Table 5.5: Additional Personnel Needed to At-Risk Serve Students, 55% Concentration

55% At-Risk Students					
Elementary School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	50 students	132 students	198 students	198 students	297 students
Interventionists	0.5	1.3	2.0	2.0	3.0
Instructional Aide	1.0	1.4	2.0	2.0	30
Counselor	0.7	0.4	0.55	055	0.8
Psychologists		0.4	0.55	0.55	0.8
Social Workers		0.4	0.55	0.55	0.8
Family Liaisons		0.4	0.55	0.55	0.8
Middle School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	50 students	124 students	124 students	248 students	495 students
Interventionists	0.5	1.0	1.0	2.0	4.0
Instructional Coaches		0.5	0.5	1.0	2.0
Counselors	0.7	0.5	0.5	1.0	2.0
Social Workers		0.5	0.5	1.0	2.0
Family Liaisons		0.5	0.5	1.0	2.0
Assistant Principals		0.5	0.5	1.0	2.0
High School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	22 students	110 students	220 students	440 students	1,100 students
Teacher	1.0	2.3	4.6	9.0	21.0
Interventionists	0.25	1.0	2.0	4.0	10.0
Social Workers	0.25	0.3	0.5	1.0	2.5
Family Liaisons		0.3	0.5	1.0	2.5
Addiction/Mental Health Counselors		0.3	0.5	1.0	2.5
Workforce Counselors		0.3	0.5	1.0	2.5
Assistant Principal		0.3	0.5	1.0	2.5

Table 5.6: Additional Personnel Needed to Serve At-Risk Students, 75% Concentration

75% At-risk Students					
Elementary School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	68 students	180 students	270 students	270 students	378 students
Teachers	1.0	2.5	4.0	4.0	6.0
Interventionists	1.0	2.0	2.0	2.0	2.8
Instructional Aide	1.5	3.0	3.0	3.0	4.2
Counselor	1.0	1.0	1.0	1.0	1.0
Psychologists		1.0	1.0	1.0	1.0
Social Workers		1.0	1.0	1.0	1.0
Family Liaisons		1.0	1.0	1.0	1.0
Assistant Principals		0.5	1.0	1.0	1.0
Middle School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	68 students	169 students	169 students	338 students	675 students
Interventionists	1.0	2.5	2.5	4.7	8.4
Instructional Coaches		1.0	1.0	2.4	4.8
Counselors	1.0	1.0	1.0	1.4	2.8
Social Workers		1.0	1.0	1.4	2.8
Family Liaisons		1.0	1.0	1.4	3.0
Assistant Principals		1.0	1.0	1.5	3.0
High School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of At-Risk Students	30 students	150 students	300 students	600 students	1,500 students
Teacher	1.5	3.0	6.0	12.3	29.0
Interventionists	0.5	1.4	2.7	5.5	14.0
'Social Workers	0.5	0.7	0.7	1.4	3.0
Family Liaisons		0.7	0.7	1.4	3.0
Addiction/Mental Health Counselors		0.7	0.7	1.4	3.0
Workforce Counselors		0.7	0.7	1.4	3.0
Assistant Principal		0.7	1.0	1.4	3.0

ELL Resources by WIDA Level

Tables 5.7-9 identify the resources needed to serve ELL students, disaggregated by WIDA levels, which measure students' language acquisition levels against the WIDA ELP Standards[16]. WIDA 1&2 ELL students have the highest language needs and focus on the communication aspect of the language. On average, in Colorado, six percent of ELL students are in elementary, four percent in middle, and three percent in high school. There is a higher number of WIDA 1&2 students in earlier grades because elementary school may be the first time a student has had prolonged exposure to the English language. The average percentage of WIDA 3&4 students in Colorado was seven percent at elementary, five percent at middle, and four percent at high school. WIDA 3&4 students are beginning to develop oral and written language skills in related content areas. The WIDA Standards for levels 5&6 represent the areas where students are bridging and reaching English language proficiency in specialized and technical language.

[16] https://www.wida.us/standards/Resource_Guide_web.pdf

Table 5.7: Additional Personnel Needed to Serve WIDA 1&2 ELL Students

WIDA 1&2 ELL Students					
Elementary School (6%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	5 students	14 students	23 students	23 students	35 students
Teachers	0.5	0.5	0.75	0.75	1.13
Instructional Coaches	0.1	0.25	0.25	0.25	0.5
Middle School (4%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	5 students	7 students	7 students	14 students	27 students
Teachers	0.25	0.3	0.3	0.6	1.2
Instructional Coaches	0.1	0.25	0.25	0.25	0.38
High School (3%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	1 student	6 students	12 students	24 students	60 students
Teachers	0.3	0.3	0.6	1.2	3.0
Instructional Coaches		0.5	0.5	0.6	1.5

Table 5.8: Additional Personnel Needed to Serve WIDA 3&4 ELL Students

WIDA 3&4 ELL Students					
Elementary School (7%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	5 students	17 students	25 students	25 students	38 students
Teachers	0.2	0.5	0.65	0.65	0.98
Instructional Coaches	0.1	0.3	0.2	0.2	0.4
Middle School (5%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	6 students	11 students	11 students	23 students	45 students
Teachers	0.2	0.3	0.3	0.6	1.1
Instructional Coaches		0.2	0.2	0.4	0.7
High School					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	2 students	8 students	16 students	32 students	80 students
Teachers	0.2	0.	1.00	1.60	3.20
Instructional Coaches		0.30	0.60	1.00	1.00

Table 5.9: Additional Personnel Needed to Serve WIDA 5&6 ELL Students

WIDA 5&6 ELL Students					
Elementary School (3%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	3 students	7 students	11 students	11 students	37 students
Teachers	0.05	0.1	0.1	0.1	0.15
Middle School (1%)					
District Size	Very Small	Very Small	Small	Moderate	Large
# of ELL Students	3 students	2 students	2 students	5 students	9 students
Teachers	0.05	0.04	0.04	0.08	0.1
High School (1%)					
District Size	Very Small	Small	Moderate Small	Moderate Large	Large
# of ELL Students	0 students	2 students	4 students	8 students	20 students
Teachers		0.05	0.1	0.2	0.5

School-level Non-Personnel Costs

Table 5.10-12, below, shows additional school-level non-personnel costs identified by the panels.

Table 5.10: School-level Non-Personnel Costs Identified by Colorado PJ Panels, Elementary School

Elementary Base Education				
	90 Students	**240 Students**	**360 Students**	**540 Students**
Professional Development	$214/ student	$162/ student	$157/student	$132/ student
Substitutes	$350/student	$196/student	$175/student	$175/student
Supplies, Materials, and Equipment	$200/student	$165/student	$165/student	$165/student
Textbooks	$105/student	$105/student	$105/student	$105/student
Technology hardware and Licensing	$400/student	$400/student	$400/student	$400/student
Assessment	$15/student	$15/student	$15/student	$15/student
Student Activities	$60/student	$40/student	$30/student	$20/student
Safety and Security	$100/student	$100/student	$100/student	$100/student
Library Materials	$20/student	$12/student	$12/student	$12/student

Table 5.11: School-level Non-Personnel Costs Identified by Colorado PJ Panels, Middle School

Middle School Base Education			
	225 Students	**450 Students**	**735 Students**
Professional Development	$146/ student	$146/ student	$121/student
Substitutes	$145/student	$140/student	$139/student
Supplies, Materials, and Equipment	$175/student	$175/student	$175/student
Textbooks	$105/student	$105/student	$105/student
Technology hardware and Licensing	$400/student	$400/student	$400/student
Assessment	$15/student	$15/student	$15/student
Student Activities	$300/student	$275/student	$250/student
Safety and Security	$170/student	$170/student	$170/student
Library Materials	$12/student	$12/student	$12/student

Table 5.12: School-level Non-Personnel Costs Identified by Colorado PJ Panels, High School

High School Base Education					
	40 Students	**200 Students**	**400 Students**	**800 Students**	**2,000 Students**
Professional Development	$303/student	$223/student	$171/ student	$146/ student	$121/student
Substitutes	$408/student	$224/student	$141/student	$140/student	$140/student
Supplies, Materials, and Equipment	$250/student	$200/student	$165/student	$150/student	$75/student
Textbooks	$105/student	$105/student	$105/student	$105/student	$105/student
Technology Hardware and Licensing	$400/student	$400/student	$400/student	$400/student	$400/student
Assessment	$15/student	$15/student	$15/student	$15/student	$15/student
Student Activities	$525/student	$400/student	$350/student	$325/student	$250/student
Safety and Security	$170/student	$170/student	$170/student	$170/student	$170/student
Library Materials	$15/student	$15/student	$15/student	$15/student	$12/student

The panelists identified $100 per student for security and safety would cover the school's security needs, including school resource officers. The technology hardware and licensing amounts cover 1:1 devices at all levels and all tech-related licensing. There is an increase in per-student costs for student activities, safety and security, and library materials in the higher grade levels due to the higher needs of students at the higher grade levels. PD costs are shown separately as a per student figure to cover materials, trainers, or conference fees. In addition to what is reflected in the tables above, panelists identified a need for two additional days of PD beyond what is already in current teacher contracts. The panels identified the need for 11 days of substitute time for each teacher throughout the year, reflected in the tables as a per student amount.

Table 5.13: School-level Non-Personnel Costs for At-risk Students Identified by Colorado PJ Panels

	Elementary	Middle	High
Supplies, materials, and equipment	$25/student	$25/student	$25/student
Student Activities	$20/student	$75/student	$225/student

The panelists added additional funds for student activities, supplies, and materials so that students in poverty would not have to pay additional money for participation. All figures for at-risk are in addition to base figures and are only applied to the students in those categories. Additionally, panelists did not identify ELL costs at the school level but placed them at the district level for efficiency.

School-level Additional Programs

Tables 5.14-16 indicate the other programs, such as afterschool, summer, and bridge programs. Panelists recommended that at-risk students participate in these extended learning opportunities to support improved academic outcomes for these students. These programs are in addition to extracurricular sports, clubs and enrichment that were already captured in the per student amount for student activities shown in the prior tables.

It is important to note that while the study did not include transportation, panelists felt that additional transportation (i.e., a second bus pickup for students in an afterschool program) was necessary for extended learning opportunities to be possible.

