

Report to the Governor and the General Assembly of Virginia

Virginia's K-12 Funding Formula

2023



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Summary: Virginia’s K–12 Funding Formula

WHAT WE FOUND

Virginia divisions receive less funding than multiple benchmarks

Virginia school divisions receive less K–12 funding per student than the 50-state average, the regional average, and three of Virginia’s five bordering states (figure). School divisions in other states receive 14 percent more per student than school divisions in Virginia, on average, after normalizing for differences in cost of labor among states. This equates to about \$1,900 more per student than Virginia.

Virginia divisions receive less funding than what three Virginia-specific funding benchmark models suggest is needed to provide students a quality education (figure, next page). Depending on the benchmark, Virginia school divisions were estimated to need 6 percent to over 30 percent more funding. Between 73 percent and 89 percent of the state’s school divisions receive funding that is below benchmarks, depending on the model and assumptions used.

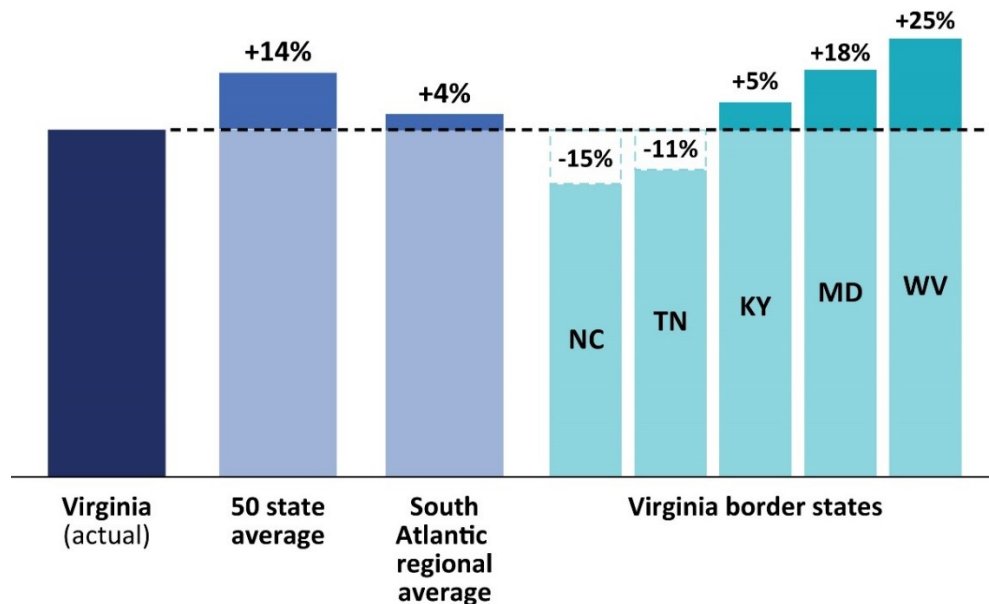
WHY WE DID THIS STUDY

The General Assembly (SJ294) directed the Joint Legislative Audit and Review Commission (JLARC) to study the cost of education in Virginia and make an accurate assessment of the costs of the Standards of Quality.

ABOUT THE STANDARDS OF QUALITY FORMULA

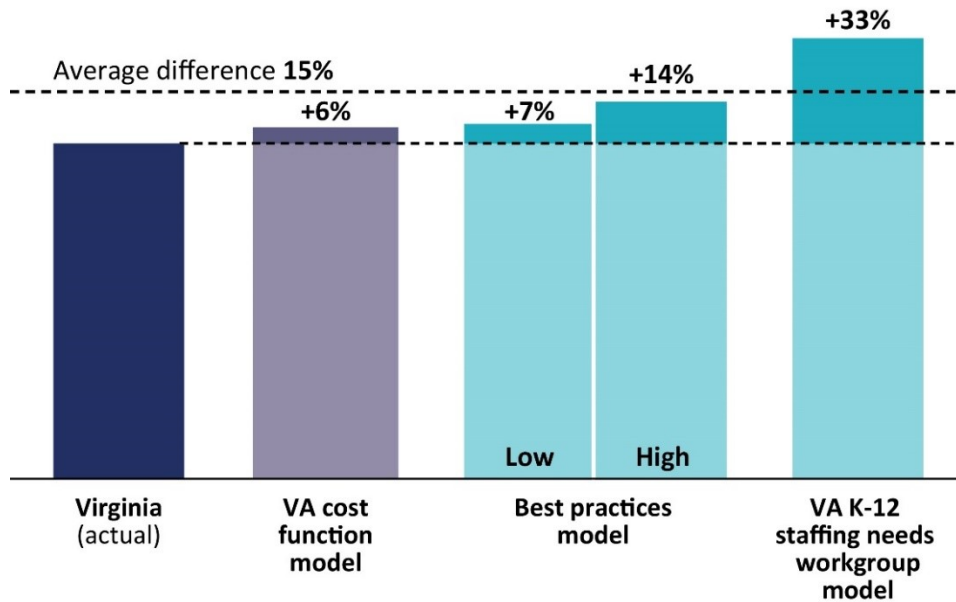
The Standards of Quality (SOQ) funding formula is how the General Assembly fulfills its constitutional obligation to seek to establish and maintain a high quality public school system. The formula estimates how many staff positions are needed for each school division, then applies cost assumptions to estimate the cost of K–12 staff needed in each division. That cost is then apportioned between the state and each local government using the Local Composite Index.

Virginia school divisions receive less funding than national and regional averages (FY20)



SOURCE: JLARC analysis of NCES data, adjusted for cost of labor.

Virginia school divisions receive less funding than amounts benchmark models estimate is needed (FY21)



SOURCE: JLARC analysis of prior cost studies, research literature, expert interviews, educator work groups, and staff modeling of funding needs.

State SOQ formula yields substantially less funding than actual division spending and benchmarks

The SOQ formula is intended to calculate the funds needed to provide a high quality education, but SOQ total funding is well below actual school division expenditures. The SOQ formula calculated school divisions needed a total of \$10.7 billion in state and local funding for FY21, but divisions actually spent \$17.3 billion on K–12 operations, \$6.6 billion more than the funding formula indicated was needed. Funding differences for the preceding years were about the same. The vast majority of the additional funding for school divisions comes from local governments.

While the SOQ funding formula’s calculations were substantially less than actual expenditures, they were even further below the funding levels the benchmark models determined were needed. The models estimated Virginia should provide 66 percent to 93 percent more funding than the SOQ formula’s calculations.

Total statewide staffing needs calculated by SOQ formula are less than actual employment levels and workgroup estimates

One of the reasons the SOQ formula’s funding calculations are well below both actual practice and benchmarks is that the formula substantially underestimates K–12 staffing. In FY21, the SOQ formula calculated that divisions needed 113,500 FTE staff to perform the various instructional, student support, and administrative functions of the K–12 system. However, divisions actually employed 171,400 staff (51 percent

more) to perform these responsibilities. The difference was even larger between the formula's calculations and estimates developed by the Virginia K–12 staffing workgroups (sidebar). The workgroups estimated that divisions need more than 100,000 staff statewide above the SOQ formula's calculations.

The SOQ formula underestimates staffing needs in each of Virginia's school divisions. Between FY19 and FY21, every school division in the state employed more staff than the SOQ formula calculated they needed. In FY21, the SOQ formula calculations ranged from as low as 43 percent of the number of staff actually employed in one division to 99 percent of the number of staff actually employed in another.

In interviews, many school division administrators characterized the state's staffing standards as unrealistic, often citing the difference between SOQ staffing calculations and the number of staff they actually needed to employ. Administrators said: "It's a misnomer to call it the SOQ; it's not quality at all;" and "If we just funded at SOQ level, it would be a catastrophe."

SOQ formula systematically underestimates division compensation costs

The SOQ formula not only underestimates the number of K–12 staff needed, but also school divisions' compensation costs. Several factors contribute to the formula's low compensation cost assumptions. The formula underweights salaries paid by the state's largest school divisions, even though these divisions employ a majority of K–12 staff and account for a majority of staffing costs. This results in the formula underestimating the salaries and related compensation costs of the majority of SOQ-recognized positions.

The difference between SOQ-calculated compensation costs and actual compensation costs for SOQ-recognized staff (excluding health care) has been about \$1.3 billion annually. The difference is most substantial in larger divisions. For example, the average very large division (more than 30,000 students) spent about \$139 million on compensation for SOQ-funded staff above the SOQ formula's calculations.

The formula also does not fully and routinely update the salary cost assumptions used, resulting in less funding for salaries than is needed. Compensation supplements, which the state uses to increase compensation funding over time, have not been consistently provided, and funding amounts have not been based on a clear measure or objective, such as keeping pace with projected inflation or achieving an average salary goal.

Formula still uses Great Recession-era cost reduction measures

The historic decline in state revenue during the Great Recession led to a series of changes to the SOQ formula that reduced funding. Many of these changes remain in place as of late June 2023—more than a decade since the Great Recession ended.

A few of these changes, such as a change in health-care insurance calculations, have improved the formula and have a clear rationale. However, several of the changes lack

During fall 2022, JLARC staff convened seven workgroups of teachers, principals, support staff, and central office administrators and directors. More than 40 people participated in the workgroups. Each of the workgroups developed estimates of staffing needs in a particular area based on their professional knowledge and real-world experiences.

clear and justifiable rationales or do not reflect current practices. The three largest Great Recession-era changes together reduced state funding by \$487 million in FY22 (table).

Recession-era formula changes still result in large state funding reductions

Change	Reduction in state funding, FY22 (in millions)
Cap on support positions	\$331
Changes to non-personal costs	148
Change to federal deduction	12
Total	\$487

SOURCE: JLARC analysis of Annual School Report data and VDOE documents.

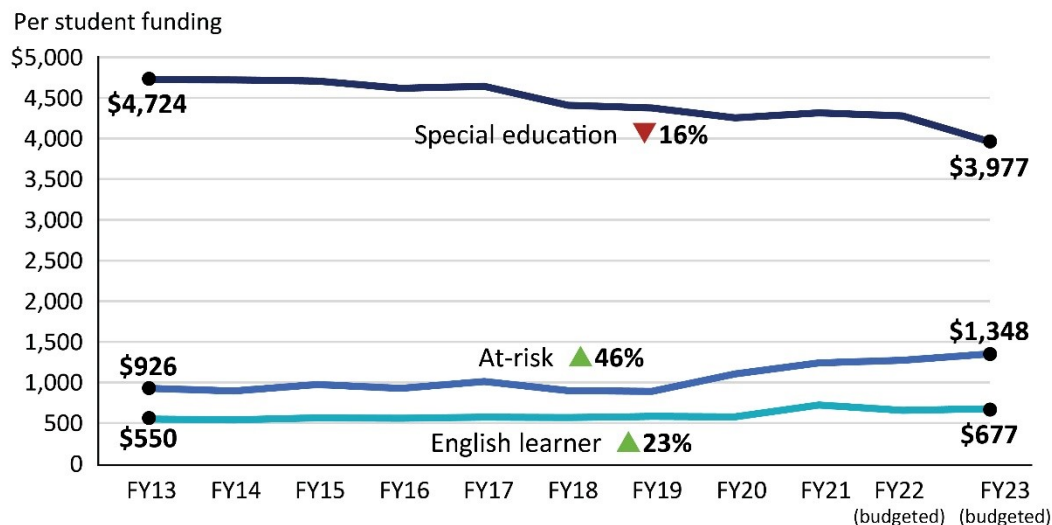
Formula does not adequately account for higher needs students; methodology for at-risk students undercounts students in poverty

An effective SOQ formula should account for the higher costs divisions incur because of factors outside their control. Divisions have little or no control over how many higher needs students (at-risk due to poverty, special education, or English learners) live in their division. On average, divisions need more funds to educate these students.

The SOQ formula does not adequately account for higher needs students. State funding for at-risk students, special education students, and English learner students is less than the level of funding determined necessary to educate them in cost studies performed in other states.

Over the last 10 years, state funding has increased per student for at-risk students (+46 percent) and English learner students (+23 percent) but declined for special education students (figure, next page). The total amount of state funding for special education has remained fairly constant over this period, while the special education student population has grown. While state funding per student has declined, the *total* actually spent per student on special education has increased 17 percent from FY13 to FY21, after adjusting for inflation. This additional funding for special education has mostly come from local governments.

State funding for special education has declined; funding for at-risk students and English learners has increased



SOURCE: JLARC analysis of VDOE and state budget data.

The SOQ formula relies on an outdated measure to determine the number of at-risk students. Free lunch eligibility was historically based on the number of students who applied and were approved for free lunch and was used to measure student poverty in several at-risk funding formulas. However, with the establishment of a new federal program in 2014, a large portion of schools and divisions are no longer required to collect free lunch applications. The state’s policy, as directed in the Appropriation Act, is to continue using the last application-based free lunch rates reported by those schools and divisions. However, for some schools and divisions, that data is now several years old and actual student poverty has increased. The state’s school nutrition program has developed a more reliable methodology for determining the number of free lunch eligible (at-risk) students. This program estimated that 53 percent of students in the state are free lunch eligible in contrast to the outdated free lunch methodology, which recently estimated the at-risk population to be only 39 percent statewide.

Formula does not adequately account for local labor costs

An effective education funding formula should also account for higher labor costs. Virginia’s SOQ formula attempts to account for higher labor costs in some divisions through the cost of competing adjustment, which provides varying funding increases to divisions in and around Northern Virginia.

The cost of competing adjustment provides less additional funding than actual salary differences. For example, Arlington County Public Schools receives a 9.83 percent adjustment for teachers’ salaries but its actual labor costs are 40 percent more than the average Virginia school division’s labor cost.

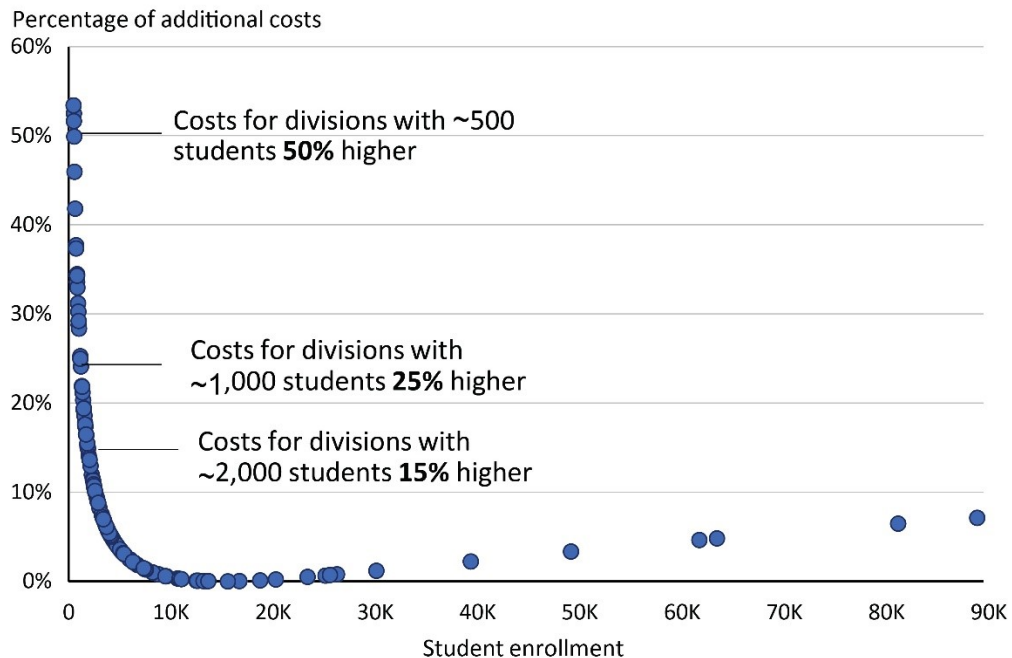
In addition, the adjustment excludes school divisions in other higher cost labor markets. Several school divisions in the Central Virginia and Tidewater regions have above average labor costs and do not receive a cost of competing adjustment.

Formula does not adequately account for small divisions' inability to gain economies of scale

An effective education funding formula should account for the higher cost per student divisions incur when they are too small to achieve operational efficiencies (economies of scale). As enrollment increases, the marginal cost of K–12 operations typically decreases. Research finds that divisions achieve most of their efficiency gains when they have at least 2,000 students. Virginia's SOQ formula provides no additional funds to small divisions to account for their higher per student costs.

Research literature shows that small school divisions with less than 2,000 students tend to spend more per student than larger divisions, after accounting for differences in cost of labor (figure). Even though small divisions spend more per student, (i) a smaller portion of their total spending is on instruction, and (ii) a greater portion is on fixed, non-instructional expenses such as transportation, administration, and facilities. Small, rural counties have especially high transportation costs because of their large geographic size and small student populations. Small school divisions also need to employ more staff per student because of the need to offer a broad range of classes but with fewer students per class.

Cost per student is substantially higher for divisions with fewer students



SOURCE: JLARC analysis of Virginia enrollment data using economies of scale formula from cost study researchers.

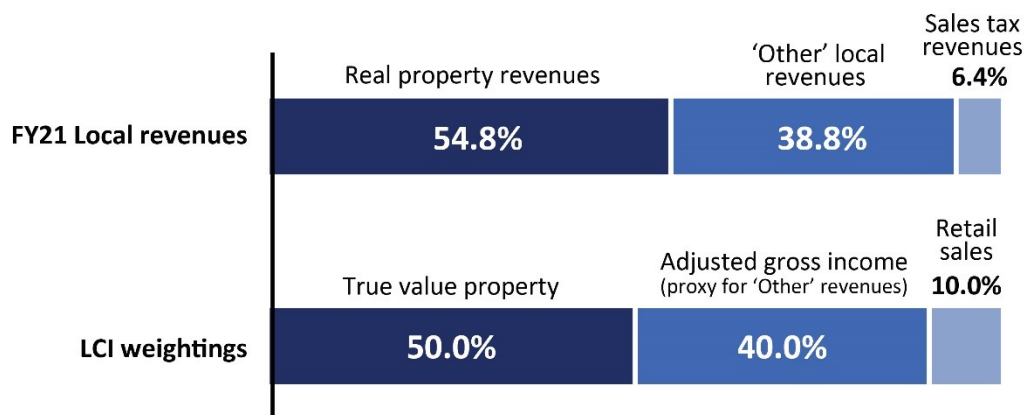
Despite being 50 years old, LCI formula remains a reasonable measure of local ability to pay

The state uses the local composite index (LCI) to determine each local government's ability to contribute to K–12 funding. The LCI determines the local and state split of SOQ formula funding estimates for each locality. (The state pays a higher share of the SOQ formula estimate for school divisions in less wealthy localities and a lower share for divisions in wealthier localities.)

The LCI formula's original assumptions about which revenue sources Virginia localities rely on are still reasonably close to today's revenue sources. The LCI was developed by the 1972–1973 Task Force for Financing the SOQs to acknowledge that state and local funding obligations need to account for differences in local ability to pay. Five decades later, local revenue sources and the proportion of revenue from the various sources are not substantially different from the early 1970s (figure).

Though the LCI is a reasonable measure of ability to pay, it can lead to sudden, large changes in the state or local funding share between biennia for certain divisions. Moreover, since the LCI's creation, better data has become available, and there has been growing consensus nationally and among experts that a measure known as “revenue capacity” can even more accurately and fairly measure local ability to pay.

Proportion of local revenue sources remains similar to original LCI weightings



SOURCE: Auditor of Public Accounts, Comparative Report of Local Government Revenues and Expenditures FY21.

State can consider a wide range of changes to improve the SOQ formula

This report includes near-term and long-term recommendations and policy options to strengthen the SOQ formula. Near-term recommendations could be implemented sooner, while long-term recommendations represent more complex changes that would take more time to design and implement. Policy options are proposed when

elements of the formula do not have to be changed based on the evaluation criteria, but improvements could still be made.

The estimated cost of implementing major recommendations and options is summarized in the table below. The financial impact of the changes shown here reflect what the impact on the *state* budget would have been in FY23, *after accounting for all funding appropriated that year*. In addition to the state budget impact, there are also substantial changes in *local* funding obligations depending on the recommendation or policy option. However, because many local governments already contribute more than is required under the SOQ formula, the actual financial impacts on most local government budgets would likely be proportionally lower than the impact on the state budget. Financial impacts will also vary for each individual school division. [Additional details on the local share of funding and division-level impacts can be found on the JLARC website.](#)

These recommendations and policy options would improve the state's education funding formula and better ensure a quality education for Virginia students. Much of the additional funding allocated under this report's recommendations and options would go toward employee compensation, hiring additional staff as needed to address critical student needs (e.g., reduce longstanding achievement gaps), or providing support services to higher needs students. The return over time on this additional spending would likely be evident through a higher quality teacher workforce and students who are better prepared to succeed. These outcomes are expressly set forth as goals in the Code of Virginia for the state's public K–12 system.

Summary of near-term and long-term recommendations

	State \$ impact (FY23)	Percent change
Recommendations: Near term		
<i>Could be phased in over FY25-26 & FY27-28 biennia, if funding is available</i>		
Address technical issues with the formula	\$45M	0.6%
Discontinue Great Recession-era cost reduction measures	\$515M	6.5%
Calculate prevailing costs using division average, rather than LWA	\$190M	2.4%
Change Local Composite Index to three-year average	–\$1.5M	–0.02%
Convert non-SOQ At-Risk Add-On funding to SOQ-required funding	--	--
Replace outdated and inaccurate free lunch measure	\$250M	3.2%
Consolidate two largest at-risk programs into new SOQ At-Risk Program		
Direct further study of special education staffing needs	--	--

Recommendations: Long term

Could be phased in by the FY33-34 biennia, if funding is available

Develop & adopt new staffing ratios, based on actual staffing	\$1,860M	23.5%
Update out-of-date salary assumptions during re-benchmarking	Depends on timing ^a	
Replace cost of competing adjustment with newer, more accurate method	\$595M	7.5%
Adopt economies of scale adjustment to assist small school divisions	\$90M	1.1%

SOURCE: JLARC staff analysis and estimates using in-house JLARC SOQ model developed to approximate fiscal impact.

NOTE: The financial impact of the changes shown here reflect what the impact on the *state* budget would have been in FY23, *after accounting for all funding appropriated that year*. Division-level and local funding impacts can be found on the JLARC website.

^a Cost impact is heavily dependent upon rate of inflation during year in which implemented. Examples given in Chapter 8 of report.

Summary of policy options to change the formula

	State \$ impact (FY23)	Percent change
Policy options		
Implement funding plan to achieve state goal for teacher salaries	Depends on goal and plan	
Weight student and general population equally in local composite index	-\$45M	-0.5%
Replace local composite index with revenue capacity index	-\$85M	-1.1%

SOURCE: JLARC staff analysis and estimates using in-house JLARC SOQ model developed to approximate fiscal impact.

NOTE: Division-level and local funding impacts can be found on the JLARC website.

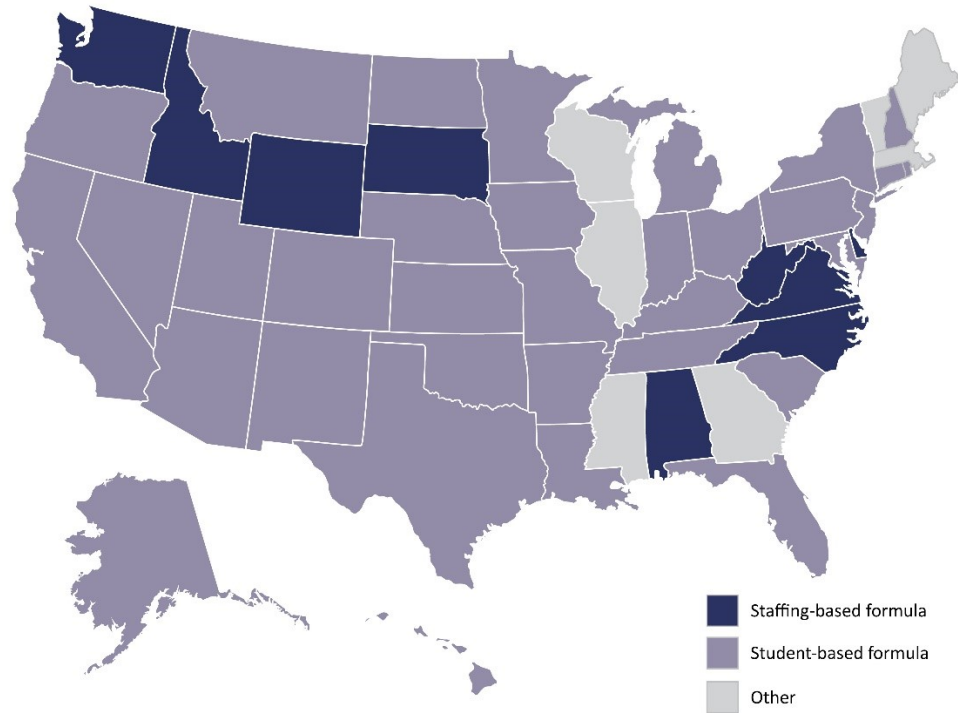
Most other states use simpler student-based K-12 funding formulas, in contrast to Virginia’s complex staffing-based formula

Virginia is one of only nine states that use a staffing-based formula, and some academic experts now view it as an outdated approach. The vast majority of states (34) use a student-based funding formula that allocates divisions a specified amount of funding per student (figure, next page). Seven states use hybrids of the staffing- and student-based approaches or another approach.

A well-designed student-based funding model would be more accurate, more transparent, and easier to maintain over time than Virginia’s current staffing-based formula.

Implementing a student-based funding formula is estimated to cost an additional \$520 million to \$1.2 billion above FY23 funding, depending on how the new formula is implemented.

Majority of states use a student-based funding model instead of a staffing-based funding model



SOURCE: Education Commission of the States and Tennessee Investment in Student Achievement (TISA) Formula.
NOTE: Other funding models include either (a) hybrid models that combine aspects of student- and staffing-based models and (b) guaranteed tax base/tax-levy equalization, wherein the state provides higher levels of funding to lower property-wealthy districts, based on property taxes paid within the district.

SOQ funding formula maintenance and support has been problematic

The SOQ formula’s staffing and funding calculations do not reflect prevailing practice. This is largely because the formula has been altered piecemeal by prior governors and General Assemblies based on available revenue in a given year. In addition, changes that are necessary to adapt the SOQ formula and keep it in line with prevailing practice are often not made.

The state needs to build a more robust and modern approach to maintaining and updating its SOQ funding formula that is removed from the budgetary processes. The IT application used by VDOE to maintain the SOQ formula is cumbersome and old, and its internal calculations are opaque. School divisions lack the full information and understanding necessary to accurately report financial data that is used in SOQ funding calculations. Divisions also need more information and support from VDOE on financial reporting and budgeting.

WHAT WE RECOMMEND

Legislative action

- Long term – Develop accurate fixed and prevailing staffing ratios that are simpler, easier to apply, and comprehensive.
- Near term – Eliminate the support cap and re-instate (a) non-personal categories removed in FY09 and FY10, and (b) federal fund deduction methodology used prior to FY09.
- Long term – Routinely update the cost assumptions used for school division salaries during the re-benchmarking process.
- Near term – Calculate salaries and other cost assumptions using the division average, rather than the linear weighted average.
- Long term - Replace the cost of competing adjustment with a Virginia-based labor cost index.
- Long term - Adopt a new economies of scale adjustment applicable to divisions with fewer than 2,000 students.
- Near term – Calculate the LCI using a three-year average.
- Near term – Provide funding as needed to modernize K–12 reporting and the IT application used for the SOQ formula.
- Near term – Provide funding as needed for additional VDOE staff to maintain SOQ formula and provide support to divisions.

Executive action

- Fix technical problems with the SOQ formula related to excluding central office staff positions, facilities staff, and inflation and enrollment projections.
- Modernize K–12 reporting and IT application used for SOQ formula.
- Determine staffing needed to adequately maintain funding formula and provide support to divisions.

The complete list of recommendations and policy options is available on page xiii.

Recommendations and Policy Options: Virginia's K-12 Funding Formula

JLARC staff typically make recommendations to address findings during reviews. Staff also sometimes propose policy options rather than recommendations. The three most common reasons staff propose policy options rather than recommendations are: (1) the action proposed is a policy judgment best made by the General Assembly or other elected officials, (2) the evidence indicates that addressing a report finding is not necessarily required, but doing so could be beneficial, or (3) there are multiple ways in which a report finding could be addressed and there is insufficient evidence of a single best way to address the finding.

Recommendations

RECOMMENDATION 1 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act directing the following technical adjustments to the Standards of Quality (SOQ) formula and compensation supplement calculations: (i) include all division central office positions in the SOQ formula, (ii) apply the cost of competing adjustment to facility and transportation staff salaries in the SOQ formula, (iii) remove the cap on adjustments to non-personal cost assumptions in the benchmarking process in the SOQ formula, and (iv) account for cost of facilities staff salaries in compensation supplement calculations.

RECOMMENDATION 2 – LONG TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to develop and propose a new set of fixed and prevailing staffing ratios for the Standards of Quality formula, in consultation with school divisions and the Board of Education, which should accurately reflect how divisions are staffed and be simpler, easier to apply, and comprehensive.

RECOMMENDATION 3 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and Appropriation Act to establish Standards of Quality staffing ratios developed by the Virginia Department of Education, in consultation with school divisions and the Board of Education, that accurately reflect how divisions are staffed.

RECOMMENDATION 4 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act that directs the following changes to the Standards of Quality formula: (i) eliminate the support cap, (ii) re-instate the non-personal cost categories removed in FY09 FY10, and (iii) re-instate the federal fund deduction methodology used prior to FY09.

RECOMMENDATION 5 – LONG TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to update the cost assumptions for school division employee salaries used in the biennial Standards of Quality re-benchmarking process to better reflect current salaries paid by school divisions.

RECOMMENDATION 6 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to calculate salary and other Standards of Quality formula cost assumptions using the division average, rather than the linear weighted average.

RECOMMENDATION 7 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to change the local composite index to be calculated using a three-year average of the most recently available data, rather than a single year of data every other year.

RECOMMENDATION 8 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to designate the At-Risk Add-On program as a Standards of Quality funding program, in recognition that the funding is essential for providing Virginia K–12 students with a quality education.

RECOMMENDATION 9 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to direct use of the federally approved Identified Student Percentage measure to calculate funding for all at-risk programs that currently rely on the outdated free lunch estimates.

RECOMMENDATION 10 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to consolidate the At-Risk Add-On program and Prevention, Intervention, Remediation program and create a new At-Risk Program under the Standards of Quality. Funding for the new At-Risk Program would be allocated based on each school division's weighted Identified Student Percentage, and 60 percent of funding would be distributed to divisions using a flat per student rate and 40 percent would be distributed using a variable rate based on the concentration of poverty in each school division.

RECOMMENDATION 11 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act requiring the Virginia Department of Education to work with school division staff and experts as needed to develop new special education staffing needs estimates based on a review of current ones and report its findings to the Board of Education, the House Committee on Education, and the Senate Committee on Education and Health.

RECOMMENDATION 12 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to replace the current cost of competing adjustment with a more accurate adjustment based on a Virginia cost of labor index that better accounts for differing labor costs across school divisions in calculating compensation funding through the Standards of Quality formula.

RECOMMENDATION 13 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act directing that the Standards of Quality formula include an economies of scale adjustment to provide additional funding to divisions with fewer than 2,000 students.

RECOMMENDATION 14

The General Assembly may wish to consider amending the Code of Virginia to state that it shall consider the funding amounts calculated by the Standards of Quality (SOQ) formula when determining the amount of funding needed to maintain an educational program meeting the prescribed SOQs, but shall not be obligated to appropriate the amounts calculated by the formula.

RECOMMENDATION 15

If the Code of Virginia is amended to establish that the funding amounts calculated by the Standards of Quality formula serve only as a guide for needed funding, the General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to eliminate current SOQ staffing standards and direct the Board of Education to establish all staffing ratios used in the SOQ formula.

RECOMMENDATION 16

The General Assembly may wish to consider amending the Code of Virginia to direct the Virginia Department of Education (VDOE) to biennially calculate, compare, and report on differences between the fixed staffing ratios in the SOQ formula and actual ratios in Virginia school divisions, so that fixed ratios can be regularly adjusted as needed. VDOE should report its findings to the Board of Education.

RECOMMENDATION 17

The General Assembly may wish to consider including funding in the Appropriation Act for the Virginia Department of Education to begin procuring a modern and more usable Standards of Quality funding information technology application.

RECOMMENDATION 18

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to work with school division finance directors to study the feasibility of implementing a secure, web-based reporting system for annual school reports.

RECOMMENDATION 19

The Virginia Department of Education should submit to the Department of Planning and Budget a decision package for modernizing its Standards of Quality funding information technology application and school division financial reporting system to be considered for the governor's introduced budget. The decision package should explain and itemize the cost of any consultants, procurements and additional full-time or contracted staff that are expected to be needed to modernize these systems.

RECOMMENDATION 20

The General Assembly may wish to consider including funding in the Appropriation Act for the Virginia Department of Education to create a position in the Office of Budget responsible for providing technical information and support to school division finance directors regarding (i) the annual financial reporting process and requirements and (ii) data critical for school division budgeting purposes, such as expected and actual amounts of state SOQ and non-SOQ funding.

Policy Options to Consider

POLICY OPTION 1

The General Assembly could develop and implement a funding plan to increase compensation supplements as needed to achieve the statutory goal of Virginia teacher salaries being at or above the national average.

POLICY OPTION 2

The General Assembly could amend the Code of Virginia and include language in the Appropriation Act directing that a locality's student enrollment and general population be equally weighted in the calculation of the local composite index for Standards of Quality funding, rather than weighting student enrollment two-thirds and the general population one-third.

POLICY OPTION 3

The General Assembly could amend the Code of Virginia and include language in the Appropriation Act directing the replacement of the local composite index with a revenue capacity index.

POLICY OPTION 4

The General Assembly could amend the Code of Virginia to replace the entire staffing-based SOQ formula with a new student-based formula that is based on actual average school division expenditures.

POLICY OPTION 5

The General Assembly could amend the Code of Virginia to replace the current SOQ formula calculations for special education and English as a Second Language, including any associated calculations for benefits and payroll taxes under other SOQ accounts, with student-based funding calculations that are based on actual average school division expenditures.

1 K–12 Education Funding in Virginia

The General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to study the cost of education in the Commonwealth and provide an accurate assessment of the costs to implement the Virginia Standards of Quality (SOQs). The resolution specifically directs JLARC to analyze:

- the cost of implementing the SOQs based on the actual expense of education in the Commonwealth;
- whether the SOQs accurately reflect practices within each school division;
- the impact of changes made in the SOQ funding formula since 2009;
- how the SOQ funding formula could be changed to ensure state support is neither inadequate nor excessive; and
- other relevant funding issues, as identified by the JLARC staff.

Subsequent Appropriation Act language also directed staff to review the cost of competing adjustment provided to certain localities in and near Northern Virginia.

To ensure a comprehensive review of SOQ funding, all federal, state, and local education funding was examined, including the state’s SOQ and non-SOQ funding programs. These other education funding sources are complementary to SOQ funding, so these sources needed to also be fully understood when considering potential changes to SOQ funding. The focus was on funding for day-to-day K–12 operations, as capital funding and pre-kindergarten programs have been recently examined elsewhere (sidebar).

When reviewing the SOQs, the primary focus was Standard of Quality 2 in the Code of Virginia, which addresses instructional, administrative, and support personnel funding and staffing standards. Other relevant staffing standards for the SOQ formula that are established separately in the Appropriation Act and state regulations were also closely reviewed. (For a full list of all the SOQs, see Appendix C.)

To address the study resolution, numerous research activities were conducted. Interviews and workgroups were held with educators and administrators from school divisions across the state and in the Virginia Department of Education (VDOE). In-depth reviews of Virginia’s staffing standards and funding formulas were performed, detailed funding models against which to compare current spending were developed, and a model to simulate potential changes was developed. Extensive analysis of financial, student, and other division data collected by VDOE and national organizations was performed and cost benchmarks for education funding were identified. Funding reform efforts in other states and academic research on K–12 funding were reviewed, and state and national education associations, national school funding experts, and

Virginia’s Commission on School Construction and Modernization was established in 2020 to examine school facilities and make funding recommendations to the governor and General Assembly. It issued recommendations in December 2021 and 2022 and is authorized to continue its work until July 2026.

JLARC’s 2017 review of Improving Virginia’s Early Childhood Development Programs examined public pre-kindergarten programs.

public education officials in other states were interviewed. (See Appendix B for a detailed description of research methods.)

Virginia law sets goal to establish and maintain a high quality K–12 education system

Virginia has a fundamental legal obligation to fund its K–12 public education system. The Constitution of Virginia sets forth several foundational rights and obligations related to K–12 education (Exhibit 1-1). First, students in the Commonwealth cannot be charged for their education. Funding the state’s public education system is, therefore, the responsibility of the state and local governments, with assistance from the federal government. Second, the legislature must *attempt* to establish and maintain a high quality public school system. Third, the legislature has sole authority to decide *how* to fund education and determine state funding amounts and minimum local government contributions.

EXHIBIT 1-1

The Constitution sets forth educational rights, obligations, and authorities

Children entitled to a free public K–12 education - “The General Assembly shall provide for a system of free public elementary and secondary schools for all children of school age throughout the Commonwealth ...”

General Assembly obligated to attempt to provide a high quality public education – “[The General Assembly] shall seek to ensure that an educational program of high quality is established and continually maintained.”

– *Constitution of Virginia, Article VIII, Section 1*

General Assembly decides how to fund public education -“The General Assembly shall determine the manner in which funds are to be provided for the cost of maintaining an educational program meeting the prescribed standards of quality ...”

General Assembly decides how to allocate costs – “[The General Assembly] shall provide for the apportionment of the cost of such program between the Commonwealth and the local units of government comprising such school divisions.”

– *Constitution of Virginia, Article VIII, Section 2*

Over time, within the above constitutional parameters, prior General Assemblies have further articulated the goal of the state’s education system and broadly defined a quality education in the Code of Virginia (Exhibit 1-2). According to the Code of Virginia, the goal of the public education system is to allow students to develop the skills to be successful, prepared, and reach their full potential. The Code states the quality of education a student receives depends on having high quality instructional personnel, the appropriate learning environment, and quality instructional practices. The Code states that funding is needed to achieve this goal and meet constitutional requirements.

EXHIBIT 1-2

Code of Virginia sets public education goal and defines educational quality

Goal is successful and prepared students – “The General Assembly and the Board of Education believe that the fundamental goal of the public schools of the Commonwealth must be to enable each student to develop the skills that are necessary for success in school, preparation for life, and reaching their full potential.”

Educational quality depends on high quality personnel and other factors – “The General Assembly and the Board of Education find that the quality of education is dependent upon the provision of (i) the appropriate working environment, benefits, and salaries necessary to ensure the availability of high-quality instructional personnel; (ii) the appropriate learning environment designed to promote student achievement; (iii) quality instruction that enables each student to become a productive and educated citizen of Virginia and the United States of America; and (iv) the adequate commitment of other resources.”

Achieving goal requires funding – “In keeping with this goal, the General Assembly shall provide for the support of public education as set forth in Article VIII, Section 1 of the Constitution of Virginia.”

– *Code of Virginia § 22.1-253.13:1 A.*

The Constitution directs the Board of Education and General Assembly to more precisely define a quality public education through developing the SOQs. The SOQs include staffing standards for the public school system, Standards of Learning for the curriculum, graduation requirements for students, Standards of Accreditation for schools, professional development requirements for teachers, and administrative planning and policy requirements. These standards have historically been developed and maintained by the Board of Education in state regulations, but over time many have been established in the Code of Virginia and Appropriation Act.

According to the Board of Education, the SOQs require each local school board to provide K–12 instruction that aligns with the Standards of Learning. Instruction should provide students the necessary knowledge and skills to succeed in school and after they graduate, provide additional opportunities that meet student abilities and interests, and accommodate all students.

In June, the administration identified four ways schools can improve and use best practices: a stronger accreditation system, proficiency standards on SOL assessments, instructional and student improvement in math; and more methods to ensure college and career readiness (sidebar).

In response to direction from the General Assembly, the administration released a report in June 2023 on educational improvement. The report “Recommendations of the Secretary of Education and the Superintendent of Public Instruction to Promote Excellence and Higher Student Achievement in response to House Bill 938,” identified four key areas for improvement. The report is intended to address the recent decline in Virginia student test scores, especially compared with other states.

SOQ funding formula is primary way state determines amount of K–12 education funding

K–12 public education is the largest single financial commitment for the state and local governments. K–12 public education funding is by far the largest category of state general fund spending, representing 30 percent of the general fund budget and 13 percent of the total state budget. Education funding is an even larger financial commitment for localities, representing 52 percent, on average, of local government budgets in Virginia.

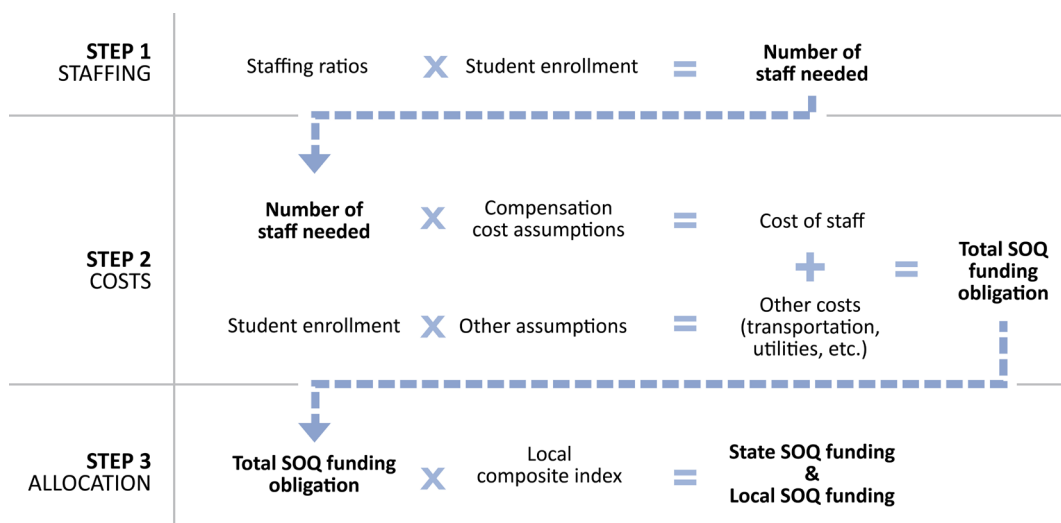
Staffing ratios, or standards, are a core part of the SOQ formula. These are sometimes expressed as a ratio of students to staff, such as the maximum number of students in a classroom, or staff to students, such as the minimum number of school counselors needed per student.

The SOQ funding formula and the resulting funding amounts school divisions receive are the primary focus of this report. K–12 funding is the largest single budgetary item for state and local government (sidebar). The SOQ formula is how the General Assembly fulfills its constitutional obligations to decide how to fund education and allocate funding responsibility between the state and local governments. After accounting for federal funds, the SOQ formula calculates the total state and local funding required for each school division. The total (state and local) SOQ funding amounts represent the funding levels the governor and General Assembly deem needed to meet the constitutional goal of providing a high quality education.

SOQ funding formula uses staffing standards and cost assumptions to determine funding needs and then apportions state and local shares

SOQ funding for each division is calculated under the SOQ formula. The formula has three main steps (Figure 1-1). Step one is to calculate the total number of staff positions needed for each school division, based on staffing ratios (sidebar). Step two is to apply compensation assumptions to estimate the cost of staffing each division. The formula also makes other assumptions, such as about transportation and facility operations costs. For divisions in and near Northern Virginia, funding amounts are increased for higher labor costs. Step three divides each division’s total SOQ funding obligation between the state and local governments based on local ability to pay, using the Local Composite Index (LCI).