Table 5.14: Elementary Additional Programs Identified by Colorado PJ Panels

	Afterschool Tutoring	Summer School	Jump Start
Type of Student Served	At-Risk	At-Risk	At-Risk
Percentage of Identified Populations Served	100%	100%	100%
Program Specifics (length of program, length of day)	1 hour, 5 days/week, 36 weeks	4 hours, 4 days/week, 8 weeks	7 hours, 5 days/week, 2 weeks
Personnel			
Teachers	10:1 Ratio	10:1 ratio	10:1 ratio
Coordinators	1	1	1
Other Costs			
Supplies, Materials and Equipment	$20/student	$20/student	$20/student
Snacks	$180/student	$80/student	$70/student

Table 5.15: Middle School Additional Programs Identified by Colorado PJ Panels

	Afterschool Tutoring	Summer School	Bridge
Type of Student Served	At-Risk	At-Risk	All 6th graders
Percentage of Identified Populations Served	100%	100%	33%
Program Specifics (length of program, length of day)	1 hour/day, 5 days/week, 36 weeks	4 hours/day, four days/week, 8 weeks	3 hours/day, 5 days/week, 1 week
Personnel			
Teachers	10:1 ratio	10:1 ratio	25:1 ratio
Coordinators	1.0	1.0	
Other Costs			
Supplies, Materials and Equipment	$25/student	$25/student	$25/student
Snacks	$180/student	$96/student	$5/student

Table 5.16: High School Additional Programs Identified by Colorado PJ Panels

	Afterschool Tutoring	Summer School	Bridge
Type of Student Served	At-Risk	At-Risk	All 9th graders
Percentage of Identified Populations Served	100%	100%	25%
Program Specifics (length of program, length of day)	1 hour/day, 5 days/week, 36 weeks	4 hours/day, four days/week, 8 weeks	3 hours/day, 5 days/week, 1 week
Personnel			
Teachers	10:1 ratio	10:1 ratio	25:1 ratio
Coordinators		1.0	
Other Costs			
Supplies, Materials and Equipment	$30/student	$30/student	$30/student
Travel	$50/student		
Snacks		$128/student	$5/student

District-level Resources

Panelists also identified the resources needed at the district level to support schools. Table 5.17 shows the personnel resources needed for all students and the additional resources needed for ELL. The panelists felt no additional personnel were needed above the base district personnel to serve at-risk students.

Table 5.17: District Personnel Resources Identified by Colorado PJ Panels, Base Education and ELL

Base Education				
Personnel	**Very Small District**	**Small District**	**Moderate Small District**	**Moderate Large District**
Superintendents	1.0	1.0	1.0	1.0
Assistant/Associate Superintendents		1.0	0.0	3.0
Directors		4.0	5.0	8.0
Supervisors/Coordinators			4.0	14.0
Managers	2.0	3.0	4.0	4.0
Clerical/Data Entry Staff	1.0	1.0	6.0	7.0
IT Technicians		1.5	8.0	10.0
English Language Learners				
Coordinators/Supervisors		0.3	1.0	2.0
Interpreters	0.25	0.5	1.0	2.0
Family Liaison	0.1	0.25	0.5	1.0
Clerical/Data Entry Staff			1.0	3.0

CFO panels also addressed the district-level costs incurred to support schools and identified costs primarily based on existing district expenditure figures. Some cost areas, such as assessments, were already identified at the school level, so they are not included at the district-level.

These costs included district operational expenses such as: building maintenance and operations (M&O), technology licensing and hardware, insurance, legal fees, finance and data system fees, and communications. Panelists strongly recommended an additional per student cost for food service, since many CFOs stated that food service no longer is a net cost for districts. Also, panelists identified higher M&O costs than are currently expended to account for the deferred maintenance many schools face. In addition to district operation costs, district-level costs are also included to fund different student pathways with dollars for career and technical education, concurrent enrollment, and online schooling.

Table 5.18: District Non-Personnel Costs, Base Education Identified by Colorado PJ Panels

Cost Area	Very Small District	Small District	Moderate Small District	Moderate Large District	Large District
Maintenance and Operations	$3,200/student	$2,700/student	$1,300/student	$1,050/student	$800/student
Safety and Security	$75/student	$30/student	$30/student	$30/student	$30/student
Insurance	$500/student	$400/student	$400/student	$300/student	$220/student
Legal	$150/student	$115/student	$50/student	$50/student	$32/student
School board	$58/student	$49/student	$10/student	$10/student	$10/student
Central Office Supplies	$225/student	$200/student	$150/student	$150/student	$150/student
Transportation for Activities	$175/student	$175/student	$76/student	$25/student	$15/student
Food Service	$325/student	$137/student	$137/student	$63/student	$63/student
Graduation	$12/student	$12/student	$5/student	$5/student	$5/student
Communications	$78/student	$78/student	$78/student	$78/student	$50/student
Concurrent Enrollment	$25/student	$25/student	$25/student	$25/student	$25/student
CTE Costs	$28/student	$28/student	$28/student	$28/student	$28/student
Online	$50/student	$50/student	$50/student	$50/student	$50/student
Audit	$207/student	$43/student	$29/student	$12/student	$3/student
Internet, Phone, & Postage	$100/student	$75/student	$75/student	$75/student	$75/student

District Level Remoteness

The remote panel identified the additional resources associated with a remote setting. The remote district panel reviewed the work of the small school district and identified four areas: contracted services, repairs and maintenance, and PD, where remote districts face increased costs.

According to the panelists, many remote districts end up contracting out social workers, counselors, and other services because they do not have enough students to hire a full FTE in these areas. Due to their remoteness, they cannot share these personnel with other schools or districts. Additionally, remote districts pay higher rates for these contracted services because the service providers' drive time is longer to be on site. Panelists found this to be a 25% cost increase over small districts.

Like contracted services, repairs, and maintenance are more expensive for remote districts because repair companies charge for increased drive distance. Panelists found this to be a 25% increase in costs from small districts.

Panelists cited the cost of PD for their staff in remote districts as an additional area where costs were higher than those seen in other districts. Panelists shared that it is difficult to find individuals to conduct the PD in many of these remote places and districts usually pay more for the trainer's travel time. Additionally, if these districts want to send their staff to PD, they usually must pay for two nights of hotel and extra substitute time due to the distances staff must travel. Panelists found this to cost about twice as much as non-rural small districts. The study team determined that these changes would result in an overall 9.6% increase in per-student funding from the small district.

Developing Cost Estimates

Once the panels completed their work, the study team undertook the process of costing out the above resources, which primarily involved determining salaries associated with the identified FTE positions and applying school and district-level per student costs. The study team used statewide average salaries to cost out all the schools and districts built in the PJ study. The salary data was received from CDE for numerous personnel positions which can be viewed in Appendix 5, Section D. As the landscape analysis shows, salaries are not consistent across the state, but the study team felt using average salaries, with a later cost adjustment for district factors, was a good foundation for creating a compensation level adequate for attracting and retaining staff. To further build the adequate compensation level, the study team included a 22.85 percent benefit rate which includes the costs of PERA and Medicaid. Additionally, an average health/dental/vision cost of $13,453 was estimated, based on the assumption that all staff in public schools should have access to similar benefits as state employees.

Professional Judgment Total Base Costs and Weights

Combining the school and district-level costs by district size allowed the study team to calculate a single school-level base cost figure for each representative district. To do this, the study team used school-level cost figures for each grade configuration and the distribution of students at each grade level. The study team then added district-level costs to develop total base costs and weights for each identified student population. These figures are shown in Table 5.19.

Weights represent the resources needed above the base for student and district characteristics. For example, if the base cost for a student is $10,000 and the additional needs related to at-risk are $3,000, then the at-risk weight is 0.30. The district serving this at-risk would, therefore, receive a total of $13,000 to provide an adequate education for that student.

Table 5.19: Professional Judgment Total Base Cost and Additional Weights

District Size	Very Small	Small	Moderate Small	Moderate Large	Large
Base	$30,944	$18,892	$14,786	$12,607	$11,280
Weights					
At-Risk					
25% Concentration	0.14	0.23	0.28	0.29	0.29
55% Concentration	0.18	0.26	0.32	0.35	0.37
75% Concentration	0.26	0.26	0.40	0.42	0.44
ELL					
WIDA 1&2	0.42	0.44	0.45	0.46	0.49
WIDA 3&4	0.27	0.25	0.32	0.32	0.33
WIDA 5&6	0.08	0.15	0.17	0.16	0.15

As Table 5.19 shows, the per-student base cost rises from a low of $11,280 in the largest district to $30,944 in the very small district. At-risk weights are the lowest at the 25 percent concentration, ranging from 0.14 to 0.29. The 50 percent concentration weights range from 0.18 to 0.37, and the 75% concentration weights range from 0.26 to 0.44. All the at-risk weights are lowest in the very small district and rise in the larger districts. The ELL

WIDA 1&2 weight ranges from 0.42 to 0.49, WIDA 3&4 weight ranges from 0.25 to 0.33, and WIDA 5&6 weight ranges from 0.08 to 0.17.

Chapter Six: Evidence-Based Approach Study

The Evidence-Based Model

The Evidence Based (EB) Model is one of the approaches used to develop an estimate of an adequate level of resources for Colorado K-12 schools. Developed by Allan Odden and Lawrence Picus, the EB Model links strategies and resources in high-performance schools to state school funding formulas. Over the past two decades, Odden and Picus have used the EB Model to conduct adequacy studies in over 20 states. The EB Model relies on a school improvement model that allocates resources for educational strategies that current educational research finds are linked to large increases in student learning and is described in more detail in the full EB report contained in Appendix Six of this report.

The EB approach to school finance adequacy develops a set of recommendations that can be used to determine a base per student figure and related student weights for students from at-risk backgrounds, for English Language Learning (ELL) students, and for students with mild and moderate disabilities. This base per student figure would allow each "normal" size school to offer students an equal opportunity to meet state performance standards.

As one of the four approaches used to identify adequate spending levels for public schools, the EB Model identifies all the elements high-performing elementary, middle, and high schools need to provide every student an equal opportunity to learn according to the state's performance standards. In addition, the model provides resources for central office administration and the operation and maintenance of school buildings.

The model does not include funds for transportation, a full food services program, or capital construction. More specifically, upon a wide variety of research on individual programs, including more recently randomized controlled trial research, the EB Model includes recommendations for the following elements:

- Staffing for core programs, which include full-day pre-school and kindergarten, core teachers, elective/specialist teachers, substitute teachers, instructional facilitators/coaches, core tutors, core guidance counselors and nurses, supervisory aides, librarians, principals/assistant principals, and school secretarial staff;
- Dollar per student resources for gifted and talented students, PD, instructional materials and supplies, benchmark and short cycle assessments, computers, and other technology, and extra duty/student activities;
- Central office functions include maintenance and operations, central office personnel, including school computer technicians, and non-personnel resources;
- Resources for struggling students including at-risk tutors, at-risk student support, extended day personnel, summer school personnel, ELL personnel, special education, career and technical education, and alternative schools; and
- Personnel compensation resources, including salary levels, health insurance, benefits for workers' compensation, unemployment insurance, retirement, and Medicare (Colorado educators do not participate in Social Security and have a more robust state retirement programs).

The model relies on two major types of research:

1. Reviews of research on the effects of student achievement by individual educational strategies provided by the EB Model. This evidence has been strengthened in recent years by the growing number of RCTs conducted on the various elements included in the EB Model.

2. Case reports of schools and districts that have dramatically improved student performance over a four-to-six-year period – sometimes actually "doubling" student performance on state tests.