FIGURE 1-1
SOQ funding is calculated in three steps



SOURCE: JLARC analysis of SOQ formula.

Each step of the SOQ formula contains multiple calculations, which determine the funding levels for the 12 accounts that make up total SOQ funding. For example, several calculations are used for the Basic Aid account, which has historically included the majority of SOQ funding. The Basic Aid account has separate calculations for teacher salaries, benefits, and social security. Examples of other SOQ accounts include funding for students with higher needs, vocational and gifted education, and algebra readiness. Some of the funding levels for these other SOQ funding accounts are determined by calculations different than those displayed in Figure 1-1. (See Appendix C for full list of the SOQ accounts.)

The SOQ formula is not established in a single law or regulation. Instead, staffing standards, cost assumptions, and calculation requirements are found in the Code of Virginia, Appropriation Act, BOE regulations, and VDOE policies and procedures. In practice, the formula is extremely complex, and most calculations occur within an IT application called the SOQ funding model. VDOE is responsible for managing the SOQ funding model, updating it to reflect the most recent changes and data, and calculating and eventually dispersing funding.

State provides school divisions with additional funds through non-SOQ funding programs

Outside of the SOQ formula, the state provides additional K-12 funding to school divisions through more than 40 non-SOQ programs (and requires localities to provide matching funds for some programs). For some programs, the General Assembly has established unique funding formulas in the Code or the Appropriation Act. For others, the General Assembly sets funding amounts in the Appropriation Act and then allocates these funds to divisions. Non-SOQ programs can be considered supplementary funding because they are not part of the SOQ formula itself.

The LCI is used to determine state shares of funding for several of the non-SOQ programs. The programs that require local matches include four of the five largest non-SOQ programs: At-Risk Add-On, K–3 Class Size Reduction, Compensation Supplements, and the Lottery Infrastructure and Operations Per Pupil Funds. Local matches were required for seven non-SOQ programs in total in FY23.

Local governments provide more than half of all K-12 funding, but two-thirds of divisions receive a majority of their funding from the state

Virginia’s K–12 public school system is composed of 134 different school divisions, several of which operate jointly (sidebar). School divisions rely heavily on both state and local funding for their day-to-day operations. In aggregate, Virginia school divisions received \$20.1 billion in combined funding from state, local, and federal sources in FY21. State and local funding comprised about 90 percent of total funding. The

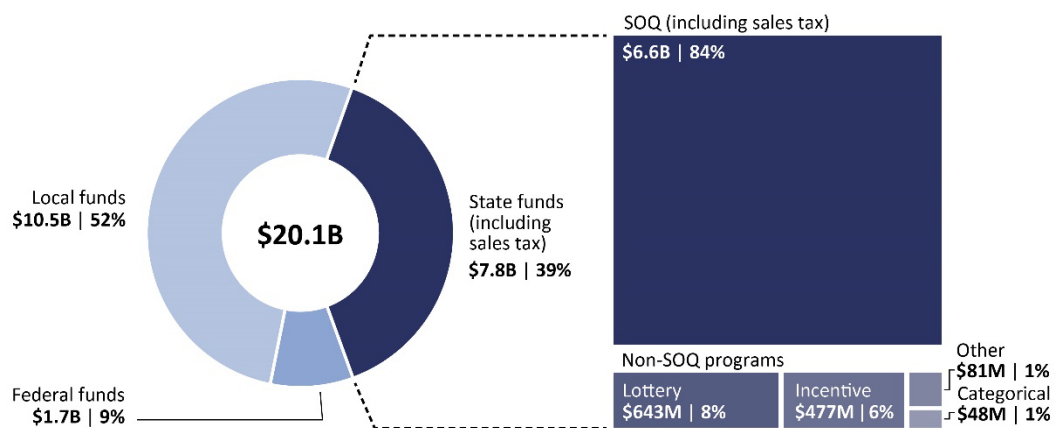
other funding source, federal funds, comprised less than 10 percent of total funding. In FY22, total division funding was \$24.4 billion. However, this amount was inflated by \$1.4 billion in additional, temporary federal pandemic funding.

In aggregate across all divisions, local funding represents slightly more than half of total funding (Figure 1-2). State funding represents about 40 percent, including funds from both SOQ and non-SOQ programs. State funding comes from general funds, lottery proceeds, and sales taxes revenues dedicated to public education.

Several large Northern Virginia school divisions account for a substantial portion of total aggregate local funding provided. For example, Fairfax County Public Schools, the state’s largest school division by far, accounted for \$2.5 billion of the \$10.5 billion in local funds.

However, most individual divisions rely heavily on state funds (Figure 1-3, next page). About two-thirds of divisions rely on the state for the majority of their funding. In a few divisions, state funding accounts for at least 70 percent of total funding.

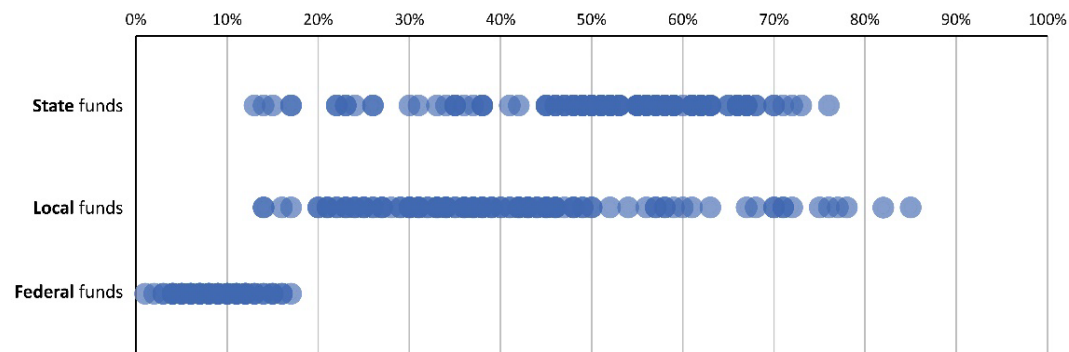
FIGURE 1-2
School divisions received \$20.1 billion in state, local, and federal funds (FY21)



SOURCE: VDOE annual superintendent reports and annual school report data.

NOTE: Includes all school division funding, regardless of source or purpose. FY21 federal funds were \$600M more than otherwise expected because of one-time pandemic relief funds. Local funds were \$150–\$250M less than otherwise expected because of reduced revenue from food services, tuition, refunds, fees, and other minor school division revenue sources.

FIGURE 1-3
Two-thirds of divisions rely on the state for a majority of their funding (FY20)



SOURCE: VDOE annual superintendent reports and annual school report data.

NOTE: Unlike Figure 1-2, this graphic only includes operating funds and uses FY20 data. FY20 data is used to avoid distortions from the COVID-19 pandemic, which temporarily increased federal funding, lowered local funding, and disrupted typical expenditures.

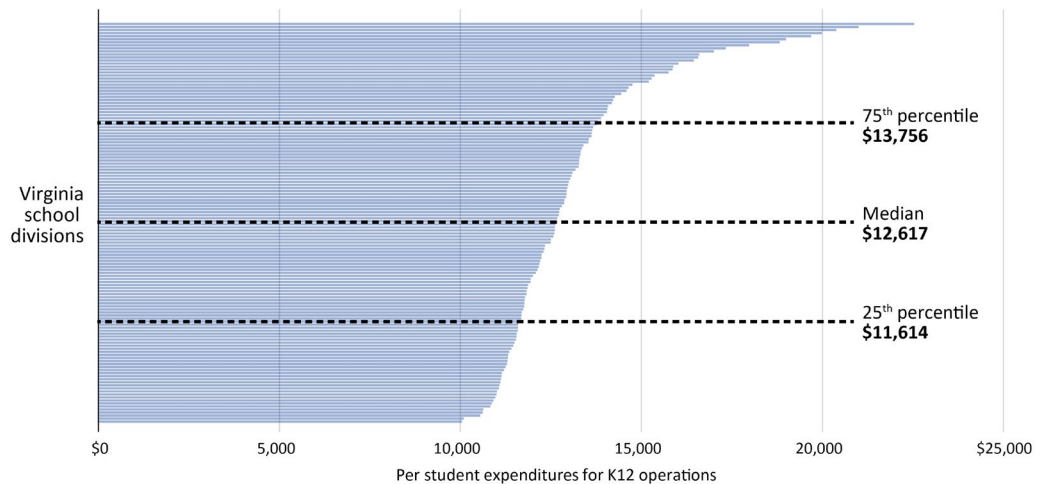
All school divisions receive federal funds, but federal funds are not a major source of revenue for any division. Many federal programs are targeted at low income students. Consequently, divisions with a higher proportion of low income students, such as the cities of Richmond and Petersburg, typically receive larger shares of federal funding. However, federal funds were still the smallest funding source in every division except one (Lee County), where it was the second smallest source.

Most funding that school divisions receive pays for K–12 operations (~90 percent), the largest component of which is for staff. The remainder goes toward capital expenses, debt service, transfers, and non-K–12 programs (pre-kindergarten, adult education, and other community programs). Staff compensation is by far the largest K–12 operating expense, accounting for 84 percent of expenditures. (See Appendix D for additional information on school division revenues and expenditures.)

Per student K–12 funding varies across divisions, largely due to local ability to pay and cost drivers

School divisions receive different levels of funding on a per student basis (Figure 1-4). These different levels reflect the variation in local ability to pay and the three major drivers of education cost (student needs, local labor costs, and division size). Local ability to pay, and the three major drivers of cost are largely outside the control of a school division but heavily influence their funding levels.

FIGURE 1-4
School division K–12 operating funding ranged from \$10,000 to \$22,500 per student (FY20)



SOURCE: VDOE annual superintendent reports and annual school report data.

NOTE: Shows FY20 funding expenditures, adjusted for inflation to FY21. Expenditures data is used to most accurately capture K–12 operations and exclude funding for capital and non-K–12 expenses. FY20 data is used to avoid distortions from the COVID-19 pandemic, which temporarily increased federal funding, lowered local funding, and disrupted typical expenditures.

Local ability to pay. The primary factor correlated with how much funding a division receives per student is the local government’s ability to contribute funding. Localities with stronger economies, higher property values, and wealthier residents are generally able to contribute more toward education. Divisions in localities with greater ability to pay typically receive more K–12 funding per student even though their state funding share is smaller, while divisions in poorer localities receive less.

Student needs. Divisions with more higher-need students—special education students, English language learners, and students from low income households—typically receive more state and federal funding per student. However, the total amount of funding they receive is often constrained by local ability to pay. For example, divisions in high poverty urban areas are typically not among the highest spending divisions, even though they typically have more higher-need students. In contrast, many large suburban divisions spend less per student than others, in part because they typically have relatively fewer higher-need students.

Labor Costs. Divisions with higher labor costs typically receive more funding per student, especially divisions in the Northern Virginia region. However, after adjusting for differences in local labor costs, there are not a disproportionate number of Northern Virginia divisions among the highest spending divisions.

Relationship between race and funding levels. Divisions with majority Black or minority students receive equivalent funding to majority white divisions, after accounting for differences in cost of labor and student needs. Similarly, there was no relationship between how much funding a division received and how many students it had from any given racial group.

Division size. Some divisions serve highly populous urban or suburban communities, while others serve very rural areas, which contributes to large differences in enrollment. The state’s 10 largest school divisions educate more than 50 percent of all the state’s public school students, while the 10 smallest divisions collectively educate less than 0.5 percent. Very small divisions typically need more funding per student because they cannot achieve the same operational efficiencies (economies of scale) as larger divisions. They have fewer students per staff position and fewer students over which to spread relatively higher fixed operations costs, such as facilities, transportation, and central office costs.

(See Appendix D for additional information on school division revenues and expenditures.)

Sufficient funding is essential but does not ensure a high quality education system

The amount of K–12 education funding has a major impact on the quality of education Virginia schools provide—and therefore, student performance. Other factors, including those within and beyond the direct control of school divisions, can also have a major impact. The Code acknowledges the importance of funding, stating education quality depends on the K–12 system providing “benefits and salaries necessary to ensure the availability of high quality-instructional personnel” and “the adequate commitment of other resources.”

Decades of research supports the critical role that funding has in quality K–12 education. For example, a recent meta-data study found that a \$1,000 increase in spending per student was associated with 2.3 percent higher graduation rates and a 6.5 percent increase in higher education attainment (National Bureau of Economic Research). School divisions need sufficient funding to hire enough high quality teachers, because teacher quality has repeatedly been shown to affect student performance more than any other factor. For example, a 2016 study found that high quality teachers can:

- raise student achievement by 1.5 grade levels,
- help close achievement gaps for low income students, and
- raise students’ future earnings after graduation.

Research has also found that having more teachers allows smaller class sizes, which have been shown to improve student comprehension and increase test scores.

The current recruitment and retention challenges faced by school divisions highlight the importance of school funding. Divisions are struggling to recruit and retain staff, resulting in substantial vacancies (sidebar). To cope with vacancies, divisions are increasingly hiring provisionally licensed teachers, asking teachers to teach outside their field of expertise, and increasing class sizes. Many division administrators reported that they are losing valuable teachers to better-funded school divisions, other states,

Public school teacher vacancies in Virginia have been increasing. Between 2015 and 2020, Virginia had an average of 870 vacant teacher positions. In 2021, Virginia had about 2,600 vacant teaching positions. By October 2022, divisions reported about 3,500 vacant positions (about 4 percent of the teacher workforce).

the private sector, or decisions to leave the workforce altogether. In responding to a JLARC survey, three-fourths of school staff indicated that low pay was a serious or very serious issue. Respondents indicated that raising salaries, more than any other action, would have a positive impact on morale and satisfaction.

Though funding is a critical component of education quality, other factors also affect student performance. External factors, such as whether children live in poverty or receive adequate support at home, can greatly affect academic success. Other factors within a school division's control are also important, including:

- systems of accountability for academic progress and teacher performance;
- instructional practices design and implementation;
- support service design and implementation;
- school-level operational decisions (e.g., how time is used during the school day and across the school year); and
- leadership and decision-making by each school board, division superintendent, and individual school principal.

2 Funding Compared with Benchmarks

While there is no single best way to determine ideal K–12 education funding levels, comparing Virginia’s K–12 funding to several relevant funding benchmarks can help determine whether Virginia’s education funding is within a reasonable range. Funding substantially above or below these benchmarks would suggest the SOQ funding formula yields too much or too little funding relative to need.

The benchmark funding comparisons included in this chapter rely on K–12 operating expenditures data. Comparisons use FY21 or earlier data because it is the most representative and complete data available. For benchmarks that compare Virginia to other states, the most recent publicly available expenditures data for other states is two to three years old. For benchmarks developed using Virginia-only data, FY22 data was available but was not used because it was not representative of actual ongoing funding. FY22 data is skewed by a historically large, one-time increase in federal funding (sidebar). FY23 data was not yet available, other than what the state had budgeted for that year. State budget data is incomplete because it does not include any information on local funding, a major part of total K–12 funding divisions receive.

Virginia divisions receive less K–12 funding per student than multiple benchmarks

Several different funding benchmarks were available to evaluate K–12 funding in Virginia. The first set of benchmarks was the actual K–12 funding provided in other states, controlled for differences in labor costs and student enrollment. The second set of benchmarks was a series of models designed to estimate Virginia-specific funding needs. The models were based on methods developed by education funding experts, including a (a) cost-function model adjusted specifically for Virginia by one of the leading national experts in K–12 funding, (b) model based on funding recommendations from studies of other states, adapted for Virginia, and (c) a staffing needs model based on recommendations of Virginia K-12 staffing workgroups convened by JLARC. All benchmark comparisons shown account for all K–12 *operating* funds from state, local, and federal sources (sidebar).

Funding for Virginia school divisions is below national and regional averages

Virginia school divisions receive less K–12 funding per student than the 50-state average, the regional average, and three of Virginia’s five bordering states (Figure 2-1). School divisions in other states receive about 14 percent more per student than school

The federal government provided a historic \$2 billion in one-time federal pandemic funds in FY21 and FY22. Divisions are expected to spend most of these funds between FY22 and FY24. Expenditures data does not differentiate by revenue source, so any analysis of spending data for these years would not be able to disentangle spending from one-time sources versus ongoing sources.

Benchmark comparisons used K-12 operating funding only. Capital funding (new projects, improvements, and debt service) was excluded. Funding for pre-K, adult education, and other community programs was also excluded. Funding amounts are determined using expenditures data instead of revenues data because this is the only way to accurately remove all capital and non-K-12 funding and compare funding across states.

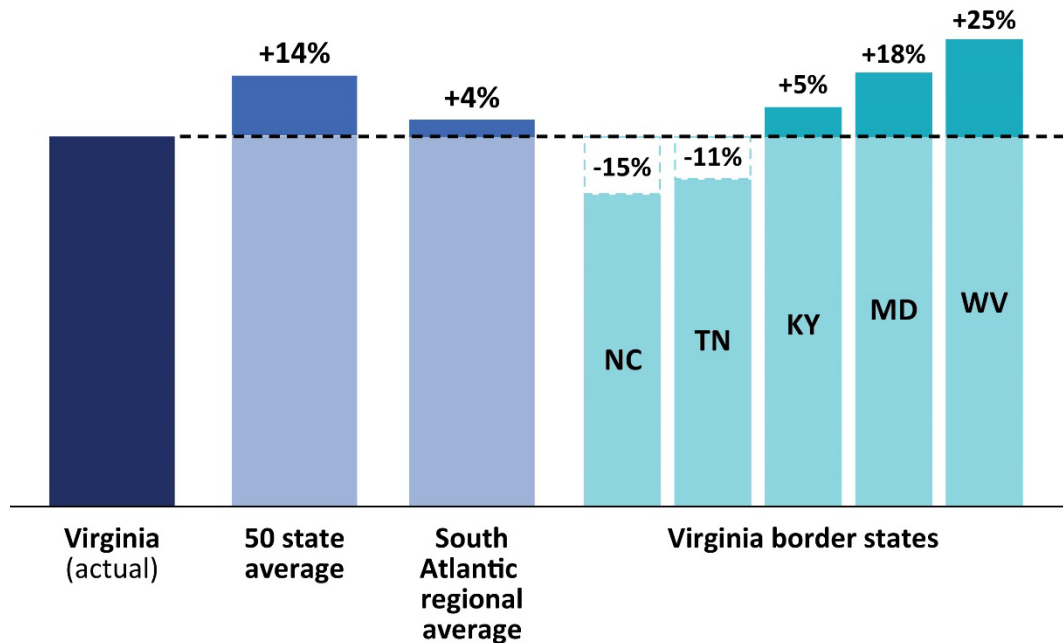
divisions in Virginia, on average, after normalizing for differences in cost of labor among states. This equates to about \$1,900 more per student.

School divisions in the South Atlantic region received, on average, 4 percent more per student than divisions in Virginia. Divisions in bordering states Kentucky, Maryland, and West Virginia all received more K–12 funding per student than divisions in Virginia, with West Virginia having 25.5 percent more partially because of its relatively low labor costs (after adjusting for these costs). Virginia divisions received more than divisions in two other bordering states—North Carolina and Tennessee—although Tennessee recently reformed its funding formula and is expected to substantially increase its funding starting in FY23.

FIGURE 2-1

Virginia school divisions receive less funding per student compared with national and regional averages, after adjusting cost of labor (FY20)

The most recent publicly available data about other states' K–12 spending is for FY20. The data does not capture recent substantial funding increases in two bordering states. Maryland enacted a new K–12 funding approach in 2020 and is embarking on a long-term plan to increase state and local funding by \$3.5 billion by FY30. Tennessee enacted a new funding approach in 2022, which is expected to increase funding by \$1 billion in FY23.



SOURCE: JLARC analysis of NCES data.

NOTE: Figures based on FY20 K–12 operating expenditures reported by NCES for FY20 (most recent year available) adjusted for cost of labor using the CWIFT for FY19 (most recent year available) to convert all states to Virginia-equivalent dollars. Virginia is in the South Atlantic census region with Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, and West Virginia.

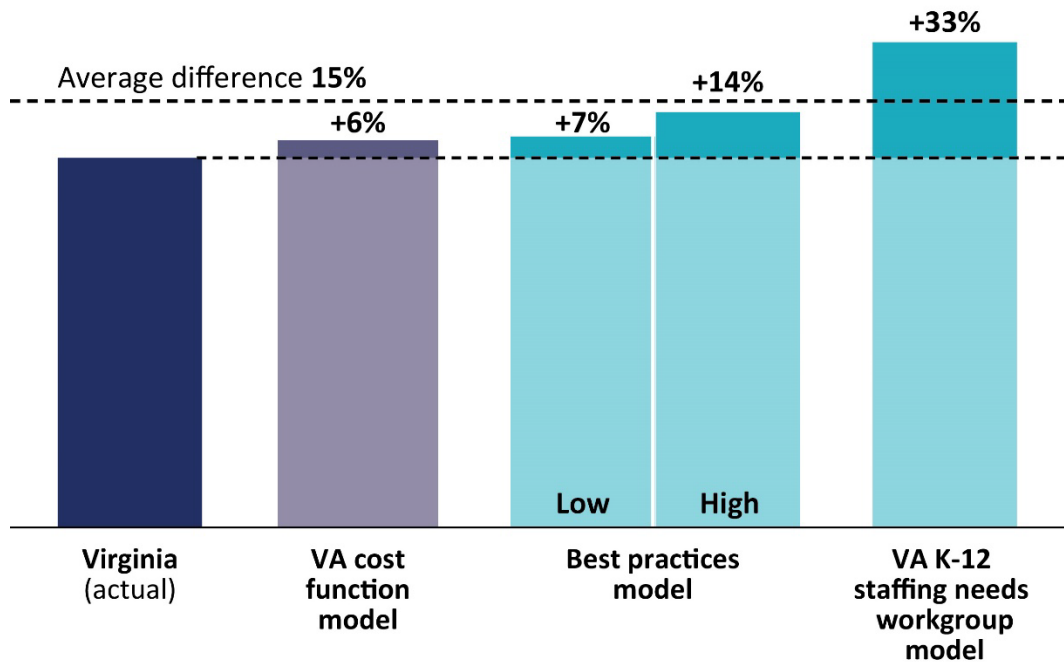
Virginia divisions receive less funding per student than what funding models estimate is needed

Virginia divisions receive less funding than what multiple funding models indicate is needed to provide students with a quality education (Figure 2-2). On average, the funding models estimated that Virginia school divisions would need 15 percent more funding per student than they currently receive. The models ranged from 6 percent more funding needed to more than 30 percent more. The models also estimated that 73 percent to 89 percent of the state's school divisions received below benchmark funding, depending on the model and assumptions used.

JLARC staff used three different models to estimate funding needs. Each funding model has strengths and weaknesses, but these three types of models have been used widely over time by education experts and other states to assess K–12 funding. The three models are described below.

- **Cost-function model.** JLARC hired a leading education funding expert to adapt an existing, nationally recognized econometric funding model specifically to Virginia. The cost function model predicts K–12 funding needs using statistical relationships to actual funding, standardized test scores, school division characteristics, and student demographics. Similar models have been used by experts to estimate K–12 funding needs in at least eight other states over the past decade.
- **Best practices model, based on recommendations from other states.** When other states study their K–12 education funding approaches, they often perform a “cost study” to estimate the funding amount needed. Cost studies typically use the same or similar models used in this report. JLARC staff reviewed recommended funding amounts from 31 other state cost studies, adjusted funding for inflation and cost of labor, then selected the midpoint funding levels to apply to Virginia's student population.
- **Virginia K-12 staffing needs workgroup model.** In fall 2022, JLARC convened seven workgroups involving more than 40 Virginia teachers, principals, support staff, central office administrators, and program directors. Each workgroup was asked to estimate the type and number of staffing and other resources needed to operate schools of different types and sizes with higher or lower student need populations. JLARC staff modeled how much funding would be required to provide these staffing levels, using a refined version of the current SOQ formula. Similar workgroups have been used by experts to estimate K–12 funding needs in at least 11 other states over the past decade.

FIGURE 2-2
Virginia school divisions receive less than what funding models estimate is needed (FY21)



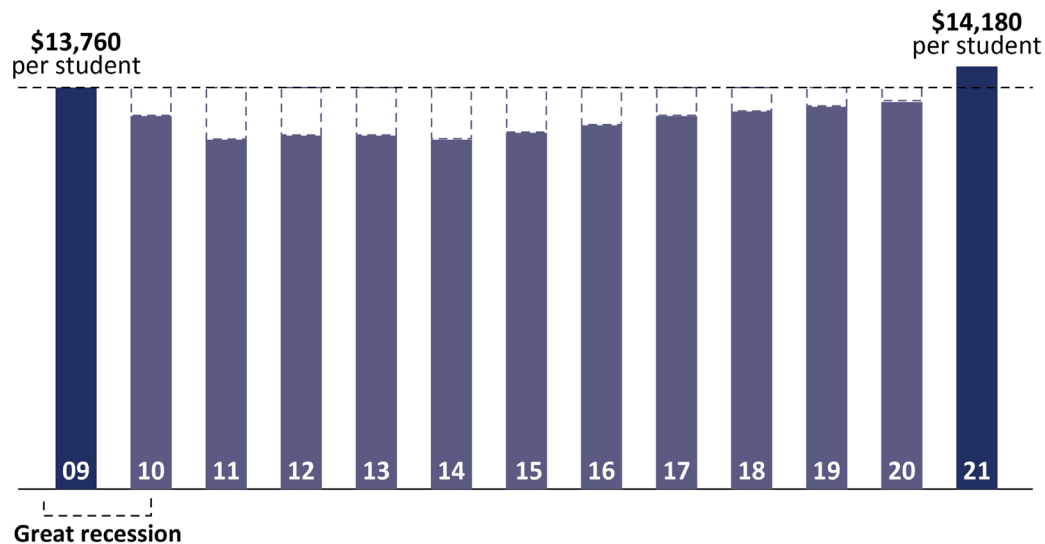
The COVID-19 pandemic increased FY21 per student funding in two ways. (1) School divisions received around \$2 billion in one-time federal funds. While some of this funding was spent in FY21, it is expected that most will be spent from FY22 to FY24. (2) Student enrollment in FY21 dropped by 3.5 percent compared with the prior year. Because there were fewer students, and total funding did not decline, the amount of funding provided on a per student basis was higher than it would have otherwise been if enrollment had not changed.

SOURCE: JLARC analysis of cost studies, research literature, expert interviews, and educator work groups, and JLARC modeling of funding needs.
 NOTE: Best practices funding estimates include more and less conservative estimates, whereas the others were only a single point estimate.

K–12 funding is back to pre-Great Recession level, though funding for some functions is still lower

K–12 operating funding in Virginia declined substantially following the Great Recession, but recently returned to pre-recession levels, after adjusting for inflation. Funding per student declined steeply in the five years following the Great Recession, to a low of 8.1 percent below pre-recession levels in FY14 (Figure 2-3). Funding gradually increased over the next 10 years, surpassing pre-recession levels in FY21. FY21 per student funding increased slightly above where it would have otherwise been as a result of COVID-19 pandemic effects (sidebar). FY22 per student funding is higher, but is not presented because it is distorted by large amounts of one-time federal funding.

FIGURE 2-3
K–12 operating funding has returned to inflation-adjusted pre-Great Recession levels



SOURCES: VDOE financial and enrollment data. BLS data on Consumer Price Index.

NOTE: In Virginia, the COVID-19 pandemic began in March 2020, toward the end of FY20. The pandemic affected how funding was used that year, mainly because of early school closures.

However, some funding categories have not returned to pre-recession levels. Funding for regular instruction had not fully returned to pre-recession levels, and funds in this category are being used to cover more student needs. Per student funding for regular instruction dropped by a higher percentage than total funding, and as recently as FY20 was 5.5 percent below its pre-Great Recession amount, after adjusting for inflation. Regular instruction includes services for fast-growing populations of at-risk students and English learners who educators report have increased needs since the COVID-19 pandemic. The reduced funding requires divisions to spend less to support these special needs students than is typically necessary or constrain spending in the general classrooms. In FY21, per student funding for regular instruction was 1.5 percent lower than it was pre-recession.

Funding for career and technical education had also not yet returned to pre-recession levels. Career and technical education programs provide students with practical knowledge and skills in areas such as building and mechanical trades, health care, office management, computer science, and cosmetology. These programs experienced one of the biggest funding reductions following the Great Recession, and FY21 funding remained 5.5 percent lower than pre-recession levels.

At the individual school division level, some divisions have fully returned to funding levels prior to the Great Recession and others have not. In one-third of all divisions, per student funding still trails the pre-recession level. In twelve of these divisions, per student funding remains at least \$1,000 less than it was (as of FY21).

SOQ formula results in substantially less funding than actual K–12 spending and benchmarks

The state has adopted the SOQ formula as the main way to determine how much funding (state and local) Virginia school divisions need. This total SOQ funding can therefore be viewed as the amount the state has determined is necessary to meet the constitutional goal of providing a high quality education.

The prior analyses in this chapter compared total, actual K–12 operating funding from all sources (state, local, federal) to other states and funding model results. This section compares *only* SOQ formula funding (state and local) to actual total funding and benchmarks. The SOQ formula funding amounts presented here include both state and local shares, before any deduction of federal funds, meaning they represent the total amounts the SOQ formula calculates are needed.

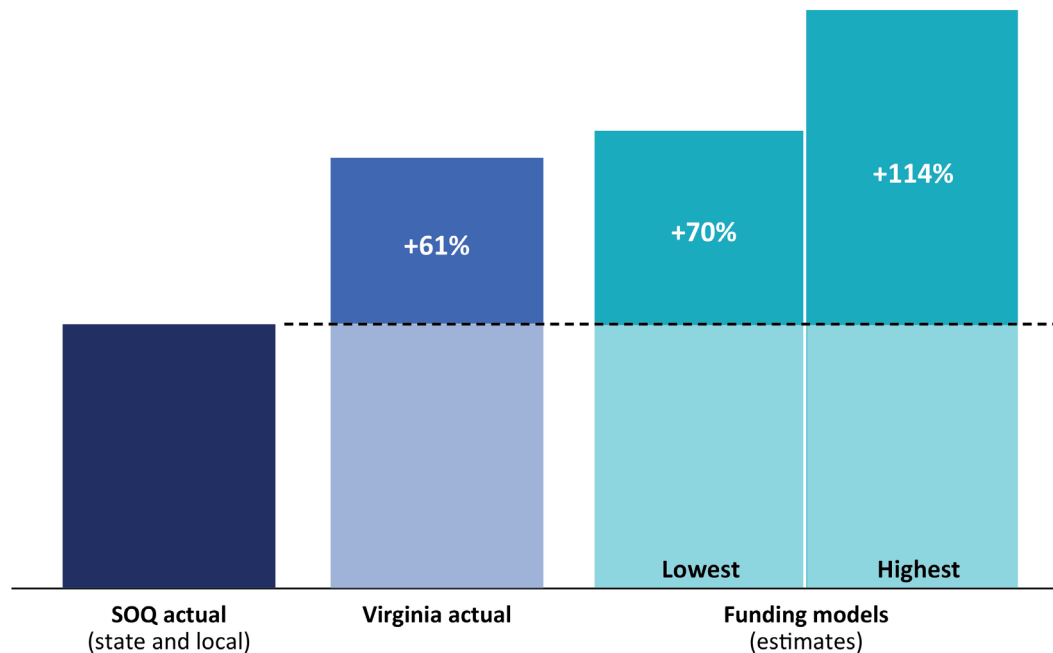
State SOQ formula yields substantially less funding compared to actual practice and benchmarks

The SOQ formula is intended to calculate the funds needed to provide a high quality education, but SOQ total funding amounts are well below actual school division expenditures. For FY21, the SOQ formula calculated school divisions needed a total of \$10.7 billion in funding, but divisions actually spent \$17.3 billion on K–12 operations, meaning the formula provided \$6.6 billion less than what was spent (a 38 percent difference). Funding differences in recent years have been about the same. The vast majority of the additional funding for school divisions comes from local governments.

SOQ-calculated total funding was also substantially less than the funding model estimates of need (Figure 2-4). The models estimate divisions need 66 percent to 93 percent more funding than the SOQ formula calculates is needed, depending on the model used.

Some school divisions could be spending more than what is needed for a high quality education, but this does not appear to be a key reason why SOQ funding is so much lower than actual expenditures. After adjusting for differences in the three major drivers of divisions costs (student need, local labor costs, and enrollment), only two school divisions spend substantially more than their peers on K–12 education. Additionally, actual K–12 spending from *all* sources across *all* divisions is still below the lowest funding benchmark.

FIGURE 2-4
SOQ amount is substantially less than what is actually provided to divisions and what funding models estimate is needed



SOURCE: JLARC staff analysis of VDOE data on SOQ funding and school division expenditures, cost studies, research literature, expert interviews, and educator work groups, and JLARC modeling of funding needs.

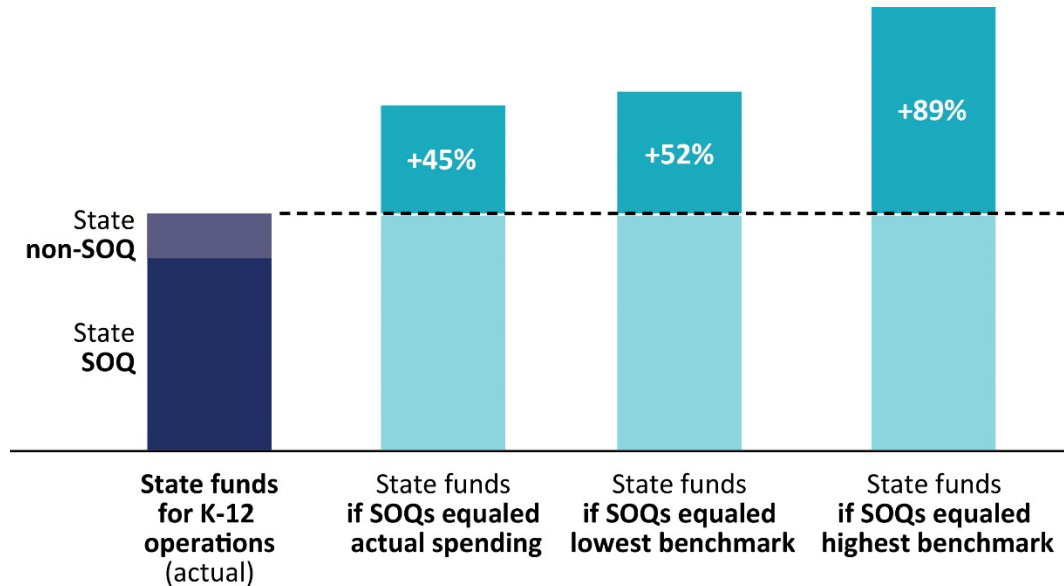
NOTE: SOQ actual funding amount is what the SOQ formula calculates is needed to operate all of Virginia's school divisions and educate all of its public school students before federal funds are deducted and before funding is divided between state and local governments.

State funding would be higher if SOQ formula yielded the amount that divisions actually spend

If the SOQ formula estimated funding needs that reflected actual total spending, the state funding share would substantially increase. Adjusting the SOQ formula to produce a total K–12 funding amount that matches divisions' actual expenditures (funding needs) would increase state funding by 45 percent, or \$2,700 per student (Figure 2-5). Adjusting the SOQ formula in this way would also increase local funding obligations, but all localities are already contributing more than what is required; three-quarters are already contributing 45 percent or more above what is required.

FIGURE 2-5
State funding is substantially lower than it would be if SOQ funding reflected actual spending or funding need benchmarks

The General Assembly has been increasing state funding for K–12 during the current biennial budget. For example, state funding for K–12 increased 9 percent (\$740 million) in FY23, and the state provided \$950 million in one-time funding for school construction and development of lab schools. The full extent of the increases, though, is unknown as this report is being finalized because of continued state budget negotiations. The exact amounts and full impact of these funding increases will not be known until FY23 and FY24 are complete, and school divisions report their total funding data.



SOURCE: JLARC staff analysis of VDOE data on SOQ funding and school division expenditures, cost studies, research literature, expert interviews, and educator workgroups, and JLARC modeling of funding needs.

NOTE: State funding includes both SOQ and non-SOQ funding to show the full state contribution; while SOQ funding increases in each scenario, non-SOQ funding is held constant. State SOQ funds in this figure represent actual state SOQ funds that were provided, after federal deductions and apportionment between state and local governments.

Smaller divisions in less wealthy localities are typically most reliant on state SOQ funding and most adversely affected if this funding is low

The school divisions that rely most heavily on state funding are most adversely affected by SOQ funding formula calculations that are substantially less than actual expenditures. These divisions tend to receive less total funding for K–12 operations than other divisions, averaging about \$2,900 less per student, even after accounting for the additional federal funds many of these divisions receive. The school divisions most reliant on the state are generally in less wealthy localities, including both urban and rural jurisdictions. They are typically small or midsize divisions, but also include a few larger divisions. Divisions in the Southwest, Southside, Western, and Tidewater regions are especially dependent on state funds. However, state-dependent divisions are found in all regions of Virginia.

Majority of divisions interviewed believe funding is insufficient

Opinions of school division administrators were generally consistent with the findings from the quantitative analysis. JLARC staff interviewed school division administrators

about whether the funding they receive allows them to successfully operate their schools and educate students. JLARC staff conducted 25 division interviews with superintendents, finance directors, and other administrators (from one-fifth of all divisions). These divisions represented all regions of the state and various division sizes, local characteristics (e.g., population density and wealth), and student populations.

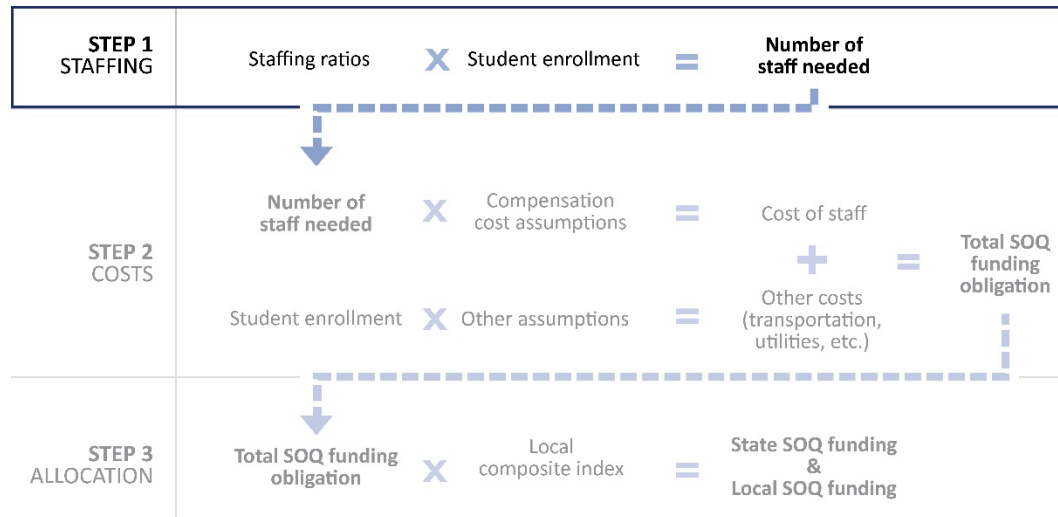
Divisions generally described funding as insufficient, especially the part of their total funding allocated to them through the SOQ formula. Of the 25 divisions interviewed, 15 unequivocally described the funding they receive as insufficient. Four other divisions thought the funding was probably insufficient. Two divisions, though, described funding as sufficient. When asked specifically about the SOQ (state and local) portion of funding their divisions receive, division administrators strongly believed they could not operate their divisions based solely on the amount that the SOQ formula calculates is needed.

Divisions cited a variety of negative impacts when they receive less funding than needed. These negative impacts center around two main themes: problems maintaining a high quality workforce and resources not keeping pace with increasing student need (a long-term trend cited in several prior JLARC reports, including a 2015 review of K–12 efficiency and effectiveness). For example, they noted that even before the pandemic, it was difficult to recruit and retain math teachers who can often easily find employment in the private sector. Administrators said recruitment and retention challenges have been compounded by the pandemic. Administrators noted the pool of qualified candidates for teaching positions had shrunk, and they also have challenges competing for support positions such as bus drivers and facility maintenance staff. Administrators also observed that funding has not kept pace with increasing student needs in recent years. Need has increased for special education services, English language learner support, and remediation support for students (which increased substantially because of the use of remote instruction during the pandemic).

3 SOQ Formula: Staffing Needs

The first step in the Standards of Quality (SOQ) formula is calculating the total number of staff positions needed for each school division. The formula does this by taking staffing ratios—set in the Code of Virginia, Appropriation Act, and state regulations—and multiplying them by student enrollment in each division (Figure 3-1). Staffing ratios are a major driver of the SOQ formula and how much funding school divisions receive from the state and local governments. If standards underestimate the number of staff or omit positions needed by school divisions, divisions are not likely to receive sufficient funding. In contrast, if standards overestimate the number of staff or include unnecessary positions, divisions will be overfunded. Therefore, establishing staffing ratios with clear and justifiable rationales that reflect prevailing practice is fundamental to an effective funding formula. (See Appendix E for more information on the criteria used to assess various elements of the SOQ formula throughout the remainder of this report.)

FIGURE 3-1
SOQ funding is calculated in three steps



SOURCE: JLARC analysis of SOQ formula.

Employing enough instructional and student support staff is essential for providing students with a high quality education. Class sizes should be small enough for teachers to identify and respond to each student’s needs. Enough instructional support staff are needed to work with struggling students and further develop teachers’ skills. Schools need enough nurses and mental health staff to provide timely care to students.

School divisions also need the right amount of staff to carry out the day-to-day operations that allow schools to function. They need enough clerical staff to answer calls from parents and maintain financial records, bus drivers to transport children to and from school, and custodial staff to clean classrooms, bathrooms, and common areas.

Virginia’s SOQ funding formula is based on staffing standards

School divisions are required to comply with staffing and other SOQs. Divisions must employ at least a minimum number of staff, as calculated by SOQ staffing ratios and student enrollment. They must also meet SOQ requirements related to the Standards of Learning, Standards of Accreditation, and professional development, among others. School divisions annually report on whether requirements have been met.

Staffing needs are calculated using a mix of *fixed* staffing standards, set in state law and regulations, and *prevailing* staffing ratios, calculated separately under the formula (Table 3-1). While all of these calculations determine state funding, only the fixed standards serve a secondary function as minimum staffing requirements for school divisions, with some flexibility for certain positions (sidebar).

The SOQ formula includes fixed staffing standards for 15 positions, including most major instructional and some support positions. Staffing standards for teachers are ratios of teachers to students, varying by grade level. Most other staffing standards are ratios of full-time equivalent (FTE) positions needed per 1,000 students in a division, although some are based on the number of positions needed per school.

For many positions, especially those that do not work directly with students, there is no fixed state staffing standard. For these positions, the SOQ formula calculates a “prevailing” staffing ratio of staff per 1,000 students using data on actual school division employment levels. There are 13 staff categories calculated in this manner, including most central office positions and all facility maintenance and operations staff. Prevailing ratios are recalculated every other year. From 2009 until some recent adjustments have been made, the prevailing staffing ratio for designated positions has been capped in the Appropriation Act, commonly referred to as the “support cap” (discussed in more detail in Chapter 4).