The EB school improvement model includes multiple educational programs and strategies that, if implemented by districts, can be expected to lead to large improvements in academic achievement for all students, as well as substantial reductions in student achievement gaps linked to demographic variables. The ten school improvement strategies underpinning the approach include:

1. Analyzing student data to become deeply knowledgeable about performance issues and to understand the nature of the achievement gaps in the school. The test score analysis first includes analysis of state test results and then, over time, uses benchmark and short cycle assessments (sometimes called formative assessments) to help tailor instruction to precise student needs and to identify and monitor interventions for struggling students.
2. Setting higher goals, including aiming to educate 95 percent of the students in the school to proficiency or higher on state exams, seeing that a significant portion of the school's students reach advanced achievement levels, and making significant progress in closing the achievement gaps linked to demographics.
3. Reviewing evidence on good instruction and effective curriculum. Successful schools often sunset their previous curriculum and replace it with a different, more rigorous, and research-proven, effective curriculum. Over time, they often create their own specific view of the effective instructional strategies needed to deliver that curriculum and expect all teachers to use those school-based instructional strategies.
4. Investing heavily in teacher PD, including intensive summer institutes and longer teacher work years. Successful schools provide resources for trainers and, most importantly, fund instructional coaches in all schools. These schools also provide time during the regular school day and week for teacher collaborative work groups to use student data and standards-based curriculum to improve instruction.
5. Providing extra help for struggling students and, with a combination of local, state, and federal Title 1 funds, providing some combination of tutoring in 1:1, 1:3, or 1:5 tutor-student ratio formats. Increasingly high performing schools provide high-dosage tutoring that over time also includes extended school days, summer school and English language development for all English Language Learning (ELL) students.
6. Creating smaller classes in early elementary years, often lowering class sizes in grades kindergarten through three to 15 students, citing research from randomized trials. Sometimes this includes small overall school size as well.
7. Restructuring the school day to provide more effective ways to deliver instruction. This can include multi-age classrooms in elementary schools and block schedules, double periods of mathematics and reading in secondary schools, and intervention blocks of time in elementary schools. This also includes student-free time for teachers to work in collaborative teams to create standards-based curriculum

units and the instructional strategies to implement them. Schools also protect instructional time for core subjects, especially reading and mathematics.

8. Strong leadership support is provided by the superintendent, the principal, and teacher leaders regarding data-based decision-making and improving the instructional program.
9. Fostering professional school cultures characterized by ongoing discussion of good instruction and by teachers taking responsibility for the student performance.
10. Bringing external professional knowledge into the school. For example, hiring experts to provide PD, adopting research-based new curricula, discussing research on good instruction, and working with regional education service agencies, as well as the state department of education.

In sum, the schools that have boosted student performance that we and others have studied, deployed strategies strongly aligned with those embedded in the EB Model. These practices bolster our claim that if such funds are provided and used to implement these effective and research-based strategies, then significant student performance gains should follow.

Estimating A New Base Per Student Figure and Student Weights

For this study, the study team developed an EB Model for Colorado by updating our research-based analysis of the resources needed for high-performing schools and estimating their costs. The resources included in our EB Model are summarized in Appendix Six. Once these resources were compiled, five Evidence-Based Professional Judgment (EBPJ) panels were conducted to review the model. Composed of educators from across the state, each panel member received a copy of our draft report and an explanatory video. During the four-to-five-hour panel sessions, the study team sought to understand how the proposed model would work in Colorado. Upon completion of the EBPJ panels, modifications were made to the Model to reflect the state's specific needs. The revised elements of the Colorado EB Model are displayed in Appendix Six. Table 6.1 provides a detailed summary of the resulting EB Colorado model resources, with resources modified from the base Model shown in **bold.** The resources described in Table 6.1 led to a base cost estimate and associated weights for at-risk, ELL, and special education students with mild and moderate disabilities.

Table 6.1. Summary of 2024 Colorado Evidence-Based Model Recommendations

Model Element	2024 Evidence-Based Recommendation
Staffing for Core Programs	
Preschool	Full-day preschool classrooms staffed at a class size of 1 teacher and 1 aide for every 15 students.
Full-Day Kindergarten	Full-day kindergarten program. Each K student counts as 1.0 student in the funding system.
Elementary Core Teachers/ Class Size	Grades K-3: 15 Grades 4-5/6: 25 (Average K-5 elementary class size of 17.3)
Secondary Core Teachers/ Class Size	Grades 6-12: 25. Average class size of 25
Elective/ Specialist Teachers	Elementary Schools: 20% of core elementary teachers Middle Schools: 20% of core middle school teachers High Schools: 33 1/3% of core high school teachers
Instructional Facilitators/ Coaches	1 Instructional coach position for every 200 students

Model Element	2024 Evidence-Based Recommendation
Core Tutors/ Tier 2 Intervention	One tutor position in each prototypical school (Additional tutors are enabled through at-risk and ELL student counts in Element 21)
Substitute Teachers	5% of core and elective teachers, instructional coaches, tutors (and teacher positions in additional tutoring, extended day, summer school, ELL, and special education)
Core Student Support Staff, Core Guidance Counselors, and Nurses	**1.5 counselor/student support** staff for every 450 grade K-5 students 1 counselor for every 250 grade 6-12 students **and an additional 0.5 support staff for the 450-student middle school and an additional 1.0 student support staff for the 600-student high school** 1 nurse for every 450 K-8 students and 1 nurse position for every 600 9-12 students. (Additional student support resources are provided on the basis of at-risk and ELL students)
Supervisory and Instructional Aides	2 for each prototypical 450-student elementary and middle school 3 for each prototypical 600-student high school
Library Media Specialist	1 library media specialist position for each prototypical school
Principals and Assistant Principals	1 principal **and 1 assistant principal** for the 450-student prototypical elementary school 1 principal **and 1 assistant principal** for the 450-student prototypical middle school 1 principal and 2 assistant principals for the 600-student prototypical high school
School Site Secretarial and Clerical Staff	2 secretary positions for the 450-student prototypical elementary school 2 secretary positions for the 450-student prototypical middle school 3 secretary positions for the 600-student prototypical high school
Dollar Per Student Resources	
Gifted and Talented Students	$25 per student
Intensive Professional Development	10 days of student-free time for training built into the teacher contract year, by adding five days to the average teacher salary $156 per student for trainers (In addition, PD resources include instructional coaches and time for collaborative work)

Model Element	2024 Evidence-Based Recommendation
Instructional Materials	$256 per student for instructional and library materials $60 per student for each extra help program triggered by at-risk and ELL students as well as special education
Short Cycle/ Interim Assessments	$25 per student for short cycle, interim and benchmark assessments
Technology and Equipment	$**350** per student for school computer and technology equipment
Extra Duty Funds/Student Activities	$360 per student for co-curricular activities including sports and clubs for grades K-12
Central Office Functions	
Operations and Maintenance	Separate computations for custodians, maintenance workers and groundskeepers, $1 per gross square footage (GSF) for materials and supplies, and $350 per student for utilities
Central Office Personnel/ Non-Personnel Resources	8 professional and 17 classified positions for a prototypical 3,900 student Central office. Additionally, $450 per student is provided for misc. items such as Board support, insurance, legal services, etc. **and an additional $100 per student to cover mandated school meals**
Resources for Struggling Students	
Tutors	1 tutor position for every 100 ELL students and one tutor position for every 100 non-ELL at-risk students.
Additional Student Support Staff	1 student support position for every 100 ELL students and one student support position for every 100 non-ELL at-risk students.
Extended Day	1 teacher position for every 120 ELL and for every 120 non-ELL at-risk students.
Summer School	1 teacher position for every 120 ELL and for every 120 non-ELL at-risk students.
ELL staff for English Language Learner (ELL) Students	In addition to tutors, extra student support, extended day and summer school, noted above, 1 ESL teacher position for every 100 ELL students.

Model Element	2024 Evidence-Based Recommendation
Special Education	• 8.1 positions for every 100 students, which includes: ○ 7.1 positions per 1,000 students for services for students with mild and moderate disabilities and for the related services of speech/hearing pathologists and/or OT, PT. This equates to approximately one position for every 141 students. ○ 1.0 psychologist positions for 1,000 students (included in the Central Office) • This recommendation results in the following resources at prototypical schools: ○ 3.20 special education positions for every 450-student elementary school ○ 3.20 special education positions for every 450-student middle school ○ 4.25 special education positions for every 600-student high school 100 percent state funding for services for students with severe and profound disabilities, minus federal Title VIb funds, capped at 2% of all students
Career-Technical Education (CTE)	$10,000 per CTE teacher for specialized equipment
Staff Compensation Resources	
Staff Compensation	For salaries, Colorado statewide average for all EB staff positions For benefits: we added state retirement, health insurance, Medicare, workers compensation and unemployment insurance.

To estimate an adequate base per student figure using the EB Model and its Colorado modified recommendations, the team developed an Excel-based simulation that takes all the EB Model's recommendations, applies them to prototypical elementary, middle, and high schools, as well as the district central office and produces a base per student figure, as well as student weights for special education, at-risk students and ELL. These figures and weights can be used in the state's funding formula to generate adequate school resources for each school district in Colorado.

The model uses the state's basic student count and its at-risk and ELL student counts. To produce the EB Model's Base per student figure, the Excel simulation uses the core numbers and ratios provided in Table 6.1 and applies them to a prototypical school district of 3,900 students organized into four prototypical 450-student elementary schools, two prototypical 450-middle schools and two prototypical 600-student high schools.

Personnel costs are critical to make these estimates. The model included staff salary and benefits data described in the PJ Panel chapter (Chapter Five). Since the department did not have salary information for operations and maintenance staff, the study team used data from a combination of the websites of Indeed, Talent.com, ZipRecruiter, and Salary.com to produce rough estimates of median Colorado salaries for maintenance staff (plumbers, carpenters, and electricians), custodians and grounds keepers.

Evidence-Based Adequacy Estimates

With these compensation and benefit figures, the adequate base figure is estimated to be $11,387. Adjustments for students with special needs are as follows:

- **Assuming 50% of eligible ELL students participate in after school and summer school programs, the ELL weight is 0.38 ($4,366) for ELL students.**
    - If 100% of eligible ELL students participate in after school and summer school programs, the ELL extra weight is 0.51, which is $5,818.
- **Assuming 50% of eligible at-risk students participate in after school and summer school programs, the at-risk extra weight is 0.30 ($3,435) for ELL students.**
    - If 100% of eligible ELL students participate in after school and summer school programs, the at-risk extra weight is 0.43, which is $5,818.
- **For students with mild and moderate students with disabilities, the combined extra weight is estimated to be 0.60, which is $6,780/11,387.** Further detail is provided in Chapter Seven, the special education study that disaggregates this figure into separate weights for students with mild disabilities and students with moderate disabilities.
    - The EB model recommends that the state provide 100 percent of the costs of providing services for students with severe and profound disabilities, estimated to be two percent of the total student population. The cost of this recommendation is provided in the special education report.

Chapter Seven: Colorado Funding for Special Education

In addition to the two secondary adequacy studies (PJ and EB), the study team performed a separate special education study to better understand the nuances of the Colorado formula and the funding strains districts face in providing special education services.

Current Special Education Funding in Colorado

At the state level for special education, Colorado provides additional funding under the Exceptional Children's Educational Act (ECEA), which supplements base funding by allocating resources specifically for students with disabilities. These funds are allocated through a tiered system based on the severity of disabilities and the number and needs of students with Individualized Education Plans (IEPs). The formula uses the actual count of students with disabilities reported to the U.S. Department of Education from December 1 in the *prior fiscal year*. Funds are distributed to Administrative Units (AUs), which can be a school district, a Board of Cooperative Educational Services (BOCES), or a combination of school districts.

Currently, an AU receives funding for their special education students through a tiered approach, with each tier building on the other. The tiers are Tier A, Tier B, and Tier C.

Tier A is funded first and provides a fixed amount of $1,750 per student with a disability.