The SOQ formula combines fixed and prevailing staffing ratios with projected student enrollment to calculate the number of staff that are assumed to be needed in each school division. Using the staffing standard of one gifted teacher per 1,000 students as an example, a division with 13,600 students would be assumed to need 13.6 gifted teachers. These staffing calculations are used together with salary and other cost assumptions to determine state and local government SOQ funding obligations (Steps 2 and 3 of the formula, per Figure 3-1).

Additional staffing needs for special education students are discussed in Appendix F. Staffing needs for English learners are discussed in Appendix G.

TABLE 3-1
SOQ formula calculates staffing needs using a mix of fixed and prevailing staffing ratios

Category	Position	Staffing ratio
General instruction	General classroom teacher	1 per 24 students in kindergarten – 3 rd grade 1 per 25 students in 4 th grade 1 per 21 or 25 students in 5 th – 7 th grade ^a 1 per 21 students in 8 th – 12 th grade Additional ratios for max class size, English teachers
	Elementary art, physical education, or music teacher	1 per 200 elementary students
	Gifted teacher	1 per 1,000 students
	Vocational teacher	Prevailing ratio of staff per 1,000 students enrolled in vocational education, adjusted to comply with regulatory maximum class sizes
	Prevention, intervention, remediation teacher ^b	Variable ratio, ranging from 1 per 10 students to 1 per 18 students, where the number of students is determined by SOL failure rates and assumptions about time spent in remediation
	Special education teacher and aide	Complex set of 60 ratios and student weights applied to counts of special education students
	English learner teacher	1 per 50 English language learner students
	Kindergarten aide	1 per kindergarten teacher with more than 24 students ^c
	School leadership & instructional support	Principal
Assistant principal		0.5 to 1 per 600 to 900 students, depending on school size and level. Exceptions: 0 for schools below 600 students; maximum 1 per elementary school of any size.
Librarian/media Specialist		0.5 to 2 per school, depending on school size and level
Instructional support ^d		Prevailing ratio of staff per 1,000 students
Reading specialist		1 per 550 early elementary students (K-3)
Student counseling & health		Counselor
	Specialized student support ^e	1 per 333.3 students
	Other health	Prevailing ratio of staff per 1,000 students
Operations and central office administration	Central office administration ^f	Prevailing ratio of staff per 1,000 students
	School clerical staff	Prevailing ratio of staff per 1,000 students
	Facility maintenance and operations	Prevailing ratio of staff per 1,000 students
	Technology support	1 per 1,000 students
	Technology resource teacher	1 per 1,000 students
	Other technology	Prevailing ratio of staff per 1,000 students

SOURCE: JLARC analysis of Code of Virginia, Appropriation Act, and Virginia Administrative Code.

NOTE: Table reflects staffing standards applicable to FY23. Table is limited to staffing standards applicable to all divisions consistently, therefore omits positions depending on division's share of at-risk students such as prevention/intervention/remediation teachers (see Chapter 6). ^a Depends on school's grade range and can vary based on several different factors used by VDOE staff. ^b This ratio is nominally used to calculate the number of teachers needed, but in practice funding from this ratio can be used for several purposes other than teacher salaries, such as tutoring services or for hiring instructional specialists. ^c For each school, formula calculates all possible combinations of kindergarten classrooms that (1) include aide if classrooms exceed 24 students and (2) never exceed 29 students per classroom. Then the formula selects the combination costing the least amount of money to the state, based on prevailing kindergarten teacher and aide salaries. ^d Can include curricula leads, teacher coaches, deans, counseling directors, and others. ^e Category created by the General Assembly in 2021. Consists of psychologists, social workers, school nurses, and other licensed mental and physical health staff. ^f Can include assistant superintendents, program directors and coordinators, and other office professionals. Superintendents are calculated at one per school division.

SOQ formula calculates less staffing than actual practice and workgroup estimates

One way to evaluate staffing standards is to compare what the SOQ formula calculates is needed to the actual number divisions employ. Another is to compare the standards to staffing needs estimates developed by workgroups of Virginia K–12 professionals in 2022. JLARC staff organized and facilitated seven Virginia K–12 staffing workgroups of teachers, principals, support staff, and central office administrators and directors. Each of the workgroups developed estimates of staffing needs in a specific area based on their professional knowledge and real-world experiences (sidebar). The workgroups were directed to develop staffing that “must prudently use government resources” and “be feasible for a real-world school division to implement.” JLARC converted those specific recommendations into operational rules and ratios and then applied them to Virginia school divisions. At least 28 other states (11 in the past decade) have used workgroups such as these to assess state education funding. (See Appendix B for details on workgroup methodology.)

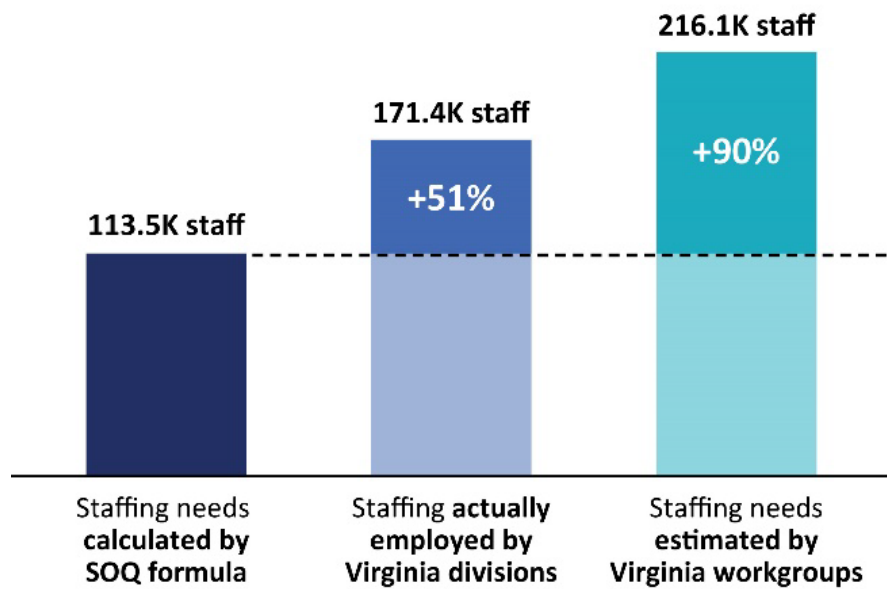
Virginia K-12 staffing workgroups developed staffing need estimates in six areas: (1) instructional and administrative staff needed at the elementary, (2) middle, and (3) high school levels; (4) support staff needed for each school level; and (5) teachers and support staff needed for special education and (6) English learner students. The final group (7) reviewed the staffing estimates developed by the other groups and proposed changes, and also added central office staff.

While some wealthy divisions may employ more staff than they need, it seems unlikely that this is pervasive given that school division budgets require approval by locally elected councils and boards of supervisors. Division budgets must be approved by school boards in public meetings. A 2015 JLARC report found school divisions were spending efficiently.

Total statewide staffing need calculated by SOQ formula is lower than actual employment levels and workgroup estimates

The number of staff calculated by the SOQ formula is much lower than the number employed by divisions or estimated to be needed by workgroups (Figure 3-2). In FY21, the SOQ formula calculated that 113,500 FTE staff were needed to perform the various instructional, student support, and administrative functions in the K-12 system. However, divisions actually employed 171,400 staff to perform these responsibilities, which was 51 percent (57,900) more than the formula calculated was necessary. The difference was even larger between what the formula estimates is needed and estimates developed by the Virginia K–12 staffing workgroups. The workgroups estimated more than 100,000 staff statewide were needed beyond what the SOQ formula calculates.

FIGURE 3-2
SOQ formula staffing standards yield fewer staff than actual division employment and workgroup estimates



SOURCE: JLARC analysis of Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K–12 staffing workgroup meetings.

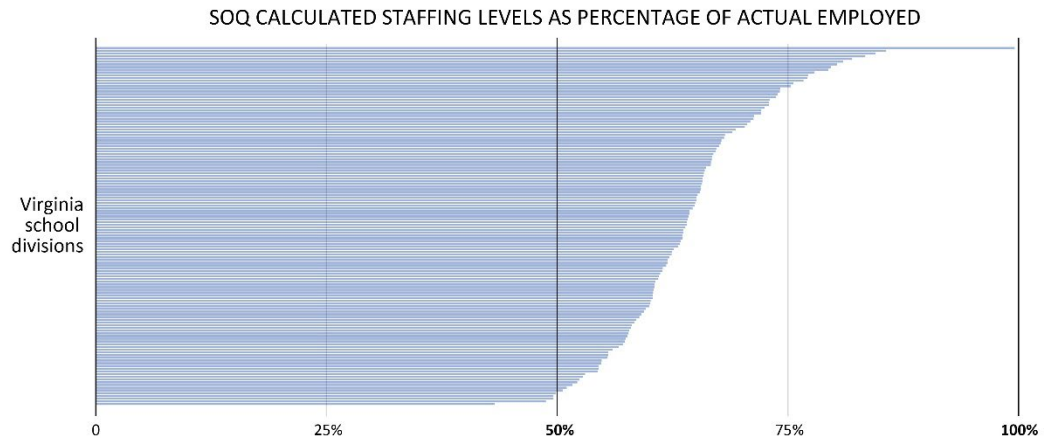
NOTE: For comparability, excludes positions in categories for which state funding is not calculated through staffing standards: food, capital projects, substitutes, and transportation. Assumes workgroup recommendations are the same as employed positions for facilities operations and maintenance, categories that workgroups did not discuss.

SOQ formula yields fewer staff than are actually employed in all school divisions

The SOQ formula estimates fewer staff are needed in each of Virginia’s 134 school divisions. Between FY19 and FY21, every school division in the state employed more staff than the SOQ formula calculated they needed. In FY21, the SOQ formula calculations of need ranged from as low as 43 percent of the number of staff actually employed in a division to 99 percent of the number of staff actually employed in a division (Figure 3-3). In FY17 and FY18, though, one division (Manassas Park City) employed fewer staff than the SOQ formula calculated was necessary.

In interviews, many school division administrators characterized the state’s staffing standards as unrealistic, often citing the difference between SOQ staffing calculations and the number they actually needed to employ. Administrators said: “It’s a misnomer to call it the SOQ; it’s not quality at all,” and “If we just funded at SOQ level, it would be a catastrophe.” Other school divisions and state professional associations agreed that the SOQs significantly underestimate the number of staff needed.

FIGURE 3-3
SOQ formula staffing calculations were lower than actual employment in all school divisions (FY21)



SOURCE: JLARC analysis of Annual School Report data.

NOTE Excludes positions in categories for which state funding is not calculated through staffing standards: food, capital projects, substitutes, and transportation.

SOQ formula staffing ratios and calculations

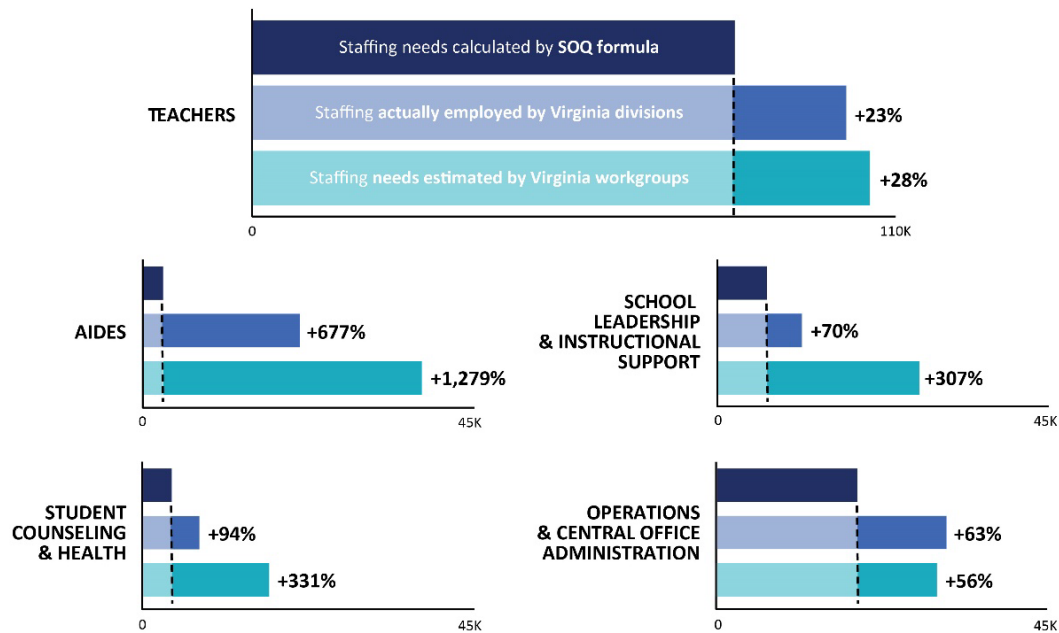
- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

SOQ formula yields fewer staff than employed for all position groups, especially teachers and aides

Within the total staffing discussed above, the SOQ formula calculations were below actual staffing and workgroup estimates for all staffing categories, to varying degrees (Figure 3-4). Teachers accounted for one-third of the total difference between actual employment and SOQ formula calculations. (Even though the percentage difference between SOQ calculations and actual staffing was smaller than other positions, teachers accounted for a majority of the total difference in staff). Instructional aides accounted for another one-third of the total difference. The remaining position groups also had large differences but represent a smaller percentage of total staff.

FIGURE 3-4
SOQ formula staffing calculations were lower than actual employment and Virginia staffing workgroup estimates for all position types



SOURCE: JLARC analysis of Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K–12 staffing workgroup meetings.

NOTE: Figure 3-4 differs from Figure 3-5 in the source year (FY21 for the former, FY23 for the latter), data source (Annual School Report for the former, Positions & Exits for the latter), and scope (all teachers for the former, only general classroom teachers for the latter). Because Aides includes all those used for instructional purposes (e.g., general classrooms, special education), which excludes cafeteria monitors, bus aides, etc. Student health includes mental health personnel and service providers for students with disabilities (e.g., physical therapist). For comparability, workgroup estimates of need are assumed the same as employed positions for facility operations and maintenance (categories that workgroups did not discuss).

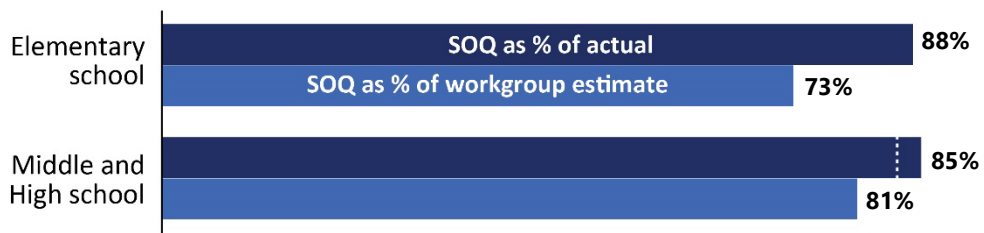
SOQ formula estimates fewer teaching staff, but by proportionately less than other positions, and teacher staffing ratios are overly complex

The SOQ formula calculates the number of teachers needed using several student-to-teacher ratios. There are separate staffing calculations for different types of teachers, including general classroom, elementary resource (art, music, physical education), career and technical education, gifted education, special education, and English language learners. There is funding to provide prevention, intervention, and remediation services to at-risk students, but this is not specifically designated for additional teachers and can be used for other purposes, such as instructional tutoring or support services.

SOQ formula underestimates general classroom teachers by smaller percentage than other staff, but the impact is substantial because they represent largest category of staff

General classroom teachers account for about 38 percent of all school division staff. The current SOQ staffing calculations result in fewer general classroom teachers than schools actually employ and the Virginia K–12 staffing workgroups estimate is necessary. In FY21, the total number of elementary (K–5) general classroom teachers the formula calculated was 88 percent of actual employment and 73 percent of what the Virginia workgroups estimated is necessary. The total number of middle and high school general classroom teachers the formula calculated was 83 to 85 percent of actual employment (the range reflects data limitations), and 81 percent of what workgroups estimated is needed (Figure 3-5). This equates to about 9,100 general classroom teachers who are employed beyond the SOQ funding formula’s calculations. The SOQ formula would need to add a total of 16,700 general classroom teachers to match the workgroup benchmark.

FIGURE 3-5
SOQ formula calculates fewer general classroom elementary, middle, and high school teachers than actually employed and staffing workgroup estimates



SOURCE: JLARC analysis of Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K-12 staffing workgroup meetings.

NOTE: Limited to SOQ, so excludes other funding sources such as K-3 class size reduction. Middle and high school includes CTE teachers because they were impossible to differentiate from teachers of other subjects in Positions & Exits data. Excludes gifted, elementary resource, English learner, and special education teachers, as well as funding for prevention, intervention, and remediation.

Formula’s calculation of general education teachers is overly complicated

The calculation for teachers uses seven ratios established in the Code of Virginia (Table 3-2). For each grade level, the formula calculates the number of staff needed under two to four ratios and then selects the ratio that generates the most staff. Some ratios depend on whether the school is an elementary, middle, or high school, but these classifications do not always align with how Virginia schools are structured. Consequently, the Virginia Department of Education (VDOE) has adopted some operational rules to apply the ratios. Under these rules, different staffing ratios are used to determine how many teachers are needed for fifth through seventh grades, depending on how a given school is structured (rather than what is appropriate for the grade level). For example, the formula calculates fewer sixth grade teachers per student if sixth grade is

taught in an expanded elementary school (grades K–6) than in a standard middle school (grades 6–8), even though a sixth-grader in either school should be receiving the same quality of instruction.

After modeling the general classroom teacher calculations, JLARC staff found that four of the seven ratios used in the formula did not have any practical effect on funding. The three maximum class size ratios were always overridden by another ratio, while the student-English teacher ratio provided only 200 teachers (FY23), which is 0.4 percent of general classroom teachers calculated by the formula. These ratios are essentially unnecessary for funding calculations.

Although JLARC staff were able to describe and mostly recreate the general classroom teacher calculations, it required extensive discussion with VDOE and the re-creation of the SOQ model IT program. None of this information about how the ratios interact and assumptions used has been available to legislators or stakeholders. VDOE’s operational rules are not readily apparent to outside parties and only some are available in its user manual. Consequently, it has been unclear how the ratios determine funding and whether the ratios reflect actual staffing needs.

TABLE 3-2
Formula uses several different ratios to calculate general education teachers

Grade	Ratios that impact SOQ funding		Additional ratios that have no or minimal impact on SOQ funding		
	Division-wide student-teacher ratio	School-wide student-teacher ratio	Maximum class size	Student-English teacher ratio	
Elementary K 1 2 3 4	24 to 1		24; 29 w/ aide		
			30		
			35 ^a		
					25 to 1 ^a
Middle 6 7		21 to 1			
				High 9 10 11 12	

SOURCE: JLARC analysis of Code of Virginia, Appropriations Act., and communications with VDOE staff.

NOTE: ^a Although statute limits to sixth grade, VDOE also applies to seventh grade.

Because many teacher ratios are not practically used or needed, the ratios could be simplified and set in a way that more closely aligns with how schools are actually staffed. Simpler ratios would result in more accurate calculations of staffing needs and would be more understandable to stakeholders.

Separate ratios for elementary resource, gifted, and career and technical education teachers may not be necessary for funding calculations

In addition to the general classroom teacher ratios, there are potentially unnecessary, separate ratios for teachers who teach certain types of classes: elementary resource (art, music, physical education), gifted education, and career and technical education (CTE). Unlike special education and English learner teachers, these teachers provide instruction to some or all of the general student population at their schools (including gifted teachers, who can work with students who are gifted in some subjects but not others). While some of these teachers may actually teach more students than a general classroom teacher, others may teach the same or even fewer students than a general classroom teacher. For example, an elementary gym teacher could have more students per class than a general classroom in their school, but only if the schedule allows for two classrooms to be combined during gym class. A gifted program teacher, such as an honors class teacher, may have more or fewer students depending on the number of gifted students. A high school CTE class that relies on specialized equipment to train students, such as welding, could be much smaller than a general classroom because of equipment availability and safety concerns. Some gifted and CTE teachers also spend part of the day teaching in the general classroom, meaning sometimes there is no clear, practical distinction between those teachers and general classroom teachers.

While resource, gifted, and CTE teachers need to be accounted for in funding calculations, it may make more sense to include them as part of the general teacher ratios than as separate groups. There is little evidence that providing separate calculations for these teachers results in more accurate determinations of staffing needs.

Special education teachers are underestimated, and calculations are overly complex

The SOQ formula estimates that fewer special education teachers are needed than actual staffing and the K–12 staffing workgroup estimates. For FY23, the SOQ formula calculated 13,300 special education teachers were needed, which was 93 percent of how many are actually employed by school divisions and 66 percent of what the workgroup estimated was needed. Special education staff themselves also have previously reported that staffing in many divisions is lower than what they believe it should be. In a 2020 JLARC survey of special education directors, 54 percent said that Virginia’s standards do not adequately reflect staffing needed to provide an appropriate education for students with disabilities.

Due to the complexity of the special education calculations, JLARC staff were unable to determine exactly why the calculations were resulting in fewer teachers than needed. The formula uses *more than 60* special education staffing ratios and student weights, depending on different combinations of student disabilities and time spent in the general classroom. The formula also calculates both teachers and aides, making it difficult to discern the calculation behind the number of teachers associated with

any given set of ratios. The state does not collect detailed data on actual special education staffing arrangements that could be used to assess the ratios. For example, there is no data on the numbers of teachers, aides, and students (by diagnosed disability) in self-contained classrooms.

Additional information on special education programs, staffing, and funding is provided in Appendix F.

English learner teacher ratio underestimates the number of teachers needed per student

The SOQ formula indicates that fewer English learner teachers are needed, compared to actual staffing and the staffing levels recommended by the Virginia staffing workgroups. In FY23, the number of English learner teachers calculated (2,600) as needed by the formula was 77 percent of the number employed by school divisions. The number of teachers calculated was 47 percent of the number estimated as needed by workgroups. When an English learner teacher has too many students, the teacher cannot spend adequate time with students when they need individual assistance, which can slow student learning and progress. One K–12 workgroup member described excessively high caseloads of over 100 English learner students, which made it extremely difficult to effectively teach students or even remember some students' names.