Tier B funding is based on each AU's proportion of students identified with one or more specific, more significant disabilities relative to the total number of students statewide with these disabilities. The disabilities for Tier B funding include:

- visual impairment, including blindness;
- hearing impairment, including deafness;
- deaf blindness;
- serious emotional disability;
- autism spectrum disorders;
- traumatic brain injury;
- multiple disabilities; and
- intellectual disability.

The amount of funds available for Tier B depends on the amount remaining after Tier A has been funded. The funds are distributed to AUs based on their proportion of students in the Tier B categories.

Colorado also provides supplemental funding to districts for students who require exceptionally high-cost services. High-cost, or Tier C, reimbursement is funded through a $4 million fund managed by Colorado's Special Education Fiscal Advisory Committee (SEFAC) that allocates funds for in-district services and out-of-district placements ($2m for in-district, $2m for out-of-district).

Tier C, or high-cost funding, is awarded through a voluntary application process for funds from the SEFAC, considering an AU's ability to finance high-cost programs. The eligibility threshold to receive reimbursement is $40,000 per student for high-cost, out-of-district placements and $25,000 per student for high-cost, in-district placements. Applications for high-cost funding are funded based on two criteria:

1. Costs must be greater than in-district and out-district services thresholds
2. Districts are ranked and given priority based on financial impact, i.e., the district's annual expenditure for a student's special education program, less applicable revenues, and the percentage those expenditures represent of the district's audited total expenses.

This funding is intended to offset the financial burden of providing intensive services, for example, one-on-one aides, specialized equipment, or intensive near full-day special education support.

School districts rely on federal, state, and local revenue to pay for total special education costs. Currently, state and federal funding in Colorado does not fully cover the cost of special education; therefore, districts are required to make up for the shortfall. According to SEFAC's 2022-23 Annual Report, the total cost of special education spending in Colorado in 2021-22 was about $1.2 billion. School districts had to cover 65% of this, or a total of about $800 million, from their district budgets due to unfunded expenditures for special education.

It's important to note that a new funding formula (not exclusive to special education) is being phased in over the next six years under HB24-1448. The HB24-1448 increases support for special education students. Under this legislation, student weights for special education will be set at 25%, an increase from previous allocations. Once fully funded, an additional $240 million will be allocated in the formula for special education students. These adjustments are expected to drive more resources to districts that historically lacked sufficient funding.

Conducting Interviews and Focus Groups

As part of the special education study for the larger Colorado Input-Based Financial Adequacy Study, the study team hosted 18 interviews and focus groups with stakeholders from across the state. The stakeholders included district superintendents and special education directors from 15 different BOCES and districts of various sizes, as well as special education advocates and experts from charter school associations and the Center for Learner Equity.

These discussions provided an understanding of how districts serve students with disabilities and what challenges the current funding formula presents for special education. The conversations aimed to understand whether special education funding is equitable, sufficient, and transparent.

Key Takeaways

The following takeaways were derived from research, interviews, stakeholder focus groups, and the experiences of special education experts and advocates.

Special education funding is insufficient to cover the costs of services for students with disabilities.

Although AUs, through school districts or BOCES, are mandated federally by The Individuals with Disabilities Education Act (IDEA) and from the state level with the ECEA to identify and deliver special education services to students with disabilities (between the ages of three and 21), current funding does not fully cover the cost of special education.

The combined base and tier funding amounts are too low to adequately cover the required resources, services, and unanticipated costs. As noted above, AUs spend nearly $800 million more than they receive for special education services.

Several factors contribute to the gap between special education funding and special education costs.

These factors include student counts, unexpected costs, inflation, high-cost reimbursements and windshield time; each are described below.

Student Counts

Underfunding of special education is exacerbated by the fact that funding allocations are based on the prior year's student counts, while the number of students with disabilities in Colorado has been steadily increasing over the past few years. This increase in students with disabilities follows a similar national trend: nationwide, there are more students with disabilities now than at any time in the past[17]. The lag in calculating special education enrollment and associated costs does not account for these increases in special education enrollment.

Unexpected Costs

The current formula does not include any provisions for funding unexpected costs that can arise during the school year, such as transportation needs, specialized equipment, legal fees, or students with significant needs enrolling in an AU during the school year. In outlier cases, a single new family can increase costs midyear by $100,000 or more, which is substantial for all districts, particularly small or midsized ones.

Inflation

The Bureau of Labor Statistics inflation calculator[18] suggests that the current $6,000 cap for Tier B calculated in 2006 would be equivalent to nearly $9,000 in today's economy[19]. Even if the cap for Tier B increases now with the tiered funding indexed to inflation, there is no assurance that districts will actually receive funds at the cap. In fact, history suggests otherwise. With a $6,000 cap in 2021-22, Tier B funding was $3,387 per student. The average excess cost for a special education student, above the general education cost, in fiscal year 2021-22 in Colorado was $11,369[20] .

High-Cost Reimbursements

High-cost reimbursement, or Tier C funding, is meant to provide additional support for students with the most severe needs, is also considered insufficient and inequitable. Respondents stated that its complexity, impact-based calculation, and threshold requirements often leave larger and more resource-intensive districts without sufficient support. Larger districts often face higher expenses and find it challenging to access Tier C funding. Whereas smaller, rural districts, on the other hand, tend to have more success securing these funds due to lower numbers, higher costs, and thus, greater impact per student.

Additionally, district audits are required as part of the high-cost reimbursement applications. These are costly and time-consuming, and there are often not enough auditors in the state to complete them in time to apply. Without completing audits, the district cannot apply for reimbursement.

[17] National Center for Education Statistics. (2024). Students with Disabilities. *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. Retrieved May 30, 2024, from https://nces.ed.gov/programs/coe/indicator/cgg.
[18] *CPI Inflation Calculator*. (n.d.). https://data.bls.gov/cgi-bin/cpicalc.pl
[19] The Special Education Fiscal Advisory Committee et al., 2024
[20] The Special Education Fiscal Advisory Committee et al., 2024

Appendix Seven, Section A summarizes the 2021-22 Tier C applications received and funded.

Windshield Time

Many small and rural districts noted that finding, hiring, and retaining enough high-quality related services staff locally to support their special education students can be challenging. This includes roles such as speech language pathologists, counselors, occupational therapists, and physical therapists. Most of these districts instead have turned to hiring sub-contracted part-time staff who often have to travel long distances to get to each school, with some schools on the hook to pay for travel costs such as drive time and even overnight accommodations in some cases. This approach can lead to higher costs for these districts compared to districts that can hire these roles locally.

While it is a standard solution amongst small and rural districts, hiring sub-contracted related services staff who must travel a long way to visit the school is not the only solution. Over the past decade, and especially since the COVID-19 pandemic, the availability of tele-support programs for schools has skyrocketed. Leveraging telehealth options for roles such as speech-language pathologists and counselors can reduce or eliminate the need to hire subcontractors with extensive travel time in these roles. Research shows that telehealth for services like speech therapy or mental health counseling is just as effective as in-person support for students and often comes at a fraction of the cost.

However, OT and PT services can be more difficult to provide virtually, so there may still be a small incremental cost for rural districts due to the extensive drive times for these roles.

Each of these factors contributes to and underscores a substantial funding shortfall in Colorado's ability to pay for the educational needs of students with disabilities. Schools and districts are forced to compensate for this shortfall by reallocating general education funds, cutting other programs, or seeking additional funding sources. With the number of students with disabilities steadily increasing, this gap in funding further exacerbates challenges, leaving districts scrambling to meet growing needs with limited or decreasing resources.

This underfunding not only places significant financial pressure on districts but also threatens the ability of schools to provide the legally mandated support services and accommodations required by students with disabilities under IDEA.

Recommendations for Colorado's Special Education Funding Formula

Set the foundation for a robust, adequate funding formula.

When structuring the state funding formula for special education, there are several foundational principles to consider to ensure equity, adequacy, and transparency. A robust funding formula does five things:

1. **Acknowledges that special education and general education dollars do not work in silos**. A well-designed funding formula recognizes that all students, including students with disabilities, receive the base funding amount per student and that students with disabilities can and should benefit from general education dollars. Many of the best teaching and learning practices for supporting students without disabilities are also best practices for supporting students with mild-to-moderate disabilities. Students with disabilities, for example, should receive reading support from a general education reading specialist who is not funded by special education dollars.

2. **Covers the total incremental cost of providing special education services statewide.** The amount provided should fully cover the incremental costs of providing special education services to all students who need it statewide while encouraging cost-effective best practices. The financial risk for special education services should not be placed on schools and districts.

3. **Provides transparency, consistency, and the ability to forecast.** A sustainable formula offers transparency, consistency, and predictability for districts. Schools must be able to forecast their funding to plan their budgets effectively, especially as the costs of supporting special needs students can change yearly and throughout the year.

4. **Allows for real-time adjustments.** It is unrealistic to think that every special education need can be predicted at the start of the school year based on last year's information. Incorporating a mechanism for real-time adjustments to cover unexpected costs during the year (e.g., for new students transferring in, unexpected upticks in enrollment, etc.) is essential to prevent shortfalls, particularly in smaller districts where a few high-cost cases could overwhelm the budget.

5. **Reflects the critical importance of high-cost reimbursement for schools.** An efficient and effective high-cost reimbursement process is critical. When districts can't predict their reimbursements or aren't always granted full reimbursement, many are hesitant to apply or forced to shoulder the financial load themselves. Reimbursements are critically important for smaller schools whose budgets can be disproportionately affected by a single costly case.

Establishing a need-based weighted approach for students with mild and moderate needs.

The most efficient and effective approach for structuring a special education formula is to assign weights based on intensity of need. Simply put, some students have small needs for incremental services, others have greater needs, and a few have very significant needs. How many of each type of student is in an AU can vary, thus funding allocations should vary based on these differing needs.

Unfortunately, the federal disability category is not an excellent proxy for level of need. Many formulas that assign weights by disability category ignore the fact that these categories can overlap, are often ambiguous, and a single category can include students with mild, moderate, or severe needs.

In one school, a student might be identified as having Other Health Impairments (OHI), but across town in a different school, that same student would have been identified with Specific Learning Disability (SLD).

Even within a single disability category, the needs of the students can vary widely. For example, the cost of supporting a student on the Autism spectrum can range from $2,000 to $100,000 annually, depending on the intensity of their needs. Assigning one fixed weight to a category like autism spectrum disorders does not reflect this range. Funding should be driven by the actual services required based on the intensity of student needs, not by predefined disability categories.

Measuring Intensity of Need

There are three possible options for measuring the intensity of need for a special education funding formula.

1. **Tracking Actual Service Costs**: Districts can track the services provided for each student with an IEP to determine the total cost (or approximate cost) of special education services. This involves factoring in hours of service, group size, and cost per hour based on staff salaries and other expenses.
2. **Service Hours**: Student need can be measured based on the person-hours of special education services they receive on a weekly basis based on their Individualized Education Plan (IEP), and then creating buckets or tiers of service hours each with their own weight.
3. **Educational Environment**: Schools can look at students' educational environment and level of integration into the general education setting as a useful proxy for measuring the intensity of need. Students would be grouped using the educational environment categories that already exist (i.e., separate school, in regular education >80% of the time, 79% - 40%, and <40%), and each group would be assigned a relevant weight.

For any of these options for measuring the intensity of need, it can be advantageous and cost-neutral statewide to have separate weights for students with mild disabilities versus those with moderate disabilities.

The EB model calculates funding for students with mild or moderate special needs based on the incremental costs to provide best practice special education services, robust general education supports in core instruction, and effective tier 2 intervention. The model also assumes that ten percent of all students statewide have a mild or moderate disability. The special education study team's analysis validates this methodology and calculations. The 10 percent identification rate also aligns to current trends and practices in the state based on current special education enrollment as reported by the state[21].

The category "mild and moderate" covers a wide range of students, and some districts, especially small districts, may have an above-average number of students with moderate special needs, while others may have fewer than average. This can create financial hardships for those with more students with greater special needs.

While the combined incremental cost is $6,780 per student with a mild or moderate disability, the study team would recommend two weights, not one for this category of student:

- Mild disability incremental cost of $4,996; and
- Moderate disability incremental cost of $12,490.

Based on available data, 7.5% of all students would be expected to have a mild disability, and 2.5% of all students would be expected to have a moderate disability. Both models calculate a total incremental cost to serve students with mild-to-moderate disabilities of approximately $600 million.

Formula Weights

The funding model should provide additional funds based on the number of students with either a mild disability or a moderate disability in the amounts of $4,996 and $12,490 respectively, up to statewide caps of 7.5% and 2.5% of total enrollment.

[21] The Special Education Fiscal Advisory Committee et al., 2024

Covering the costs of students with severe needs.

The special education study team's work aligns with the theory of action from the EB model, in which the state should fully reimburse the cost of serving students with severe special needs, including transportation. These students represent large per-student costs, and their numbers vary from district to district. Even a handful of new students can create significant financial hardship for small districts. It is more reasonable for the state to take this risk as it is better positioned to manage the costs.

The EB model assumes two percent of all students meet the definition of students with severe needs, which aligns with national trends and the research of the special education study.[22] The EB model caps such reimbursement at two percent of enrollment and assumes that incremental spending on students with severe needs is roughly equal to spending for students with mild-to-moderate special needs. The special education work accepts these same assumptions. To our knowledge, no available data breaks out Colorado spending for students with severe needs separately from other students with special needs.

Currently, just over two percent of all students are served in out-of-district schools in the state. In a best practice model, this figure would be closer to 1.6% out-of-district and 0.4% in districts. In rural and small districts, the two percent figure is reasonable, but in larger districts, somewhat less than two percent has been achieved in other states.

The study team anticipates that the total cost of serving students with severe special needs would be $676,000,000, which is slightly more than the amount for students with mild-to-moderate special needs.

It is worth noting that current funding provides minimal support for students with severe needs with nearly all the risk on the districts. Tier C reimbursement, which addresses these high-cost students, is currently only $4 million, or just six percent of the total estimated cost.If the state takes on the role of funding high-needs students, it should and could also take on a larger role in negotiating statewide rates for out-of-district programs and supporting the expansion of shared and in-district programs, which are less costly, more inclusive options for students.

Comparison of Models

The following table outlines the forecasted costs based on each model, as well as the current funding and statewide spending. The EB and special education recommendation models use the same assumptions and methodology, and any differences are due to rounding. Both models assume about 880,000 students statewide.

Table 7.1: Comparison of Funding Formulas, Current Funding, and Statewide Spending (approximate)

SPED Category	# of Students (%)	EB Model Forecasted Costs	SPED Study Forecasted Costs	Current State Funding	Current Statewide Spending
Mild	66,000 (7.5%)	$596,640,000 (combined)	$329,736,000	$213,080,000 (combined)	$1,231,350,000 (total)
Moderate	22,000 (2.5%)		$274,780,000		
Severe	17,600 (2.0%)	N/A	$676,000,000	$4,000,000	
Total	**105,600 (12%)**	**$596,640,000**	**$1,280,516,000**	**$430,000,000**	**$1,231,350,000**

*Includes additional state funding for Child Find ($2,886,287), Educational Orphans ($163,486), and Preschool SPED from Finance Act ($32,776,269), as well as federal funding ($179,199,757)

[22] National Center for Education Statistics. (2024). Students With Disabilities. *Condition of Education*. U.S. Department of Education, Institute of Education Sciences.

Current funding for special education, including federal funding, is just about $430 million. This includes funding to cover students with severe needs. This leaves a substantial shortfall in funding compared to both models' projections and the current level of spending by districts statewide.

Both models also reflect the importance of supporting and funding best practices that will improve outcomes for students with disabilities. Research shows that how resources are spent is equally as important as the total amount spent[23]. Decades of research have highlighted specific best practices that are highly effective for raising achievement for students with mild and moderate disabilities, including:

- A Focus on High-Quality Core Instruction;
- Additional Time for Learning; and
- The Importance of Content-Strong Teachers.

The EB model and special education study recommendations have been intentionally designed to support these best practices. The EB model allocates funds for instructional coaching, a proven method for enhancing the quality of core instruction. Additionally, it funds teachers' dedicated planning time, allowing for more cohesive and refined instruction, benefiting both general and special education students.

The EB and special education models also allocate significant funding for general education interventions, including reading teachers, which support high-quality core instruction for all students. The models also incorporate funding sufficient intervention staff to provide extra-time intervention for all students who need it, including students with disabilities, to ensure they have extra time to learn yet to be mastered skills and content. Importantly, the models prioritize certified teachers over paraprofessionals for intervention support, which ensures that students who are struggling academically receive support from educators with strong content expertise. Both models reflect the importance of implementing special education best practices to help all students thrive and were designed to be able to fully fund these practices.

[23] Hawkins, B. (2024, August 6). Researchers: Higher special education funding not tied to better outcomes. *The 74*. https://www.the74million.org/article/researchers-higher-special-education-funding-not-tied-to-better-outcomes/

Chapter Eight: Cost of Living Adjustments

Introduction

States utilize cost adjustments in school finance formulas to account for differences in districts' costs. These adjustments primarily adjust for personnel cost differences and help equalize purchasing power across different districts to support the ability to hire necessary staff. Three basic approaches are used as part of school funding formulas: hedonic wage indices, cost of living indices, and comparable wage indices. Only 14 states currently utilize cost adjustment as part of the state's school finance formula. When identifying an adjustment to include in a formula, states need to decide what cost differences need to be addressed, the availability of data to identify these differences, the difficulty level to update any adjustment, and the way to apply the factors derived from a specific approach. This chapter first examines the approaches that have been developed and which states currently use these adjustments to provide context for Colorado's approach and potential alternatives. Next, the study team examines Colorado's current approach, identifying the philosophy of the state's adjustment. Then, the study team models the Comparable Wage for Teacher index for Colorado and compares the results to Colorado's current approach. Next, the study team examines alternative approaches to examining differences in the costs of goods that districts may face. Finally, the study team recommends an alternative cost adjustment approach for Colorado.

Approaches and Use in States

The three approaches to calculating regional costs have different philosophical basis, utilize different data, and require different levels of effort to update in a timely manner.

Table 8.1: Regionalization Approaches by State

Approach	States that Utilize
Cost-of-living	Colorado, Wyoming*
Hedonic Wage	Alaska, Maine, Texas, Wyoming*
Comparable Wage	Illinois, Florida, Maryland, Massachusetts, Missouri, New Jersey, Nevada, New York, and Virginia

**Note, Wyoming uses the "best of" two approaches.*

Hedonic Wage Index

Hedonic wage indices are calculated by breaking down variations in current wages due to several different identifiable variables. As a result, hedonic wage indices can capture variation due to both geographic location characteristics and student characteristics[24]. A regression analysis divides the observed variation in teacher salaries into two groups: The first are factors that can be attributed to the school district's control (i.e., teacher demographics, teacher assignments), and the second are factors that are not attributed to the school district's control (i.e., cost of living).

[24] APA, Nevada School Finance Study

Following Chambers (1998), a hedonic wage index for teachers is created by estimating the following equation:

$$LnTeacherSalary_i = \beta_T T_i + \beta_D D_S + \beta_C C_S + \beta_G G_i + \varepsilon_i$$

In this equation,

- The dependent variable is the natural log of a teacher's annual salary;
- Ti is a vector of characteristics of teacher i (the most commonly included are gender, race, education, certifications, experience, and any other available measures of teacher quality, such as measures of effectiveness or test scores);
- DS is a vector of discretionary cost/working condition variables in district S (such as class size);
- CS is a vector of uncontrollable cost/working condition variables in district S (the most commonly included are the percentages of high-need or at-risk students);
- GI is a vector of characteristics for the region that teacher i lives and works in (such as housing prices and area amenities like weather, crime or population density); and
- εi is an idiosyncratic error term.

The resulting coefficients are then used to predict a wage for an average teacher (with state average values of the variables in Ti) in each district, holding the discretionary cost variables constant.[25] There are benefits to this approach as the model will be able to estimate the impacts of specific variables that may be of interest to the state, such as the impact of student characteristics on teacher wages for a given district. However, the ability to estimate the effects of these district specific variables also raises concerns about validity. As the model uses directly observed teacher salaries, which are subject to district control, any variation in teacher salaries due to variables that are not specifically included in the model will either (1) be relegated to the error term (and thus left out of the resulting index values), or (2) create a bias (potentially of unknown direction and size) in the coefficients of included variables.[26] Additionally, while the equation above reflects the variables most often used, ultimately the variables included are up to the discretion of the analyst creating the index and, in an effort, to provide a more precise index, the model will likely become larger and more complex. This creates challenges for maintaining and updating the model over time given the statistical complexity as well as the data requirements. It is likely that the data required must be gathered from multiple sources, and sometimes, can only be gathered through individual data requests. There is also a higher chance that data will either stop being collected or that specific variables will change or be defined differently by the collecting agency.

While Maryland utilized a hedonic-wage approach for many years, it recently moved to a comparable wage index (CWI) partly due to the high effort required to update the hedonic model. In a 2016 study, a research team updated estimates of the original indices by compiling data from Maryland State Department of Education (MSDE) district demographic files; MSDE staff data files; MSDE certification data files and certification testing files; the Bureau of Labor Statistics; Maryland Department of Labor; National Oceanic and Atmospheric Administration; Maryland State Police; Public School Construction Program; decennial Census of Population and Housing; State Department of Assessment and Taxation; and individual districts. Estimating the full index required collecting updated data from all these different sources, some of which were difficult to access or required submission of individual requests for data.

[25] Ibid
[26] Ibid

The 2016 report recommended that a comparable wage approach could be used instead of the laborious hedonic approach, noting that it is "much easier to update and keep current". [27]Additionally, in Texas, the current Cost of Education Index (CEI) attempts to adjust for varying economic conditions across the state, based mainly on the district's size, the teacher salaries of neighboring districts, and the percentage of low-income students in the district in 1989–90. The index has not been updated since then.[28]

Cost of Living Adjustment (COL)

Currently utilized only in Colorado and Wyoming, a cost of living (COL) adjustment is created by computing the price of goods associated with a given location. The primary good included is housing costs, but other goods, such as transportation, services, and taxes, are often included as well. While this approach has the benefit of being straightforward to calculate and update over time, it presents several drawbacks as well. Most notably, this approach does not consider area amenities that may impact wages needed to attract and retain workers[29]. As a result, a COL adjustment based primarily on housing and other consumer costs will tend to overestimate the wage differential needed to attract and retain school employees in locations with high COL and underestimate it in locations with low COL.