The formula's underestimate of need appears attributable to the staffing ratio used. The SOQ formula uses a fixed staffing ratio of one teacher per 50 English learner students. In actual practice, the average school division employed one teacher for every 19.5 students, and workgroups estimated more teachers were needed.

Additional information on English learner programs, staffing, and funding is provided in Appendix G.

SOQ formula substantially under-calculates instructional aides

Instructional aides assist teachers by helping manage the classroom, monitor student behavior, and accompany students who need to leave class. Teachers participating in the Virginia K–12 staffing workgroups said that aides helped ensure student safety and were especially valuable in managing larger classes of K-5 elementary school students. Aides are increasingly valuable when class sizes grow because of teacher shortages, and assistance from an effective aide can help reduce teacher burnout. JLARC's 2022 report on the impact of the pandemic on K–12 recommended targeted state funding for aides in low performing schools. (Note that school divisions also employ special education aides, discussed separately in Appendix F)

The SOQ formula *only* provides general instructional aides for kindergarten, using a complex formula with little relationship to prevailing or actual division practices (sidebar). The formula calculates divisions only need 8 percent of the number actually employed and only 3 percent of what the Virginia K–12 staffing workgroups estimated were needed (Figure 3-6).

Kindergarten instructional aides are calculated per school as follows:

- (1) determine all possible combinations of kindergarten classrooms that (a) include aide if classrooms exceed 24 students, and (b) never exceed 29 students.
- (2) selects the combination costing the least amount of money to the state, based on prevailing kindergarten teacher and aide salaries.

FIGURE 3-6
SOQ formula staffing calculations for aides was significantly lower than actual employment and Virginia staffing workgroup estimates (FY23)



SOURCE: JLARC analysis of Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K-12 staffing workgroup meetings.

NOTE: Differs from Figure 3-4 in excluding English learner and special education aides (discussed in Chapter 6).

Examples of **general instructional aides in school divisions' internal staffing standards**: Albemarle employs one aide per three kindergarten and first-grade teachers. Loudoun employs one aide per 23 kindergarten students, 26 first through third-grade students, and 30 fourth- and fifth-grade students.

The SOQ formula calculates a much lower number of aides primarily because divisions employ general instructional aides for *all* grades, not just kindergarten. At least 1,100 (and likely substantially more, but data is limited) of the 7,900 general instructional aides employed in FY23 worked in grades other than kindergarten. The internal staffing standards of several sampled school divisions specify at least as many aides for grades 1 through 5 as kindergarten aides (sidebar), implying a large share of aides employed statewide are for elementary grades above kindergarten. Furthermore, aides for grades 1 through 5 accounted for 70 percent of the grade-specific aides the Virginia workgroups estimated were needed.

In addition, some divisions may employ more kindergarten aides than calculated by the SOQ formula. While data on the actual number of kindergarten aides employed by division is not available, interviews with division administrators confirmed they employ more kindergarten aides than what the SOQ formula estimates is needed.

SOQ formula under-calculates other K-12 positions

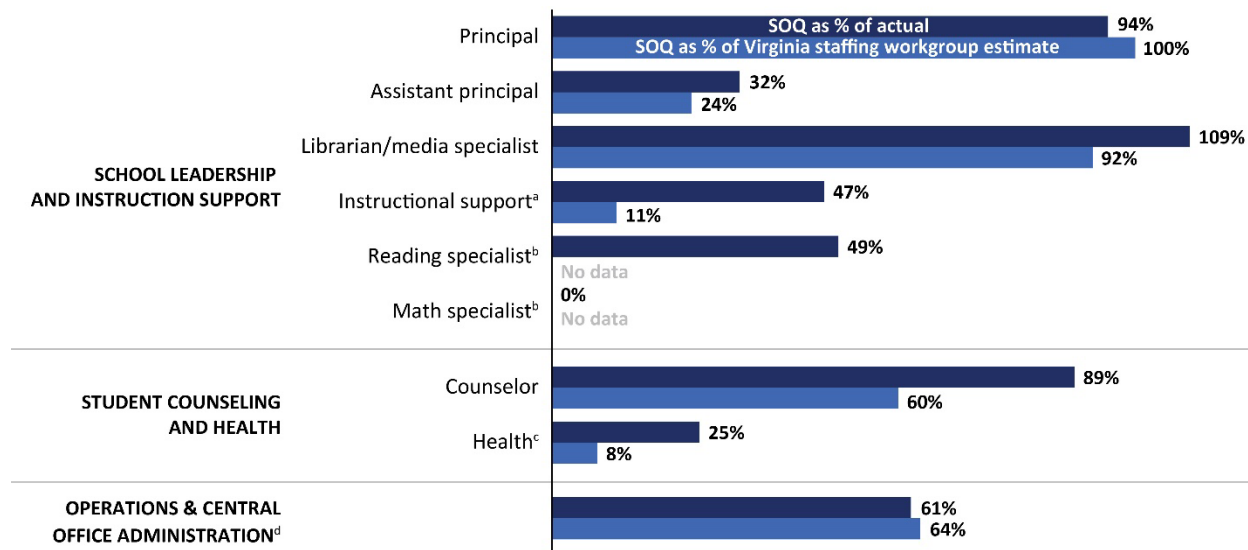
School division staff in other types of positions that mostly work outside of the classroom are also critical for school operations and effectiveness. These positions provide school leadership and instructional support, student counseling and health, and operations and central office administration. For example, school leadership positions like principals are needed to effectively run schools, while assistant principals can fill a variety of roles in schools from supporting curricula implementation to addressing student discipline. Other K–12 positions serve their own unique, important roles.

The SOQ formula under-calculates staffing needs for most of these outside-the-classroom positions (Figure 3-7). For example, the number of assistant principals calculated by the formula is only one-third of the number employed by school divisions. One division administrator stated: “To think those positions are not needed is unrealistic.”

Staffing for some positions is still under-calculated even though the state has recently changed staffing ratios to provide more staff. In FY22, the state increased the number of counselors calculated by the existing staffing ratios and created a specialized student support ratio. For these positions, staffing calculated under the SOQ formula is now closer to, or above, actual employment, but is still far lower than what the Virginia

staffing workgroups estimated is needed. The staffing ratios for these positions also provide fewer staff per student than those recommended by national associations. Virginia educators commonly noted that student need for these services is growing.

FIGURE 3-7
SOQ formula yields less staffing for other positions than actual employment and workgroup estimates, with several exceptions



SOURCE: JLARC analysis of Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K-12 staffing workgroup meetings.

NOTE: Principal, assistant principal, librarian, reading specialist, math specialist, counselor data from FY23. Instructional support, health, and operations & central office administration data from FY21. The number of reading and math specialists reported by divisions as instructional support, as opposed to teachers, is unknown. ^a Can include curricula leads, teacher coaches, deans, counseling directors, and others. ^b Workgroups estimated reading and math specialists as part of a broader category, so specific estimates for those positions are not available. ^c Includes positions in specialized student support category created by the General Assembly effective FY22, such as psychologists, social workers, and school nurses. ^d Includes central office administration, school clerical, facility maintenance & operations, and technology.

Formula uses faulty ratios, arbitrary caps, and excludes positions

The SOQ formula calculates fewer staff than actual practice and substantially fewer staff than what the Virginia K-12 staffing workgroups estimate is needed for several reasons (Table 3-3). Many of the fixed ratios used to determine staffing standards assume fewer staff than actual practice or workgroup estimates. In addition, staffing calculated by prevailing ratios has been artificially limited by the support cap established after the Great Recession (discussed in Chapter 4). Certain types of positions commonly filled in many school divisions are excluded from SOQ funding.

TABLE 3-3
SOQ formula yields fewer staff than actual practice and workgroup estimates for a variety of reasons

Category	Position	Fixed ratio under-estimates staff	Support cap reduces number of staff	Some positions not included
General instruction	Teacher	✓	n/a	
	Aide	Unknown ^a	n/a	✓
School leadership & instructional support	Principal		n/a	
	Assistant principal	✓	n/a	
	Librarian/media specialist	✓	n/a	
	Instructional support	n/a	✓	✓
	Reading specialist	Unknown ^b	✓ ^c	✓
Student counseling & health	Math specialist	n/a	✓ ^c	✓
	Counselor	✓	n/a	
Operations & central office administration	Health	✓	✓	
	Central office administration ^d	n/a	✓	✓
	School clerical staff	n/a	✓	
	Facility operations & maintenance	n/a	✓	
	Technology	✓	✓	

SOURCE: JLARC analysis of Code of Virginia, Appropriations Act, Annual School Report data, Positions & Exits data, fall enrollment data, VDOE Office of School Nutrition data, and Virginia K-12 staffing workgroup meetings.

NOTE: ^a Kindergarten aides calculated by SOQ cannot be compared to those employed by school divisions because grade-specific employed aide data is not available. ^b K-3 reading specialists calculated by SOQ cannot be compared to those employed by school divisions because grade-specific employed reading specialist data is not available. ^c Because divisions report some staff as instructional support. ^d Can include superintendents, assistant superintendents, program directors and coordinators, other office professionals, and clerical staff.

Fixed staffing ratios set in statute likely contribute to undercounting

Setting SOQ staffing standards in state law or the Appropriation Act rather than regulations likely contributes to the SOQ formula's under-calculations. In FY21, the staffing needs calculated by staffing standards set in the Code or Appropriation Act were on average only 68 percent of the number actually employed by school divisions (and an even lower proportion of the total amount estimated to be needed by the Virginia K-12 staffing workgroups).

Placing staffing standards in the Code of Virginia and Appropriation Act creates several challenges to keeping ratios current and accurate. First, although the Board of Education has in recent years reviewed some staffing ratios and proposed changes to the General Assembly, there is no set schedule within which to comprehensively review staffing ratios or for the legislature to update them as needed. For example, the student counseling and support ratios were changed in FY22, but the general teacher ratios have not changed since 2004. Well-organized stakeholder groups may be better positioned to lobby for changes to some positions more than others. Second, by setting standards through the legislative process, there may be no known rationale for even

recent changes to standards. For example, two state associations for individuals working in positions included in the new specialized support standard had no knowledge of why the staffing standard was set at three positions per 1,000 students. Third, the standards that are ultimately enacted do not necessarily reflect actual or best practices, but rather available revenue or how important certain positions are perceived to be by elected officials.

Support cap and omitted positions contribute to undercounting

Many positions—including instructional support and almost all operations and central office administration positions—are under-calculated because of the “support cap.” The support cap, implemented in 2009, has limited how many specified support positions are recognized in the SOQ formula. This cap has limited the number of funded positions to a level below the total prevailing number of staff, meaning every support position under the cap is under-calculated. The cap for FY23 is 20 support staff for every 1,000 students, which is 38 percent below the prevailing ratio of 26 to 1,000 calculated by the formula for the biennium.

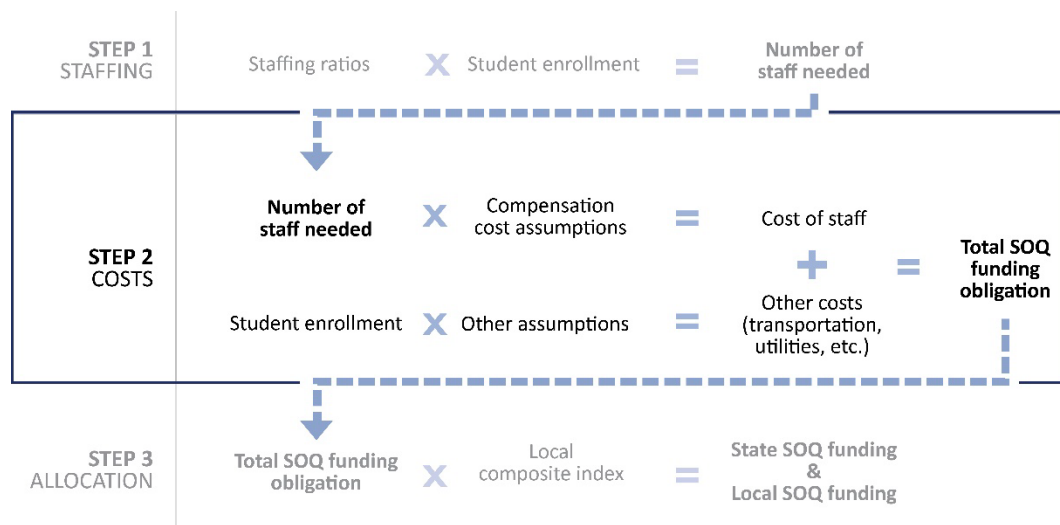
The omission of non-kindergarten general aides and certain central office staff from the staffing standards also contributed to undercounting of positions in the SOQ formula. As discussed earlier, neither fixed nor prevailing staffing standards account for general classroom aides in grades other than kindergarten. Several additional positions are not included in SOQ calculations because of historical VDOE staff decisions. In FY21, VDOE staff did not include about 700 operations and instructional support positions designated as division-wide by divisions. Almost all of these positions would have been included in VDOE’s prevailing cost standards if they were designated as primary or secondary grades instead of division wide. There is no rationale for excluding these staff from the SOQ formula, particularly because they are functionally similar to positions that were included. The positions in these categories vary somewhat among school divisions because of differences in their organizational structure and interpretation of VDOE reporting instructions; one Central Virginia division’s excluded positions included teacher coaches, reading specialists, a health/athletics coordinator, and a vocational studies director.

4 SOQ Formula: Cost Assumptions and Calculations

The second step in the Standards of Quality (SOQ) formula is to apply compensation and other assumptions to estimate how much funding each division will be allocated through the formula. The formula does this in two ways. First, it multiplies the number of staff calculated for the division under step one of the formula by compensation cost assumptions. Second, it multiplies assumptions for “non-personal” costs—such as utilities, transportation, and professional development—by student enrollment for the division. These staffing costs and non-personal costs are then added together to determine the total SOQ funding that will be allocated for each of the state’s 134 school divisions (Figure 4-1).

These compensation and other cost assumptions are the second major driver of the SOQ formula. If these assumptions do not accurately estimate costs or omit some expenses, school divisions are less likely to be appropriately funded. Therefore, the formula’s cost assumptions should have a clear and justifiable rationale and reflect actual or “prevailing practice” in school divisions. Appendix E has more information on the criteria used to assess the SOQ formula.

FIGURE 4-1
SOQ funding is calculated in three steps



SOURCE: JLARC analysis of SOQ formula.

School divisions spend substantial amounts on compensation for non-SOQ funded positions

Compensation includes salaries, benefits, and payroll taxes. The SOQ formula provides funding for retirement benefits, life insurance, and social security taxes.

JLARC staff estimate that Virginia’s school divisions spent \$3.3 billion per year on compensation for staff positions that was not included in the SOQ formula from FY17 to FY21. (See Chapter 3 for information about the number and type of staff not included in the SOQ formula.) This was equivalent to 51 percent of the total difference between the SOQ estimated cost of education and actual division spending in those years. While most of these compensation costs for non-SOQ funded positions are for salaries, a substantial portion are for benefits. For example, school divisions spend about \$707 million per year on health-care benefits for employees who are not in positions recognized by the SOQ formula. Divisions paid for their additional staff positions using mostly local funds, followed by federal and non-SOQ state funds.

School divisions of all sizes are affected by the SOQ formula’s underestimation of funding for staffing, but especially smaller divisions. Larger school divisions spend the most on non-SOQ positions because they employ more staff. However, smaller divisions spend a larger proportion of their operating costs on non-SOQ positions. Staff not recognized by the SOQ formula account for 17.4% of operational spending in the state’s smallest divisions, more than the state’s very large (13.6%) and large divisions (15.5%).

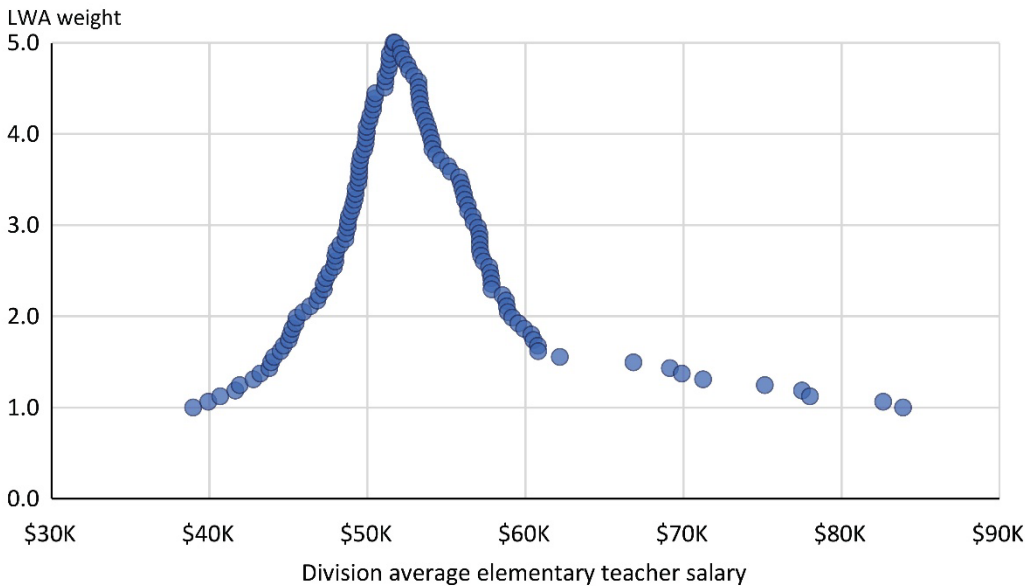
SOQ formula assumes compensation costs are lower than what a majority of divisions actually pay

While the estimation of how many and what type of staff a division needs is a fundamental input of the SOQ formula, so are the assumptions used about compensation costs of the staff employed. The SOQ formula should use cost assumptions that generally reflect the actual costs incurred by school divisions, which are referred to as “prevailing” costs. There are several ways that such costs can be determined. For example, the prevailing teacher salary statewide could be the average of each average teacher salary paid by each school division, or an average of all teacher salaries in the state.

In the 1980s, the state adopted a rarely used measure to determine prevailing compensation costs called the linear weighted average (LWA). The LWA is different from using average wages, because it weights some divisions more than others (Figure 4-2, side-bar). The LWA was adopted based on a JLARC recommendation, which sought to strike a balance between sensitivity to all divisions without being unduly influenced by extremely high or low cost outliers.

The **LWA** is a form of weighted average that is sometimes used in survey research and financial analysis. In the SOQ formula, it is calculated by ranking divisions from highest to lowest in each cost category. The divisions with the highest and lowest cost are assigned the lowest weight of one, while division(s) with the median cost are assigned the highest weight of five. All other divisions are assigned a weight between one and five, with divisions closer to the median being weighted more. Next, each division’s cost is multiplied by its weight, and the average of the division weighted costs is determined.

FIGURE 4-2
LWA weights divisions in the middle of the cost distribution most heavily



SOURCE: JLARC analysis of Annual School Report data.
 NOTE: Weights are taken from prevailing salary calculation for elementary teacher for the 2022-2024 biennia. Each dot represents one school division.

SOQ formula’s methodology to calculate prevailing salaries underweights the divisions that employ the most staff

The LWA underweights salaries paid by the state’s largest school divisions, even though these divisions employ a majority of K–12 staff and account for a majority of staffing costs (Figure 4-3). By underweighting these divisions, the state’s calculation of prevailing salaries and related compensation costs is biased toward costs incurred by smaller divisions that employ fewer staff and pay less. For example, divisions that the LWA weights more heavily (e.g., receive a weighting of three to five) only employ 29 percent of all elementary teachers in the state. The higher paying divisions, in contrast, which employ 62 percent of all elementary teachers, receive lower weights (e.g., one or two).

Virginia’s largest divisions are underweighted in LWA salary calculations because they are in urban and suburban regions where labor costs are higher, and so they must pay higher salaries to recruit and retain staff. For example, the cost of labor in large school divisions was 12 percent higher than in small divisions. Because these large urban and suburban divisions pay salaries that are toward the higher end of the salary distribution, the LWA calculation assigns them a lower weighting. In contrast, smaller divisions make up most of the middle of the salary distribution, and so they receive higher LWA weightings.

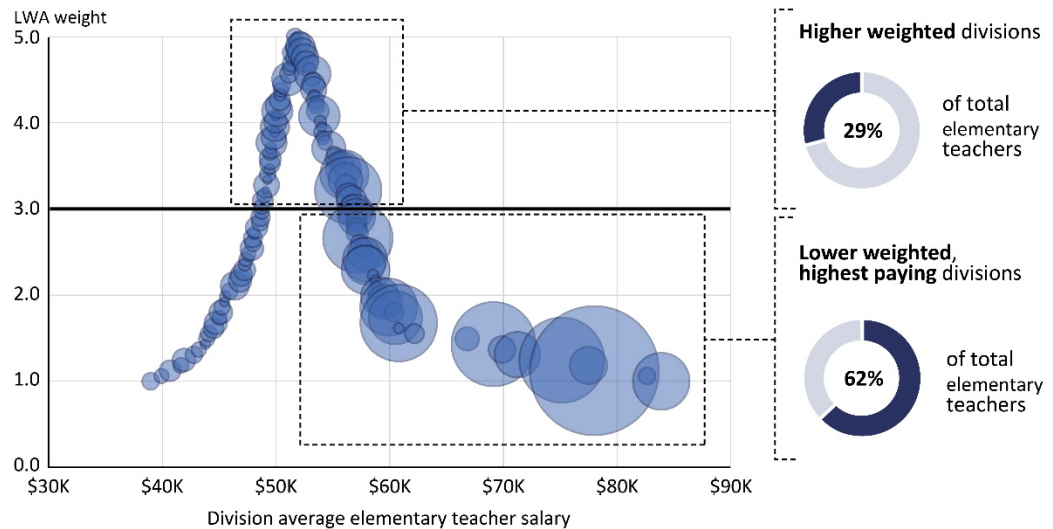
SOQ formula calculation of prevailing salaries

- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

Other prevailing cost calculations are not biased against larger divisions in the same way as **prevailing salary calculations**. However, salary and benefit costs comprise the largest portion of SOQ funding across all SOQ accounts.