Comparable Wage Index (CWI)

The most common approach states currently utilize is a Comparable Wage Index (CWI). CWIs capture regional differences in salaries of professionals who are comparable to educators but who are not educators to understand the differences in costs for school districts to pay teachers in each jurisdiction. By only including workers comparable to teachers and not teachers themselves, the CWI seeks to isolate this observed wage variation from district-made decisions.

While some states may rely on the public datasets to construct their formulas, other have created their own CWIs. Florida, for example, has leveraged academic expertise to create a Florida-specific CWI, the Florida Price Level Index (FPLI). This comparable wage index (an index of the price of labor) is created using wage data by county (Florida's counties are coterminous with school districts) and detailed occupations.[30]

CWI Strengths

- A CWI clearly measures costs beyond school district administrators' control;
- No risk that a CWI confuses high-spending school districts with high-cost school districts;
- Appropriate regardless of the competitiveness of teacher labor markets. If a lack of competition in the teacher market distorts teacher compensation patterns, then cost indexes based on teacher compensation will be biased, but a CWI will not;
- A CWI reflects differences in amenities and the cost of living. It is a more complete price index than the COL indices; and
- COL indices like the Wyoming COL Index have been criticized for overestimating labor costs in locations where attractive amenities make it a desirable place to live and work.

[27] APA, A Comparable Wage Index for Maryland

[28] https://tea.texas.gov/finance-and-grants/state-funding/additional-finance-resources/other-school-finance-topics/cei-one-pager-2017-10.17.2018.pdf

[29] APA, Nevada School Finance Study

[30] 2023 Florida Price Level Index, 2023fpli

CWI Weaknesses

- The CWI is a labor cost index, and labor cost is only part of the total cost of education;
- The labor cost model underlying any CWI presumes that workers are mobile. If moving costs or other barriers to moving slow worker migration, then "labor cost may temporarily diverge from what would be expected given local amenities and the local COL";
- CWI is constructed assuming that educators and the non-educator population under analysis are comparable with respect to their tastes for amenities and the COL. If comparability breaks down, then a CWI becomes a poor proxy for the cost of educator labor; and
- A CWI is based on local labor markets, not school districts. It is not designed to capture variations in cost across school districts within a single labor market, such as those cost differences that might be attributable to working conditions in specific school districts.

Comparable Wage Index for Teachers (CWIFT)

Most states that use a cost adjustment use CWI adjustment, and many school finance experts believe that the CWI is the best current approach. The National Center for Education Statistics (NCES) has created CWI approaches since 2006. In 2025 NCES released the Comparable Wage Index for Teachers (CWIFT). The CWIFT is designed to identify geographic variation in wages for college-educated workers outside the education field after controlling job-related and demographic characteristics. It measures wage and salary differences for college graduates, using an analysis modeled after the baseline analysis used to construct the original CWI.

There are some notable differences between the CWIFT and the original CWI. The CWIFT uses data from the American Community Survey (ACS), which is different from the baseline CWI data source (the 2000 Census). This switch provides data that is updated by the federal government annually and expands the number of labor markets included from 800 to 1,570 local labor markets. The CWIFT provides a readily updated dataset that is publicly available for use by any state.[31] More differences between CWIFT and CWI are covered in detail in Appendix Eight

NCES representatives characterize CWIFT as the "next generation" of CWI and a CWI that is definitionally substantially similar to the original CWI methodology. Although there is an "experimental" descriptor on the CWIFT website, that terminology is an institutional label that prevents its interpretation as universal and absolute for various federal data applications. However, the label should not be interpreted as disqualifying for the CWIFT's consideration in this context. NCES does not consider CWIFT a research and development project any longer, with the publication of the data set nearly every year.[32]

A CWIFT factor is identified for each district in Colorado, but the figure shows the factor in relationship to the national average. The figures can be adjusted to make them more Colorado-specific, including rebasing based on Colorado's CWIFT average or having the lowest Colorado CWIFT figure as 1.0, similar to the rebasing work done for the 2025-26 COL factors described above. Appendix 8, Section B shows the current COL factor, the 2025-26 COL factor, the raw CWIFT figure, and the statewide average rebased CWIFT factor. This shows that current factors range from 1.0 to 1.65, while 2025-26 factors will range from 1.0 to 1.23. Raw CWIFT factors range from

[31] Ibid

[32] Afton Partners, Report on the Comparable Wage Index Component of Illinois' Evidence-Based Funding Formula

0.8 to 1.06, with most Colorado districts having CWIFT factors below 1.0. When rebased to Colorado average, the range is 0.91 to 1.20.

The study team modeled the impact of the adjustments based on the 2025-2026 proposed formula for the CWIFT figures adjusted to the Colorado context. Utilizing this model, the current 2025-2026 approach will result in roughly $1.45 billion in cost-of-living factor funding. While the Colorado average adjustment would result in $653M in funding if factors are applied both above and below 1.0 and $698M in funding if only factors above 1.0 are utilized.

Table 8.2: Cost Adjustment Distribution by Size Quintile

Size Groupings	Total Funding Amount by COL Factor HB24-1448	% of total adjustment	Total Funding Amount by CWIFT Rebased to State Avg. (Over 1 applied)	% total adjustment	CWIFT LEA Rebased to State Average Above and Below Applied	% total adjustment
Smallest	$3,850,796	0.3%	$325,841	0.0%	$(1,448,951)	-0.2%
Smaller	$9,165,894	0.6%	$1,194,806	0.2%	$(2,447,549)	-0.4%
Mid-Size	$26,294,403	1.8%	$4,800,511	0.7%	$(1,075,181)	-0.2%
Larger	$100,943,097	6.9%	$22,099,191	3.2%	$7,904,768	1.2%
Largest	$1,312,509,137	90.3%	$670,373,205	95.9%	$650,150,893	99.6%
Total	**$1,452,763,327**		**$698,793,554**		**$653,083,979**	

Table 8.2 shows how the distribution cost adjustment funds by size group between the three alternatives. The HB24-1448 adjustment allocates 90.3% of funding to the largest districts. Using the CWFIT rebased for the Colorado average but only applying factors above one, total funding decreases but it is redistributed more to the largest districts. All other district size groupings lose at least half of their overall share, with smaller districts dropping by a third. This redistribution is even greater when the CWIFT is applied both above and below one, with the smallest three size groupings all having a loss of funding and the largest districts receiving 99.6% of the total adjustment.

Colorado's Current Adjustment

Currently, the state uses a COL adjustment constructed by tabulating the cost of a specified collection of goods and services used by consumers in each community in a method called the "market-basket" approach. Differences among communities in the cost of a basket of consumer goods and services capture differences in the COL.[33] Per CO Code § 22-54-104 (2023), "The cost-of-living factor allowed for each district pursuant to this paragraph… reflects the differences in the costs of housing, goods, and services among regions in which districts are located. Such factor does not reflect any annual increase in the costs of housing, goods, and services caused by inflation." The 2024-25 school year is the last year the current cost adjustment approach will be used in Colorado, with changes to how the factor is applied being implemented for the 2025-26 school year.

[33] Options for Updating Wyoming's Regional Cost Adjustment, Options for Updating Wyoming's Regional Cost Adjustment

The state undertakes a COL factor study every two years to create an index for each district in Colorado. The process begins by assuming that a family in District A buys the same things as a family in District B and determining the difference in cost to buy those things in each district. Below is an overview of the process:

For the 2023 Colorado School District Cost of Living Study, one family (i.e., "benchmark household") is a family of three people with a total household income of $63,822, which is the average salary of a Colorado teacher with a bachelor's degree and ten or more years of experience.

1. We assume that the benchmark household purchases the same goods and services as a typical family of that size and income, according to the national Consumer Expenditure Survey (CES) conducted by the Bureau of Labor Statistics (BLS).
2. We select a variety of specific items to represent spending categories. For example, we select a banana to represent purchases of fruits and vegetables. These items comprise our market basket.
3. Then we collect prices for the items in the market basket from businesses or service providers (such as a utility) in each district.
4. We then account for geographic patterns in which people shop for retail items in the market basket, which may be in their district or in different districts.
5. Based on where people typically shop and how much items cost in each place, we determine how much each district's residents typically pay for the total market basket. This allows us to compare how expensive it would be for the benchmark family to live in each district.[34]

A district's COL is generated based on the composite cost of living level of where its staff live. It is not a COL adjustment of the costs districts face but an examination of the cost of living of staff for each district. This is an important distinction, as other cost adjustment approaches try to measure districts' personnel costs. Colorado's current approach does not focus on the costs of goods or services faced by districts.

Each district is assigned a COL factor, with no district receiving a factor below 1.0. Current adjustments range from 1.0 to 1.65. The adjustment is applied to only part of a district's costs, those estimated to be related to personnel costs. The current adjustment generates about $1.5 billion in funding in the system, or 16.1% of total financing.

Beginning in 2025-26, the state's approach to COL will be adjusted slightly. The general approach to identifying district COL factors will remain the same. Changes include rebasing the adjustment to the lowest COL district, no longer using the estimate for personnel/non-personnel costs, applying the COL factor directly, and capping the COL factor at no more than 1.23. The new approach would generate about $1.45 billion in funding if fully implemented.[35]

Appendix 8, Section A shows how the current 2024-25 adjustment impacts districts in Colorado based on different demographic factors. On average, the COL factors are higher in cities and suburbs, and lower in towns and rural areas. Districts with higher percentages of at-risk students have lower factors on average. When

[34] Corona Insights, 2023 Colorado School District Cost of Living Analysis

[35] HB24-1448

looking at the components of the current adjustments, personnel in rural/smaller settings face higher costs of goods, while personnel in urban settings have higher housing costs.

Adjusting for Districts' Cost of Goods and Services

In the study team's input-based adequacy study work, it was frequently mentioned that many districts face much higher costs of goods and services due to locale or setting. The current COL approach examines the costs of goods and services for personnel, but not for districts themselves. CWI adjustments also do not make these adjustments. While hedonic models can make these adjustments, as noted previously, the data burdens are high.

One approach developed in Nevada, the Nevada Cost of Education Index (NCEI), is a composite factor based on two elements. The first is the CWI for the percentage of district funding spent on wages, and the second is a cost of goods measure, based upon the Bureau of Economic Analysis (BEA) regional price parities (RPPs) "goods" Index, for the remaining non-wage portion of district funding, i.e., the regional cost differences in school districts associated with purchasing goods.[36]

Public School Finance Task Force

In 2023, a Public School Finance Task Force was convened to examine and make recommendations to the Colorado State Legislature concerning the state's school finance formula. The specific charge was to improve the formula by making it simpler, less regressive, more adequate, understandable, transparent, equitable, and student-centered.[4] The task force focused on six specific areas of the formula, one of which was the COL factor. This work was focused on making findings and recommendations regarding the recalibration of the COL factor, capping the COL factor, or alternative methods to account for the COL, including through categorical funding.[5]

As part of reviewing the COL factor, the task force analyzed the current impacts of the factor on the overall funding formula and distribution of funds to districts across the state. For FY24-25, including the COL factor, $1.5 billion in total program funding, or 16.1% of total program funding, will be allocated to Colorado districts. The task force noted that eliminating the COL factor would directly impact personnel cost factors since the COL is only applied to the portion of the base related to personnel. Additionally, eliminating the COL factor would mean that the size factor would be the only formula component to increase the base amounts provided to districts, ultimately decreasing the minimum funding per student. The project team completed a similar analysis of the COL factor, found in Appendix 8, Section B.

The Public School Finance Task Force reviewed and discussed possibly utilizing the CWIFT as part of their COL analysis. Ultimately, task force members "expressed support for recommending the legislature fund the identification of a new measure that better accounts for differences in educational costs but expressed uncertainty about the experimental nature of CWIFT and the lack of familiarity with the metric about Colorado-specific differences".[37]

Conclusion

Determining any new approach first requires identifying what costs the approach should adjust for and then determining the approach that best meets those needs. Ideally, the chosen approach would have a low data

[36] APA, Nevada Cost of Education Index (NCEI)

[37] S.B. 23-287 Public School Finance Task Force Report

burden, be transparent, and be predictable. The above sections outline the pros and cons of each approach based on the methodology used to create each adjustment, and as such, those takeaways are primarily rooted in economic theory. These are important takeaways to keep in mind, particularly as the methodology likely directly impacts implementation, as is the case with the statistical complexity of a HWI.

However, it is also important to acknowledge that those takeaways are only beneficial so long as the costs that the adjustment is accounting for are aligned with the intent of what the state is aiming to solve. For example, if a state is looking for a cost adjustment that will take their specific district characteristics into account as they relate to wages, CWI will not be able to do this; therefore, any economic theory that may support a CWI over an HWI becomes less relevant as the desired intent of the adjustment is not aligned with the CWI approach. In Table 8.3 on the following page, the study team summarizes the pros and cons of each approach as they relate to the findings of this study and, ultimately, the broader Colorado context.

Based on the findings across all components of this study, the study team's recommendation is for Colorado to move forward with the development of either a state specific CWI or a composite factor. Both options benefit from utilizing a CWI, which economic theory considers the superior approach and is the primary approach other states use. Additionally, each of these options provides the opportunity to develop a factor that leads to the specific needs of Colorado rather than utilizing an approach that is not fully applicable given the state context. This would also address one of the primary concerns of the School Finance Task Force's concerns with utilizing the CWIFT, as it lacked "Colorado-specific differences." [38]

It is important to note that any changes will likely have considerable impacts on districts, given the current adjustments have a large impact on funding. Therefore, the study team would recommend that the state considers a change with the adjustment when also implementing a new funding formula overall. This would help ensure that any dollars freed due to this change would be available for all students or through other targeted funding.

[38] S.B. 23-287 Public School Finance Task Force Report

Table 8.3. Pros and Cons of Each Approach Related to Colorado

Approach	Pros	Cons
Status Quo Cost of Living	• Maintains consistency in approach and transparency in 0methodology. • Straightforward to implement and update. • Requires no changes to legislation.	• Economic theory considers this approach inferior to a CWI. • Does not account for the cost of goods and services districts face. This is particularly important in the Colorado context as smaller, more rural districts often face higher costs but generally have lower COL. • Does not account for amenities that impact wages and, ultimately, a district's ability to attract and retain staff. The study team's community engagement highlighted the importance of teachers across all respondent types and locale types. High-quality teachers were consistently ranked as one of the most valued resources in a school and areas where additional funding should be targeted. Additionally, increased compensation was one of the highest-ranked ESSER investments to sustain.
Hedonic Wage Index	• Able to estimate the impacts of specific variables that may be of interest to the state, such as the impact of student characteristics on teacher wages for a given district.	• Statistically complex to develop, maintain, and update. • Data requirements can be onerous and often require requests and coordination across multiple agencies. • Agencies data collection methodologies and calculations may change over time, impacting the ability to update. • Would require updating CO legislation.
CWIFT	• "Next generation" of CWI39 • Readily available and updated dataset, with consistent and transparent methodology. • Viewed as superior by economic theory in comparison to COL. •	• Labor cost index based on local labor markers rather than school districts. • Does not account for the cost of goods and services districts face. This is particularly important in the Colorado context as smaller, more rural districts often face higher costs, but generally have lower COL. • Would require updating CO legislation.
State Specific CWI	• Measures costs that are beyond the control of school districts. • Can account for more state specificity than a traditional CWI, as with Florida's FPLI.	• Potential to be statistically complex to develop, maintain, and update depending on factor specification. • Data requirements could be onerous and require requests and coordination across multiple agencies. • Would require updating CO legislation.

[39] Although there is an "experimental" descriptor on the CWIFT website, that terminology is an institutional label to prevent its interpretation as universal and absolute for various federal data applications.

Approach	Pros	Cons
	• Viewed as superior by economic theory in comparison to COL.	
Composite Factor	• Utilizes CWI and "goods" index. • Measures costs that are beyond the control of school district administrators. • Can account for both labor costs and cost of goods in a given district. • Viewed as superior by economic theory in comparison to COL.	• "Goods" indices may not be available for all Districts, as with the BEA regional price parities in Nevada. • Would require updating CO legislation.

Chapter Nine: Final Recommendations

This chapter brings together all the components of the study into a final set of recommendations. The study team first identified a single set of input adequacy study parameters, including a base cost, adjustments for students with additional needs, and district characteristic adjustments. This was done by reconciling the results of the PJ and EB approaches with information from the other study areas. Then, the study team used these parameters to recommend how Colorado's school funding formula should distribute resources to districts. Finally, a comparison of current funding to the proposed formula is provided for each district in the state.

Input Adequacy Study Parameters

The study includes input adequacy recommendations from both the PJ (Chapter Five) and EB studies (Chapter Six), along with the information on special education funding levels. (Chapter Seven). This section uses the resource recommendations from those three chapters and integrates findings from the landscape analysis (Chapter Two), wealth and income analysis (Chapter Three), and the results of the statewide survey (Chapter Four) to identify a single set of adequacy parameters. Each central resource area is examined, and the differences are discussed between the EB and PJ approaches. The final recommendation in each area is identified based on comparing the two approaches, and the surrounding data from the other studies is included to either confirm the decision or modify the decision based on the additional context, where relevant.

Base Cost Resources

School Instructional Staff

Classroom Teachers. Both the PJ and EB approaches identified the same student-teacher ratios, which generated the same total number of classroom teachers across grade levels. The main difference between the two approaches was class sizes in the elementary grades, where the PJ had higher class sizes in the early grades but lower in the higher grades. On average, the total number of teachers needed remained the same regardless of approach. No adjustments were needed for total classroom teachers.

Specials Teachers (art, music, PE, world language, etc.). Specials teachers were the same for PJ and EB at the elementary and high school levels. In middle school, the PJ panelists identified the need for about 33% more staff beyond classroom teachers to ensure the ability to deliver a four-period block, while the EB model identified a lower ratio that was more similar to the elementary level. The final recommendation includes the 33% higher additional staff at the middle school level to ensure that a block schedule can be delivered. This is supported by results from the survey, in which course offerings were shown to be of high value, especially for community members.

Paraprofessionals. The PJ results identified paraprofessionals across all grade levels, while the EB approach did not identify paraprofessionals for students without special needs. The final recommendation does not include paraprofessionals in base funding and instead assumes that paraprofessionals will be factored into the special needs weights identified below.

Other Instructional Staff. The two approaches recommended different types of personnel but generally the same total number of instructional coaches, teachers, tutors/interventionists, librarian media specialists, Gifted and Talented/Assessment coordinators, and other certified instructional support personnel. For the final recommendation in this area, the PJ resources were lowered to reflect the balance of including higher administrative resources than identified in the EB model.

Student Support Services

Counselors/Social Workers/Other Certified Student Support Personnel. The EB and PJ approaches differed most in identifying student support services such as counselors, psychologists, social workers, and other behavioral health positions. The EB recommendations identified resources only for counselors at the school level and at lower overall levels than the PJ, whereas the PJ recommendations included a broader range of professionals. Results of the survey identified social and emotional needs as a high priority for all constituents and an area of need for funding. The final recommendation provides a broader range of positions at all levels and resourced at levels closer to the PJ recommendations.

School Administration

Administrators. The PJ and EB approaches identified assistant principals at all school levels, with the baseline EB model modified to add assistant principals to address the Colorado context. The final recommendation provides assistant principals at the final EB model level.

Clerical. Clerical positions were higher at the PJ level, but the final recommendation will use the lower EB recommendations.

District Cost

Certified Personnel. The PJ and EB approaches varied in the number of total certified staff at the district level. EB did not identify a need for more directors and supervisors, while the PJ approach suggested that with the increase in staff at the district level, there would need to be more directors and supervisors. The final recommendation is slightly higher than EB and lower than PJ.

Classified Personnel. The PJ approach had more classified staff at the district level than the EB approach to support the increased certified personnel identified above. Due to the reduction in the number of certified staff at the district level, the identified classified staff is also reduced for the final recommendations.

Other Costs. Other district costs include costs not related to personnel that the district bears such as maintenance and operation, audit, and supplies and materials. The PJ approach produced higher additional costs than the EB approach. Upon discussion, the study team decided to use the EB approach number with a size adjustment applied to different-sized districts, as discussed later in this chapter.

The final set of base cost resources is identified in Table 9.1.

Adjustments for Student Characteristics

Weight(s) for At-Risk Students

The EB model identifies two weights for at-risk students: one if 50 percent of at-risk students participate in summer school and extended day (.30), and one if 100 percent of students participate (.43). The PJ approach identifies multiple weights based on a concentration factor with a low of .27 at 25 percent concentration, a high of .44 at 75 percent concentration, and weight of .34 at an average concentration (55 percent). **The final recommendation of the study team is for an at-risk weight of .35.** This figure is close to the PJ figure and recognizes that it is unlikely that all at-risk students would participate in summer school. The PJ approach identified an increase in weight based on concentration, and the landscape analysis showed that high concentrations of at-risk students in schools are correlated with lower student outcomes. Options for a concentration factor are discussed below in the formula implementation section.

Weight(s) for English Language Learners (ELLs)

Similar to its approach for at-risk, the EB model identifies two weights for ELL students: one if 50 percent of at-risk students participate in summer school and extended day (.38) and one if 100 percent of students participate (.51). The PJ approach examined ELL resources by WIDA level with weights of .52 for levels 1&2, .36 for levels 3&4, and .18 for levels 5&6. A single weight can be identified using a weighted average of students at each level for a weight of .39. **The final recommendation is an ELL weight of .40 if using a single weight or the PJ figures (.52, .36, and .18) if multiple weights are used.**

Weights for Special Education

The EB study recommended a level of additional funding for special education students that was supported by the special education study. The EB approach would provide a single weight while the special education study instead differentiated weights for mild and moderate at .44 and 1.1 respectively. **The study team recommends using the two weights (.44 and 1.1) and providing full reimbursement for severe special education students**.

Colorado Formula Recommendations

This section integrates all sections of the report to provide a recommendation for the full set of parameters for a possible Colorado funding formula. The recommendations rely on the study team's decades of experience designing formulas and bring together information from all aspects of this study, including a review of Colorado's current and upcoming formulas. This recommendation identifies the amount of funding required for districts to meet student needs; it does not make revenue/tax policy recommendations.