Figure 4-3
LWA assigns higher weightings to divisions that employ less than one-third of
all the state’s elementary teachers



SOURCE: JLARC analysis of Annual School Report data.

NOTE: Weights are taken from prevailing salary calculation for elementary teachers for the 2022-2024 biennia. Size of the individual dots represents the number of elementary teachers employed in a school division.

SOQ-calculated salaries and related compensation costs are less than what a majority of school division staff are actually compensated

Health insurance costs are the one major part of employee compensation that is not determined based on salaries. These costs are instead based on a separate LWA calculation of school division health insurance premiums, discounted by the prevailing participation rate of actual employees.

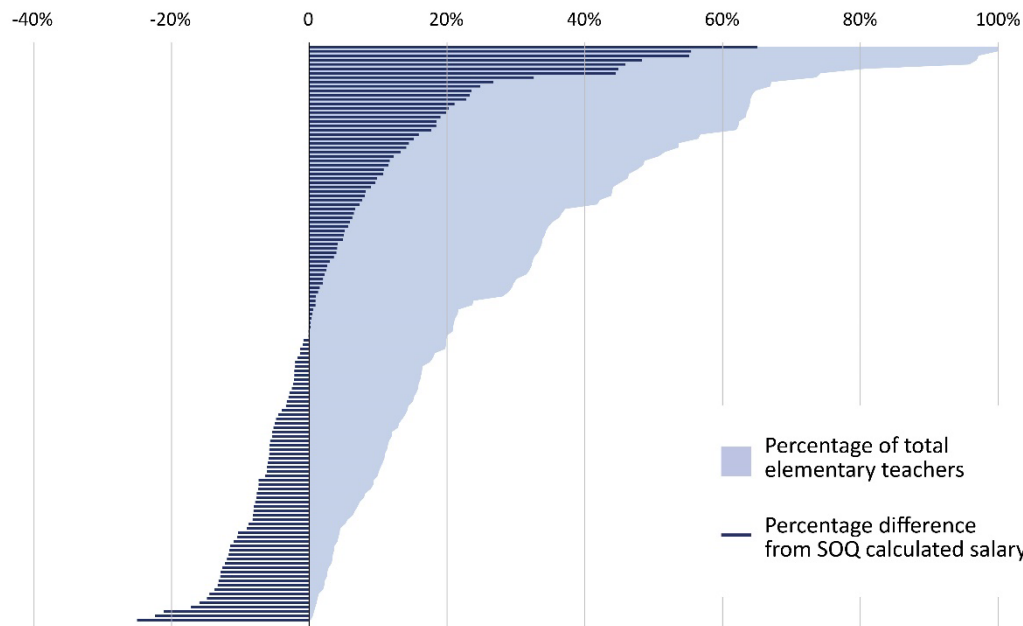
The SOQ formula underestimates salaries and related compensation costs of the majority of SOQ-recognized positions, partially because the LWA underweights divisions that employ the majority of K-12 staff. Statewide, 69 percent of staff working in SOQ-recognized positions are paid an average salary above the funded SOQ-calculated salary. For example, a majority of elementary teachers in the state earn more than the SOQ calculated salary (Figure 4-4). The average school division salary for SOQ positions is about 5 percent more than the SOQ calculated salary. School divisions, not the state, set employee salaries so there are divisions that pay substantially more than what the formula assumes but also divisions that pay less.

These same prevailing salary estimates are also used to determine most other employee compensation costs, including retirement benefits, life insurance, and federal payroll taxes. Funding for these additional compensation costs is calculated as a percentage of the prevailing salary, and so these other SOQ cost calculations are also lower than what school divisions actually spend. (Health-care costs are the exception).

The difference between SOQ-calculated compensation costs and actual compensation costs for SOQ recognized staff (excluding health care) has been about \$1.3 billion annually. Compensation for instructional staff, who make up the largest portion of SOQ recognized staff, comprised the vast majority of this difference, accounting for

\$1.1 billion of the total difference. The difference was most substantial in larger divisions. For example, the average very large division (more than 30,000 students) spent about \$139 million on compensation for SOQ-funded staff in addition to what was calculated by the SOQ formula.

FIGURE 4-4
Most elementary teachers work in divisions that pay significantly more than the SOQ calculated salary



SOURCE: JLARC analysis of Annual School Report data.

NOTE: Divisions are ordered from highest to lowest elementary teacher salary. Percentage of total elementary teachers is cumulative, starting with the division with the lowest elementary teacher salary.

The state has several options to better estimate salaries to reflect prevailing practice, more accurately measure what divisions actually pay, and not unfairly penalize divisions in higher cost labor markets. These include using an average that treats each division equally, or more heavily weighting divisions that employ the most staff.

Compensation funding is not systematically or consistently updated over time

Every two years, the Virginia Department of Education (VDOE) is required to update the SOQ funding formula with the data to recalculate SOQ funding obligations. This process, known as re-benchmarking, determines how much SOQ funding will be proposed in the governor's biennial budget. As a part of this process, VDOE collects cost data from each school division, such as student transportation and salary expenditures, and uses the data to recalculate all prevailing costs within the SOQ formula. The data that is used in this process is two years old and so does not reflect current division

costs. For example, re-benchmarking for the upcoming FY25–FY26 biennium, beginning July 2024, will rely on FY22 cost data.

Formula automatically updates some cost assumptions but not critical salary cost assumptions

The SOQ formula automatically adjusts “non-personal” cost assumptions, such as the cost assumption for student transportation or utilities, to account for the two years that have elapsed from the end of the data year to the start of the new biennium (for example, from the June 2022 end of FY22 to the July 2024 start of FY25). Cost assumptions are updated by adjusting each different cost category for inflation. For example, student transportation costs are updated using a combination of several inflation indices that track changes in the prices of fuel and equipment.

In contrast, the salary cost assumptions are not automatically updated; they are only updated if the General Assembly has enacted a separate compensation supplement in the previous two years. If no supplement was passed in the previous two years, then no adjustment to the salary funding assumptions is made.

Not fully updating the salary cost assumptions often results in SOQ funding for salaries growing more slowly, and by less, than the salaries school divisions actually pay. Salary cost assumptions are the basis for most other compensation funding calculations, and compensation accounts for the vast majority of K–12 funding. Therefore, using outdated salary costs has a major effect on K–12 funding as a whole.

Salary adjustments have usually been less than growth in actual salaries paid by divisions, and less than inflation

The current method for updating salary cost assumptions in the SOQ formula relies on whether a compensation supplement was passed in the previous biennium. K–12 compensation supplements are provided outside of the SOQ formula as stand-alone appropriations of non-SOQ state funds. Although not considered SOQ funds, they are based on the formula’s calculations of SOQ-funded positions and salaries, and the supplements are accounted for in the formula salary cost assumptions. The General Assembly determines whether to provide a compensation supplement and how much to appropriate for it each year. Compensation supplements have not been consistently provided, and supplement percentage adjustments are not typically based on any identifiable benchmark.

Due to inconsistency in compensation supplements, salary funding adjustments made in the SOQ formula do not consistently provide funding that reflects changes in divisions’ actual compensation costs. In many past budget cycles, salary cost adjustments have not kept pace with actual salary growth (Table 4-1). The salary cost adjustments have been less than actual salary growth in seven of the last 10 biennia. Similarly, salary cost adjustments are usually less than inflation (Table 4-2).

SOQ formula salary cost assumptions

- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

TABLE 4-1
SOQ formula adjustments for salaries are usually less than growth in actual Virginia teacher salaries

Biennium	SOQ formula adjustment for salaries	VA teacher salary growth between base year and start of biennium	SOQ formula adjustment equaled or exceeded benchmark?
2004-2006	2.25%	6.33%	X
2006-2008	3.00	8.35	X
2008-2010	6.61	6.40	✓
2010-2012	0.00	-1.50	✓
2012-2014	0.00	2.72	X
2014-2016	2.00	2.95	X
2016-2018	1.50	1.99	X
2018-2020	2.00	4.30	X
2020-2022	5.00	7.29	X
2022-2024	5.00	4.91	✓

SOURCE: JLARC staff analysis.

NOTE: Actual VA teacher salary growth uses the average teacher salary measured by VDOE.

TABLE 4-2
SOQ formula adjustments for salaries are usually less than inflation

Biennium	SOQ formula adjustment for salaries	Inflation between base year and start of biennium	SOQ formula adjustment equaled or exceeded benchmark?
2004-2006	2.25%	5.33%	X
2006-2008	3.00	7.13	X
2008-2010	6.61	7.53	X
2010-2012	0.00	-0.91	✓
2012-2014	0.00	5.28	X
2014-2016	2.00	3.86	X
2016-2018	1.50	1.12	✓
2018-2020	2.00	4.55	X
2020-2022	5.00	2.30	✓
2022-2024	5.00	14.94	X

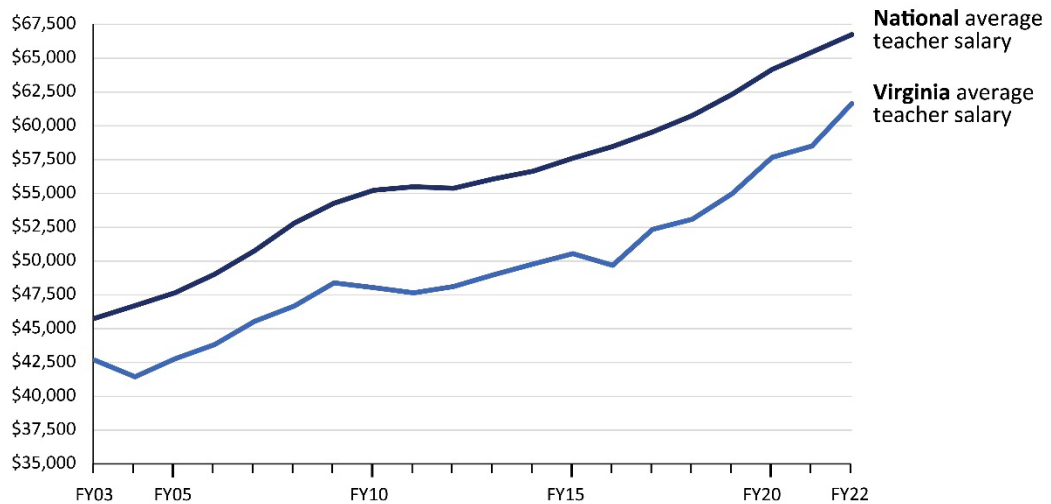
SOURCE: JLARC staff analysis.

NOTE: Inflation was measured using changes in the Consumer Price Index for All Urban Consumers (CPI-U).

Compensation adjustment approach creates challenges for school divisions

The unsystematic and inconsistent nature of how funding for salaries is adjusted over time creates at least two problems. First, the amount of the adjustments provided over time is not based on, or guided by, any metric or benchmark and, therefore, is somewhat random and not strategic. One benchmark that could be used is what is already in statute, which is to pay teachers at or above the national average (sidebar). Virginia teacher salaries have been consistently below the national average for two decades (Figure 4-5).

FIGURE 4-5
Virginia’s average teacher salary has consistently trailed the state’s goal of being at or above the national average



Source: JLARC staff analysis of data submitted by state departments of education, and published in Ranking and Estimate reports compiled by the National Education Association.

Second, the unpredictability of whether the General Assembly will include compensation supplements—and how much supplements will be—makes it difficult for school divisions to provide consistent pay raises. Supplements have recently been provided every year, but historically there have been periods in which several years passed between supplements. Many school division administrators said they do not provide any employee pay raises in years without a state compensation supplement. For staff in these divisions, there is no guarantee of a pay raise in a given year, which research shows may make them more likely to leave employment. If the state adopted a schedule or plan for compensation supplements, it could make them somewhat more predictable (although planned increases would ultimately still be subject to change any given year, during the budget process).

State approach for increasing compensation funding

- Clear & justifiable
Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

Virginia law sets the following goal for teacher compensation: “It is a goal of the Commonwealth that its public school teachers be compensated at a rate that is competitive in order to attract and keep highly qualified teachers. As used in this section, ‘competitive’ means, at a minimum, at or above the national average teacher salary.” (§ 22.1-289.1 Code of Virginia)

Alternative approaches to increasing compensation *during* the budget year may not be feasible. The main alternative would be to apply prospective growth adjustments to salary cost assumptions used in the SOQ formula, similar to the adjustments the state makes for Medicaid programs using economic forecasts. While this would result in more consistent and predictable increases for compensation funding, it would reduce flexibility in the budget process and could be impractical in years in which revenues are flat or falling, or other budget priorities take precedence.

General Assembly recently has been approving substantial increases in funding for K–12 salaries

The General Assembly has recently made substantial commitments to increasing compensation funding by appropriating supplements with 5 percent pay increases in each of the last three years (FY22, FY23, and FY24). These three consecutive years of substantial compensation supplement funding is increasing school division staff compensation. However, these substantial supplements may not be enough to address the effect of low and no compensation supplements in past years combined with higher inflation in FY22 and FY23. (Inflation was 7.2 percent in FY22.) Additionally, some school divisions report they have been unable to fund the full 5 percent increases for all their staff, because their locality does not provide sufficient local matching funds for employees not recognized through the SOQ formula. Other states have also been increasing teacher compensation during this same time period, so it is unclear as of the writing of this report how much this will close the gap relative to the national average teacher salary.

Formula still uses Great Recession-era cost reduction measures

The study resolution directs JLARC to “analyze changes in the SOQ funding formula since 2009 and the impact of such changes on its accuracy in reflecting such costs.” The historic revenue decline during the Great Recession led to a series of changes to the SOQ formula from FY08 to FY10 that reduced funding. Many of these changes remain in place as of spring 2023—more than a decade since the Great Recession ended.

A few of these changes, such as a change made to the health-care insurance calculation (sidebar), have improved the formula and have a clear rationale. However, several of the changes lack clear and justifiable rationales or do not reflect current practices. The changes with the largest funding reductions are the support cap, modifications to non-staffing cost calculations, and changes to how federal funds are deducted (Table 4-3).

Great Recession-era formula changes

- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

TABLE 4-3
Recession era formula changes have resulted in large state funding reductions

Change	Reduction in state funding, FY22 (in millions)
Support cap	\$331
Changes to non-personal costs	148
Change to federal deduction	12
Total	\$487

SOURCE: JLARC analysis of Annual School Report data and VDOE documents.

Support cap reduces funding for school divisions below prevailing costs and has also affected non-support functions

The support cap, implemented in FY09, has resulted in the largest reduction in state funding of all changes made in response to the Great Recession. The support cap limits how many support positions, as defined in the Code of Virginia, are recognized in the SOQ formula. The support cap applies to SOQ funding for most non-instructional positions, including most administrative and maintenance positions, although a few major groups are exempt (sidebar).

Positions affected by the support cap include central office and school-level administrative, technical and clerical, maintenance, and instructional support positions. *Superintendents* as well as *school board, specialized support*, and (before 2022) *school nurse* positions are exempt from the support cap. In addition, the *Support Technology* position is included in the cap calculations but is always funded at the SOQ ratio of 1 per 1,000 students. The *School Based Clerical* support position is included in the cap and has a school level SOQ ratio but, because of the support cap, the position is not funded based on that ratio.

Support cap reduces funding below what the SOQ formula estimates is the prevailing cost of these staff

Although there was a revenue-based rationale for establishing the support cap at the time, it has been implemented in a way that is inconsistent with current practices. Before the implementation of the support cap, the SOQ funded school divisions' support positions based on the level of support staffing "prevailing" across the state. The formula still calculates a prevailing level for each type of funded support position—however, the support cap reduces the number of support positions that will be funded below the prevailing level.

Prior to the current biennium, the support cap was based on a complicated ratio of instructional and support staff, even though the SOQ formula funds support staff based on the number of students. Beginning in FY23, the General Assembly set the cap limit in the Appropriation Act, which uses a more relevant and straightforward ratio of support staff to students. While the new method is an improvement over the previous method, it still results in SOQ staffing below prevailing levels. The current cap for FY23 is 20 support staff for every 1,000 students, which is still 38 percent less than the prevailing ratio of 26 to 1,000.

Support cap has reduced funding available for non-support functions, including instruction

Although the support cap was intended to slow and reduce spending on support positions, in practice it has also limited spending on non-support functions. Given the structure of the SOQ formula, reducing the support cap simply has the effect of reducing total Basic Aid funding, which funds support, instruction, and all other division

operations. Given the key role of many support staff, divisions applied only half of the funding reductions from the cap to support positions; they applied the remainder of the reductions to other areas, including instruction.

Original rationale for support cap no longer seems valid

The support cap was implemented for at least three reasons. First, the precipitous decline in state revenue during the early period of the Great Recession created a need to at least temporarily reduce SOQ funding. Second, at the time some state policymakers believed support staff were not as important for K–12 operations as instructional staff. Third, some state policymakers believed that school divisions had too many support staff.

The state’s financial condition is substantially stronger than it was when the support cap was imposed. In addition, school administrators have emphasized in interviews the essential role that support staff currently have in basic day-to-day school operations and identified understaffing in support areas such as administration, attendance, and technology as a major issue confronting their divisions. Consistent with administrators’ concerns, the K–12 staffing workgroups recommended that divisions should have significantly more support staff than they currently do (sidebar). Furthermore, in the aftermath of the pandemic, there is a greater need for support services as a result of increased student behavior issues, absenteeism, and mental health challenges.

Use of prevailing staffing ratio for support staff is different from rest of formula

The SOQ formula uses prevailing staffing ratio calculations for the capped support positions but fixed staffing ratios for most other positions (see Chapter 3). The SOQ formula could treat all positions the same by establishing a fixed ratio for support positions. However, as with other fixed ratios, the fixed ratio for support staff should reflect actual, prevailing practices.

Several Great Recession-era changes to the calculation of non-staffing costs lack rationales and are inconsistent with prevailing practice

Following the Great Recession in FY09 and FY10, changes were also made to how the formula calculates non-staffing, or “non-personal” costs that divisions incur (Table 4-4). The change with the biggest impact was removing certain costs, such as travel and leases, from prevailing SOQ cost calculations. Rather than being capped or reduced like support costs were, these costs were removed from the formula’s cost calculations altogether. Since this time, divisions have not received any SOQ funding for employee travel (e.g., to professional conferences or to present to committees of the General Assembly) or any leased physical property (e.g., facility space). These costs have not been included in the formula since FY10; in FY22 excluding expenditures in these areas from non-personal cost calculations reduced state funding by \$90 million.

JLARC convened **seven Virginia K-12 staffing workgroups** in 2022. Members were asked for the number and types of staff needed at several hypothetical school divisions, based on their professional knowledge and real-world experiences. JLARC converted those specific recommendations into generalized rules, then applied those rules to real Virginia divisions.

Two other changes during the Great Recession had smaller financial impacts. The state began using different enrollment data for divisions in fiscal partnerships than the enrollment data used for all other divisions during the calculation of non-personal costs. This affected six divisions in three fiscal partnerships (Fairfax County and City, Williamsburg and James City, and Greensville and Emporia) and reduced state funding for all divisions by a total of \$28 million. In addition, the SOQ formula stopped including funding for certain employee benefits, such as paying out unused but earned annual leave for employees leaving a school division (\$27 million). Divisions have, though, continued to provide these benefits to employees (using local funds).

TABLE 4-4
Changes to non-personal cost calculations have reduced state funding

Change	Reduction in state funding FY22 (in millions)
Removal of certain costs (e.g., employee travel and property leases) from prevailing cost calculations	\$90
Require fiscal partner divisions to use a different enrollment measure when calculating per-pupil costs	28
Removal of funding for certain other employee benefits	27

SOURCE: JLARC analysis of Annual School Report Data.

NOTE: Individual changes do not add together to combined effect presented in Table 4-2 since changes interact with one another when implemented together.

The state is no longer experiencing reduced revenues that were cited as the reason for these changes. Moreover, these changes never reflected prevailing practices in divisions and continue to be inconsistent with how divisions operate.

Great Recession-era changes to accounting for federal funds is inconsistent with prevailing federal funding levels

The federal deduction is a longstanding part of the SOQ formula, which is intended to account for the fact that federal funding will pay for a portion of school division support costs. Before 2010, the federal deduction was based on division support spending as a percentage of total K–12 spending (excluding a few costs, such as food service). This approach had a justifiable rationale and was clearly tied to actual costs.

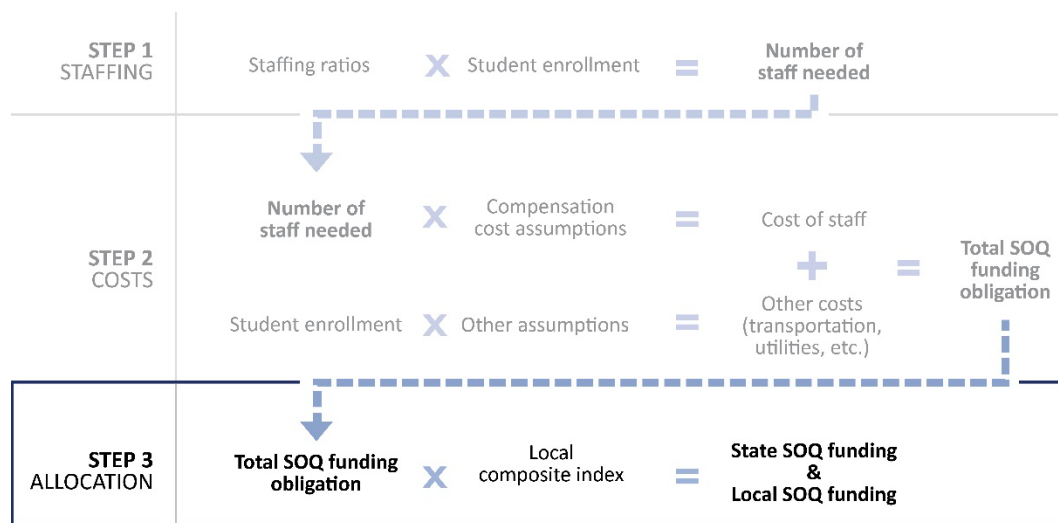
However, in 2010, a formula change increased the federal deduction, which reduced funding to school divisions. The federal deduction is now based on the percentage of *SOQ-calculated* support costs out of total *SOQ-calculated* costs. As discussed throughout this chapter, the SOQ-calculated costs substantially underestimate divisions' actual costs. The change resulted in a more substantial gap between the amount deducted and the amount of federal funds provided, with school divisions left to make up the difference or reduce support costs. From FY15 and FY22, this revised calculation assumes that the deduction should be equal to 35 percent of support costs, compared

with 31 percent under the more accurate, previous method. This recession-era change reduced funding by about \$12 million in FY22.