The study team recommends a traditional foundation formula with a base cost and adjustments for student and district characteristics. The adjustments for students with special needs are derived based on additional resources needed to serve these students and are represented as weights or the proportionate additional funding needed to provide those resources. Adjustments would not be multiplicative, or applied against each other. Instead, each adjustment is only applied individually to the base cost. Below, the weight and corresponding dollar amount per student are identified for each

student adjustment. Table 9.1 provides a comparison of the recommendations against the current formula and HB24-1448 formula. Figures are shown in 2025-26 dollars.

Recommendation 1

The state should provide a base cost of $12,346 for all students in Colorado. This is the reconciled base cost figure or $11,427 adjusted for inflation, assuming a 5.2% inflation rate for 2024-25 and 2.7% for 2025-26. This figure is $3,620 above the projected 2025-26 base amount shown in CDE's 2025-26 projections.[1] The study team would recommend adjusting the base figure by the state's inflation adjustment annually, as is done today.

Recommendation 2

At-risk students should receive a weight of .35 to meet their academic and support needs. This figure represents the amount of required funding per student of $4,321. Currently, the study team is not recommending a concentration factor adjustment for districts with higher concentrations of at-risk students. Data from the PJ and landscape analysis suggests such an adjustment might be needed, but the study team feels that decision should be made at the school level, not the district level. This could include targeting dollars for specific interventions or additional per student funding.

The .35 weight is higher than the new HB24-1448 funding formula's weight of .25 and the base weight of the current funding formula, .12. This recommendation would eliminate a concentration factor, which is included for any district with an above-average percentage of at-risk students in the current formula and for those districts with less than 7,000 students and at least 75 percent at-risk in the HB24-1448 formula.

Recommendation 3

ELL students should be funded through a multi-tiered system of weights related to their WIDA status including a .52 weight for WIDA levels 1&2, .36 for WIDA levels 3&4, and a .18 weight for WIDA levels 5&6. These weights represent funding per student of $6,420, $4,445 and $2,222 respectively. The study team does not recommend capping the number of years a student can be eligible for EL funding. If the state were to use a single weight, the study team recommends a weight of .40.

This approach creates differentiated funding that is more similar to the state's current categorical funding approach. It would increase the weight above the HB24-1448 formula (.25) and current formula (.08). The study team believes the new weight would allow for the elimination of the current categorical funding, which would free up funding in other areas.

Recommendation 4

A multi-tiered funding system should be implemented for special education students with mild disabilities funded with a weight of .44 and for moderate students with a weight of 1.1. The state would fully reimburse costs for serving severe students. The weights represent funding per student of $5,432 and $13,581 respectively. It is assumed that about 7.5% of students would be in mild special education and 2.5% are in moderate. Severe students are estimated to be two percent of all students. The weights would be included in the funding formula, with current categorical funding available to cover the cost of severe students.

The new funding levels are higher than the .25 weight in HB24-1448 formula.

Recommendation 5

Small districts should continue receiving additional funding utilizing a formula similar to the one currently in place. This adjustment only applies to districts with 3,900 students or less. It provides a higher weight for districts from around 100 to 2,000 students**,** with similar weights for districts above and below those sizes up to 3,900. The proposed size adjustment works very similarly to both the HB24-1448 formula's adjustment and the current adjustment with an emphasis on increasing funding to districts in the identified range. The study team believes this adjustment to the size formula addresses concerns identified around the rural factor and locale funding throughout the study. The study team would recommend keeping the minimum funding at 50 students, not 60 students as suggested in HB24-1148.

Recommendation 6

Colorado should create a state-specific cost adjustment that utilizes CWI and a cost of goods adjustment. If implemented, the state should consider capping the impact of a cost adjustment on total funding. The adequacy estimates include statewide average salaries with higher benefit levels than are currently offered in many Colorado districts, leading to what are likely higher overall compensation levels for many districts. Additionally, the higher costs of goods and services in certain districts are addressed in the size adjustment.

Recommendation 7

Districts should be funded based on the greater of a three-year average of current year student count or current year count. The approach would eliminate the multiple "best of" calculations (as referenced in Chapter One) in both the new and current formulas. This approach allows for smoothing of funding as districts decline n enrollment and would ensure there are no dramatic shocks to declining districts by the removal of such a factor.

Recommendation 8

The state should provide equalized matching funds for Mill Levy Overrides (MLOs) to eligible districts without a cap on available dollars. If a significant change in funding is provided to districts, the state should consider lowering the cap on the additional funds that districts can raise through MLOs. The state's current MLO matching program is providing support for lower-wealth districts but not at a high level. Districts cannot predict how much match they might receive, which likely means the matching program will struggle to incentivize districts to go for new MLO.

Recommendation 9

The study team recommends a phase in of the HB24-1448 formula over the next six to ten years. Initial steps would include redesigning the formula to incorporate the relative weights described in the adequacy recommendation formula. Colorado could take a similar approach to the implementation of HB 14-1448 and ensure hold harmless during the phase in, so no district receives less state funding during phase in than they do currently.

Additional Considerations

The study team would continue funding online and dual enrollment programs like ASCENT, acknowledging that the Post-secondary and Workforce Readiness Study that is currently underway should provide additional funding recommendations for many such programs when released. Therefore, there are no specific recommendations for those programs in this report.

Table 9.1 on the following page provides a comparison of these recommendations against the current formula and HB24-1448 formula. Figures are shown in 2025-26 dollars.

Table 9.1. Final Recommendations Compared to Current Formula and HB24-1448 Formula

	Input Adequacy Recommendations	Current Formula	HB24-1448 Formula
Base Per student	$12,346	$8,726.00	$8,726.00
Student Count	Single day count with either a three-year average or current year; some students count separately, such as those who study online.	Single day count with up to five years declining enrollment adjustment, some students counted separately, such as online.	Single Day Count with up to four-year declining enrollment adjustment, some students counted separately, such as online.
Cost of Living Adjustment	Design Colorado Specific Index, Determine Maximum Impact	Cost of Living with Personnel Cost Factor	Cost of Living without Personnel Cost factor
Size Adjustment	District Size adjustment with high of 2.3380 at 50 students and a minimum of 1.0 for districts above 3,900 students	District Size adjustment with high of 2.3958 at 50 students and a minimum 1.0297 for all districts	District Size adjustment with high of 2.3958 at 50 minimum and 1.0 for districts above 6,500 students
Rural Factor	Not Included	Provides funding for rural districts with less than 6,500 students	Not Included
Locale Factor	Not Included	Not Included	Provides funding based on NCES Locale codes ranging from .25 to .025 weight
At-Risk	.35 weight applied to the same base amount for all districts, no concentration factor	Minimum weight of .12 but with a concentration factor greater for larger districts. Applied to COL/Size adjusted per student amount	.25 weight with concentration factor only for smaller districts with at least 75% concentration. Applied to the same base amount for all districts
ELL	Multiple weights by WIDA level: .52 for levels 1&2, .36 for 3&4, and .16 for 5&6 applied to same base amount for all districts	.08 weight applied to COL/Size adjusted per student amount	.25 weight applied to the same base amount for all districts
Special Education	.44 weight for mild and 1.1 weight for moderate applied to same base amount for all districts. Severe fully reimbursed by the state	Not Included	.25 weight applied to same base amount for all districts
Online and Extended High School	Funded at specified per student amount	Funded at specified per student amount	Funded at specified per student amount

Funding Comparisons

This section provides a high-level comparison of the total funding requirements in the current law and HB24-1448 formula compared to the input-based adequacy proposed formula. The study team used CDE's 25-26 finance workbook to model costs.[40] The workbook contains both the HB24-1448 formula and the current formula, the study team then adjusted the workbook to model these input-based adequacy study recommendations. The model does not contain the student count detail for ELL or special education necessary to apply the tiered weights, so ELL is modeled at a .40 weight and special education at a .60 weight. The input adequacy model does not include a specific adjustment or amount for rural or locale-based funding, the costs are included in the size adjustment, and does not model a cost-of-living adjustment.

Table 9.2. Comparisons of Funding Formula Amounts in 2025-26 Dollars

	Input Adequacy Model	HB24-1448 Full Implementation	HB24-1448 Phase In	Current Formula*
Total Program	$13,491,482,407	$10,408,605,930	$10,024,346,997	$9,929,428,661
Base Funding	$9,953,588,473	$7,070,801,446	7,070,801,445.99	$7,108,677,439
At-Risk	$1,691,936,023	$866,824,884	N/A	$570,291,553
ELL	$323,534,805	$142,793,027	N/A	$ 57,342,842
Special Education	$681,246,609	$240,545,759	N/A	$0
Size	$396,363,032	$181,822,232	N/A	$355,500,930
Cost of Living	$0	$1,437,093,324	N/A	$1,473,107,804
Rural Schools	$0	$0	N/A	$36,654,926
Locale	$0	$155,720,248	N/A	$0

** Due to multiplicative nature of the formula, size and cost of living also impact other adjustments*

^ Due to phase in, information on specific adjustments is not possible

The total program for the input-based adequacy formula is about $3.5 billion higher than either the phased in HB24-1448 formula or the current formula and is about $3.1 billion higher than the fully implemented HB24-1448 formula. Base funding is nearly $3 billion more than the current or HB24-1448 formulas. Funding for special needs students is higher in all cases: at-risk funding is $1.1 billion more than current funding and $800 million more than HB24-1448; ELL funding is about $260 million more than the current formula and $180 million more than HB24-1448; and special education is $440 million more than HB24-1448. The size adjustment is about $70 million more than size and locale funding combined in HB24-1448 and is $40 million more than the current formula's size adjustment.

Cost Adjustment

As mentioned in recommendation 6, the study team suggests Colorado design its own index utilizing either a comparable wage index or a comparable wage index in tandem with a cost of goods and services adjustment. The study team believes that the cost adjustment is less important within a full

[40] https://www.cde.state.co.us/cdefinance/fiscalyear2025-26schoolfinancfunding

adequacy formula, and that the state should focus increased funding on implementing the components described above.

The study team did model costs of the CWIFT factors (rebased to the statewide average) and the HB24-1448 cost of living adjustment against the new base figure of $12,346, applying the CWIFT factors only to the base amount. The CWIFT would allocate an additional $921 million in statewide funding. The HB24-1448 adjustments would add $2.105 billion. The CWIFT would add 6.8% more funding and the HB24-1448 adjustment 15.6%. If the state decides to create a new index, the study team would suggest identifying a limit on the impact of the formula.

Severe Special Education Funding

In addition to the formula funding, categorical funding is currently available to districts. The study team does not make a recommendation on most of the categorical funding streams but does believe that the special education and ELL categorical funds could be repurposed. Current categorical funding for special education is applied on a tiered basis, with the inclusion of mild and moderate funding in the formula. The study team would recommend that all special education dollars be made available for severe special education funding. Similarly, the current ELL funding, $30.5 million, could be reallocated for severe special education, since it is not available to fund the formula, as total categorical funding is constitutionally protected. Reallocating these existing categorical dollars would provide about $370 million for severe special education funding. The study team estimated total special education funding from state and local dollars would be about $1.02 billion, of that $680 million would be in formula funding for special education as shown in the previous table, with the remaining $340 million needing to be funded outside of the formula to fully cover the costs of providing special education services to students with severe needs. Reallocating the existing categorical funds more than covers the additional costs for severe special education funding.

District by district comparisons of total program funding can be found in Appendix Nine. It is important to note that the study did not examine transportation or facilities costs. To have a fully funded system, these two areas would still need to be funded separately.