5 SOQ Formula: State and Local Funding Allocation

The third step in the Standards of Quality (SOQ) formula is determining the state and local shares of SOQ funding. The formula does this by apportioning each division’s total SOQ funding obligation based on local ability to pay, measured by the Local Composite Index, or LCI (Figure 5-1). The LCI is also used to determine state contributions and local matches under several non-SOQ funding programs. Virginia has used the LCI to allocate funding responsibilities between the state and each local government since the early 1970s.

FIGURE 5-1
SOQ funding is calculated in three steps



SOURCE: JLARC analysis of SOQ formula.

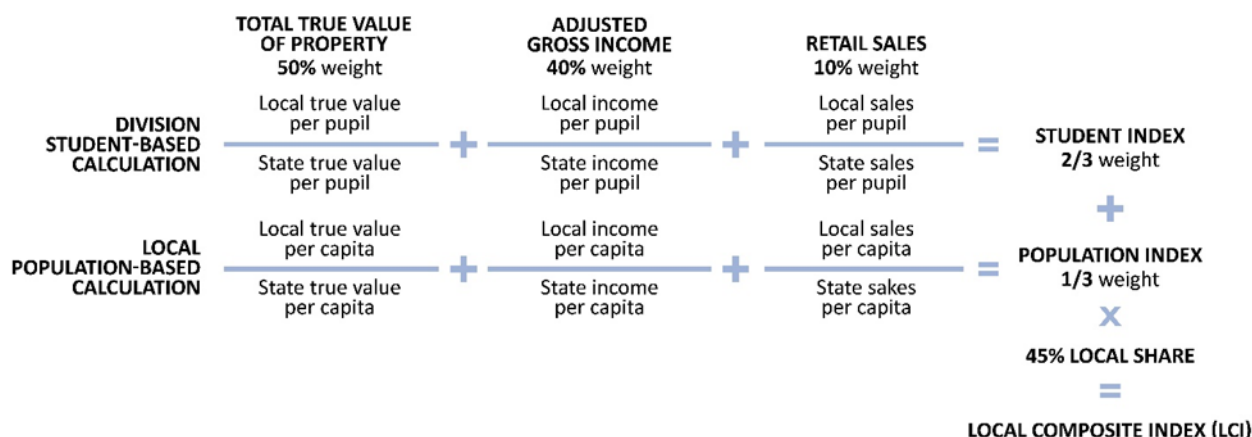
Despite being 50 years old, LCI formula remains a reasonable measure of local ability to pay

As noted in Chapter 1, the Virginia Constitution obligates the General Assembly to “provide for the apportionment of the cost of such program between the Commonwealth and the local units of government.” The state uses LCI to determine each local government’s ability to contribute to K–12 funding. The LCI does this by calculating each locality’s total taxable wealth base relative to the state’s total wealth. The LCI’s taxable wealth base measures include total true values of property, total adjusted gross income of residents, and retail sales within the locality. The LCI formula weights each of these three measures and calculates each locality’s wealth relative to its (1) student

Total adjusted gross income is used as a proxy measure of total local wealth that could be taxed. The adjusted gross income measure is intended to generally reflect commercial activity, tangible personal property, and other sources of wealth a local government could tax if it chose to do so.

population and (2) total population. The results of the student population-based calculation and the total population-based calculation are then weighted and added together. The final LCI score for each locality is determined by assuming localities should collectively be responsible for approximately 45 percent of SOQ costs (Figure 5-2). The LCI is capped so that no locality is required to contribute more than 80 percent of SOQ funding.

FIGURE 5-2
LCI formula is based on three measures of local wealth, population, and school enrollment



SOURCE: Virginia Department of Education, Local Composite Index of Ability to Pay Template.

NOTE: Total true value of property includes the true value of real estate property plus the true value of public service corporation property. It does not include tax-exempt real estate. Adjusted Gross Income includes total adjusted gross income reported by taxpayers on the VA 760 tax form. Retail sales include all bona fide sales subject to the 1% local option sales tax. The school division student counts used are unadjusted March 31 average daily membership counts. Unadjusted March 31 average daily membership does not adjust for half-day kindergarten. The local population counts used are official population estimates for Virginia as reported by the University of Virginia Weldon Cooper Center.

The Task Force for Financing the Standards of Quality was created by the governor and consisted of key members of the General Assembly, staff of the Attorney General’s office, DOE officials, and others. Its purpose was to determine how to fund the then-new SOQs. (1972–1973).

Public service corporation property includes property owned by utility companies, telecommunications companies, and railroads.

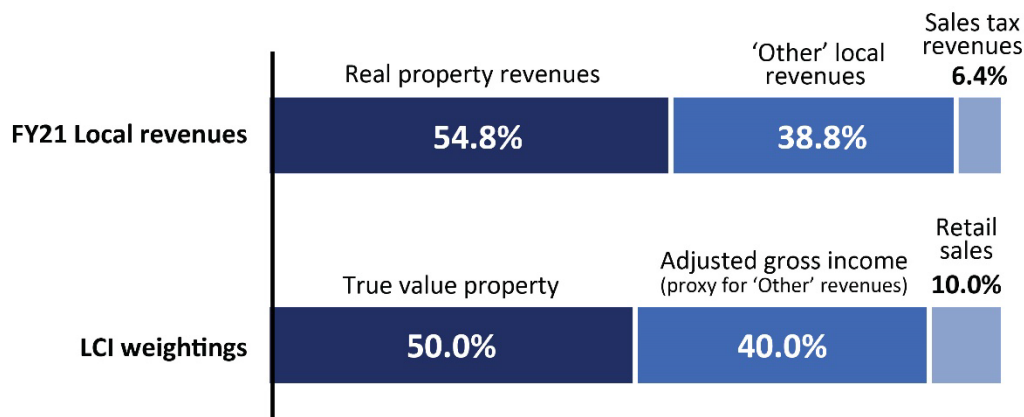
The LCI was created by the 1972–1973 Task Force for Financing the SOQs, with the acknowledgment that state and local funding obligations must account for differences in local ability to pay. The task force originally assumed that, in aggregate, localities should provide 50 percent of SOQ funding and the state should provide the other 50 percent. This 50:50 ratio was changed by the General Assembly to 55 percent state and 45 percent local share in 1993 when localities were asked to start helping to pay for K–12 fringe benefits. (Retirement benefits had originally been completely funded by the state.)

The LCI formula’s other components remain unchanged since established by the task force. At the time, localities generated approximately 50 percent of their local revenues from real estate and public service corporation property taxes; 40 percent from assorted other local taxes, fees, and fines; and 10 percent from the sales tax. The LCI formula weights were set to match these percentages, with adjusted gross income used as the proxy measure for assorted local revenues. The formula also weights school

division enrollment more heavily than the locality’s general population based on the task force’s decision to emphasize a locality’s student population over its general population.

Although the LCI has not been updated since it was created in the 1970s, the measures it uses are still reasonably close to the actual proportion of local revenue sources. As of 2021, localities relied on real estate property taxes for 55 percent of their revenues, personal property and various other taxes for about 40 percent, and retail sales taxes for 6 percent of local revenues. These aggregate proportions are fairly close to the proportions the LCI assumes (Figure 5-3).

FIGURE 5-3
Proportion of actual local revenue sources remain similar to original LCI weightings



SOURCE: Auditor of Public Accounts, Comparative Report of Local Government Revenues and Expenditures FY21.
 NOTES: “All other” comprises: tangible personal property (12.42%), all other local taxes (11.29%), charges for services (8.66%), and miscellaneous (6.43%). Other local taxes includes 12 tax sources not all localities draw from: consumer utility, business licenses, franchise licenses, motor vehicle licenses, bank stocks, recordation and wills, tobacco, admissions, hotel and motel rooms, restaurant food, coal, and others non-itemized. “Miscellaneous” includes revenues from permits, privileges, and regulatory license fees (1.14 percent), machinery and tools (1.04 percent), use of money (0.92 percent), penalties (0.39 percent) and interest (0.20 percent) on property taxes, fines and forfeitures (0.28 percent), merchant’s capital (0.07 percent), and non-itemized miscellaneous revenues (2.39 percent). The cities of Emporia, Hopewell, and Petersburg, and King William County did not submit data on time for the original report or the amended report updated October 2, 2022.

One minor limitation of the LCI is that it does not separately estimate tangible personal property, even though this is the second largest source of local revenues. Due to data limitations at the time the LCI was created, tangible personal property values were one of several revenue sources estimated using adjusted gross income instead of directly measuring personal property, such as vehicles. The impact of this limitation varies among localities. In 2021, for example, the LCI underrepresented how much small rural counties rely on personal property and other smaller revenue sources by approximately 8 percent and overrepresented reliance by very large suburban counties by approximately 6 percent.

Adjusting the LCI to include tangible personal property, as its own separate wealth base measure, would increase the accuracy of the LCI but would raise local contributions. This change would make all localities appear wealthier than they do under the current LCI, and would increase the required local share for education funding. The only unaffected divisions would be those already above the 0.8 LCI cap, because they are already paying the maximum required share.

LCI is generally accepted by school divisions despite a few unfounded concerns

LCI relies on historical data collected by Virginia Tax for property values, adjusted gross income, and retail sales. By the time divisions begin receiving funding, the data used in the LCI is four years old. However, because this data cannot be made available sooner, and locality-level data for wealth bases and tax revenues cannot be reliably projected forward, there does not seem to be an effective way to address the aged data problem.

Virginia school division administrators were generally less concerned with how the LCI apportioned funding than about how funding was determined under other steps of the SOQ formula. Almost two-thirds of administrators interviewed said the LCI formula was acceptable as is, although some said it was “old” (sidebar) or too complicated to understand. The remaining one-third of administrators interviewed said they believed particular components of the formula skewed their LCI in disadvantageous ways, but only a few expressed serious concerns about specific aspects of the formula. A few administrators were concerned that the formula’s wealth measures were inaccurate and made it appear their local governments had a greater ability to contribute funding than they do. A few other administrators were concerned that the LCI formula does not account for local land use tax policies. These concerns turned out to be unfounded.

LCI appropriately excludes tax-exempt properties when measuring local wealth contrary to perception

A few school divisions were concerned that the LCI formula overstates the actual value of taxable real estate in their jurisdictions. They believe that tax-exempt properties are inappropriately included in the calculation, such as state government buildings, military bases, national forest land, and privately held conservation easements.

However, contrary to this perception, the LCI does not include tax-exempt properties in calculating a locality’s real estate tax base. The value used is the “estimated true full value of *locally taxed* property for real estate and public service corporations” reported by the Virginia Department of Taxation (Virginia Tax). Virginia Tax staff confirmed that tax-exempt properties are not included in this figure. The value is calculated from (1) the fair market value of *taxable* real estate reported in local land books, adjusted by (2) a ratio that accounts for changing property values. Fair market values for tax-exempt properties are reported separately and are not used in the calculation.

Confusion stems from what data is reported in the LCI formula. The LCI formula’s local real estate values may appear greater than localities expect because they include the true value of public service corporation properties. Public service corporations—such as utility companies, telecommunications companies, and railroads—can have substantial property holdings in some localities. Only one of the 25 school division

administrations interviewed by JLARC staff was aware that public service corporation properties were included in the LCI calculation. School division confusion is understandable because the materials the Virginia Department of Education provides to divisions do not clearly indicate that public service corporation properties are included in the real estate true values. Inclusion of public service corporation properties in the LCI is appropriate because localities collect taxes on those properties.

LCI does not account for differences in local land use or other tax policies, which is appropriate for an ability-to-pay measure

Some school divisions also raised a similar concern about real estate in their jurisdiction that has reduced value because of local assessment ordinances. These divisions expressed concern that the LCI does not account for local land use-value assessment policies that can lower the taxable assessed land value. Land use policies provide tax relief for qualifying properties, effectively reducing the amount of revenue a locality collects in real estate taxes. Land use policies *do not* change a locality's tax rate. Many Virginia localities have adopted land use tax policies as an incentive to preserve land for agricultural, horticultural, or forestry. Land use policies are also used to help preserve open space and historic properties. Localities are in full control of their land use policies, including what real estate qualifies under land use rules and the assessed value per acre of land applied. Ninety-three (69 percent) of the cities and counties in Virginia maintained one or multiple land use ordinances in tax year 2021, a majority of which (57 percent) were counties.

The LCI does not account for land use value ordinances. All real property is counted at its full value. This is appropriate because local tax policy decisions for land preservation purposes are not relevant to the LCI calculation.

LCI is not substantially skewed by any single individual's income or change in income contrary to perception

A few school divisions were concerned that the LCI formula's income measure was not representative of the actual wealth of most local residents. They believed that the income measure appeared too high because of incomes earned by a few extremely wealthy residents or large one-time payments awarded to lottery winners.

However, the LCI is not artificially skewed by a few extremely wealthy individuals in a small locality because the formula scales *local* adjusted gross income relative to *state* adjusted gross income. Extremely wealthy individuals live across the state, and larger localities have more extremely wealthy residents, so the LCI calculation does not over-inflate wealthy individuals' income in small localities. For example, over 80 percent of individuals reporting \$1 million or more income in FY19 lived in a suburban county or city in the Northern Virginia, Tidewater, or Central Virginia regions. In the LCI calculation, the large numbers of wealthy individuals in large localities overrides the effect of small numbers of wealthy individuals in small localities.

The LCI is not skewed by one-time income outliers. Virginia Tax compiles the adjusted gross income data for each locality and, according to Virginia Tax staff, high outliers are removed in a single tax year. Specifically, Virginia Tax confirmed that Virginia lottery winners with \$500,000 or more in winnings are dropped each year, and that 64 winners were dropped from the FY21 data. Some school divisions shared concern that the effect of “one” or “a few” extremely wealthy individuals moving into a small locality could significantly increase their LCI from one biennium to the next. While this would increase the locality’s adjusted gross income, the effects of this change do not appear to have a major effect on LCI. JLARC staff examined the case of one locality where a reported “billionaire” moved in and concluded that no significant changes to that locality’s LCI occurred at the time.

Removing extremely wealthy individuals from the LCI could actually have a negative impact on many small and rural school divisions. For example, removing income from all individuals across the state who report annual income of more than \$1 million makes over half of rural localities appear wealthier than under the current calculation. This occurs because the majority of millionaires in Virginia are concentrated in suburban counties and account for \$23.1B of statewide income (74.7 percent), while millionaires in rural counties only account for \$2.96B (9.6 percent).

LCI recalculations each biennium can result in sudden, large losses of state funding

The LCI is recalculated every two years for the new biennial budget. During these two years, some localities can experience unexpectedly large shifts in one or more of the LCI’s five components: school division enrollment, general population, real estate values, resident income, and retail sales. While most localities do not see major shifts relative to the state as a whole, a few can experience changes that result in substantial, unexpected increases or decreases in required local funding.

While most school divisions see only a small to moderate change after LCI recalculations, a few divisions reported “sticker shock” after LCI recalculations. Some division administrators said they are surprised by large increases in their LCI.

Swings in LCI can result in substantial losses of state funding for school divisions, requiring these divisions to replace funding or make major budget cuts. For example, Greenville County’s LCI increased from 0.2799 for the FY20–22 biennium to 0.4067 for FY22–24 because the total true value of property in the county nearly doubled between LCI calculations. This increase was presumably due to the construction of the Greenville County Power Station, which exponentially increased the value of taxable public service corporation property in the county. The LCI change meant the state’s SOQ funding dropped almost 15 percent, or \$1.12 million in FY23. Richmond City saw a similar spike in its LCI from 0.4688 to 0.5139 from the FY20–22 biennia to the FY22–24 biennia. Richmond City’s true value of property (16.8 percent) and in-

Local Composite Index

- Clear & justifiable
Reflects prevailing practice

- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

come (24.8 percent) rose dramatically compared to a small population gain (1.8 percent) and enrollment loss (1.3 percent). As a result, FY23 state SOQ funding to Richmond dropped approximately 5 percent, or \$6.75 million.

Another longer term trend is that the LCI has been slowly reducing the share of state funding for small and rural school divisions as their proportion of student enrollment declines. LCI uses a ratio of local student enrollment to statewide enrollment, and enrollment at small, rural divisions has been declining, while statewide enrollment has grown (sidebar). This has caused the LCI to increase for small and rural divisions, which reduces the amount of state SOQ funding these divisions receive. Since the FY11–12 biennium, LCI for these divisions has increased an average of 0.0024 per year, while LCI for other divisions LCI has declined 0.0009 per year. For example, the LCI recalculation for the FY23–FY24 biennium reduced state funding for small and rural divisions by an average of 0.5 percent. While this was not a substantial change, similar reductions can add up over time and gradually put more financial pressure on these divisions.

Student enrollment in small, rural school divisions decreased by an average of 0.25 percent per year from FY07 to FY20. Meanwhile, statewide student enrollment increased by an average of 0.4 percent per year.

Revenue capacity is a more accurate measure of local government’s ability to pay than LCI

While created when there were limited data and techniques available, the LCI has generally been a useful method to calculate the ability of local governments to contribute funding to K–12 education. In addition, the LCI has a clear and justifiable rationale and is fair, because it compares each locality on the same measures of local revenue and compares them to all localities statewide. However, as noted above, the LCI calculation does not include the second largest source of local revenue (tangible property taxes); has some unpredictability when recalculated every two years; and is difficult for localities to understand.

In the 50 years since the creation of the LCI, a more accurate measure of ability to pay has been developed. The revenue capacity measure, like the LCI, is based on actual data, but the data focuses more directly on how much revenue a locality can practically capture from its wealth base.

Revenue capacity more accurately measures local ability to pay

It has generally become accepted that a measure of revenue capacity is a more precise measure of ability to pay across localities that have substantially different wealth bases. Virginia’s Department of Housing and Community Development (DHCD) uses revenue capacity to assess the fiscal wellness of localities, and Tennessee uses a version of revenue capacity to determine state and local shares of education funding. Revenue capacity is a more accurate measure of local ability to pay than LCI because it measures how much revenue each individual locality can practically capture from its taxable wealth base, controlling for differences in local taxation decisions. Revenue capacity

calculates statewide average tax rates for each of the main local taxes (real estate, personal property, and all others) and then estimates the potential revenues each locality could generate using those average tax rates.

Revenue capacity is a more refined ability-to-pay measure than LCI for several reasons. Unlike LCI, revenue capacity does not assume all localities rely equally on different tax bases. LCI assumes that real estate accounts for 50 percent of taxable wealth in every locality, retail sales account for 10 percent, and other sources account for 40 percent. As noted above, this is still reasonably similar to revenue collections *in aggregate* across all localities. However, the mix of taxable wealth bases varies substantially among localities. For example, the counties of Hanover, Louisa, and Rockbridge generated similar total revenues per capita in 2021. Each generated, though, varying revenues from real property and public service corporation property: Louisa, 64 percent; Hanover, 53 percent; Rockbridge, 44 percent. By removing the assumption that all localities rely on each tax base equally, the revenue capacity method allows for better comparisons of ability to pay among localities with significantly different wealth bases, such as Richmond City and Fairfax County.

Unlike LCI, revenue capacity does not use a proxy measure for estimating sources of locally taxable tangible personal property. Instead, revenue capacity estimates the potential revenues from tangible personal property, based on the average of localities' personal property tax rates on the values reported by TAX. Revenue capacity still accounts for the other smaller, taxable sources of wealth using income as a proxy, because there is no direct tax base for those sources.

Index based on local revenue capacity would better capture ability to pay

Revenue capacity can be turned into an index like the LCI. As with the LCI, a revenue capacity index (RCI) would assign a value to each locality relative to the state, with a higher index score closer to 1.0 indicating more ability to pay and a lower score closer to 0.0 indicating less ability to pay. For example, Richmond City's LCI is 0.5139, and its potential RCI would be 0.4936.

JLARC recommended the state adopt an RCI for education funding in its 1988 review of the SOQ formula. A separate 1987 JLARC review made a similar recommendation for determining state funding for local health departments. In both reports, JLARC concluded RCIs allow for more accurate and appropriate determinations of local governments' ability to raise revenues for public services than the LCI. The primary reason cited was that revenue capacity considers variances in local tax bases and directly accounts for all major revenue sources, including personal property.

For this review, a new RCI was formulated that could be used for K–12 education funding, based on a combination of methods in previous JLARC reports, current methods used by DHCD, and new tax base components provided by Virginia Tax (Figure 5-4, Appendix I). The key elements for the new RCI were that it must:

- incorporate the largest local tax bases and own source revenues generated (sidebar),
- standardize for service burden (enrollment) of local school divisions,
- standardize for size of the locality’s general population,
- weight enrollment and general population equally,
- be tax policy neutral, and
- be relatively stable across years.

Own source revenues are all reported revenues generated solely by a locality’s population. This excludes penalties and interest on personal property, payments in lieu of taxes (PILOT), revenue-sharing agreement payments, and intergovernmental payments due to annexation agreements.

FIGURE 5-4
RCI would provide more accurate and appropriate assessment of local ability to pay

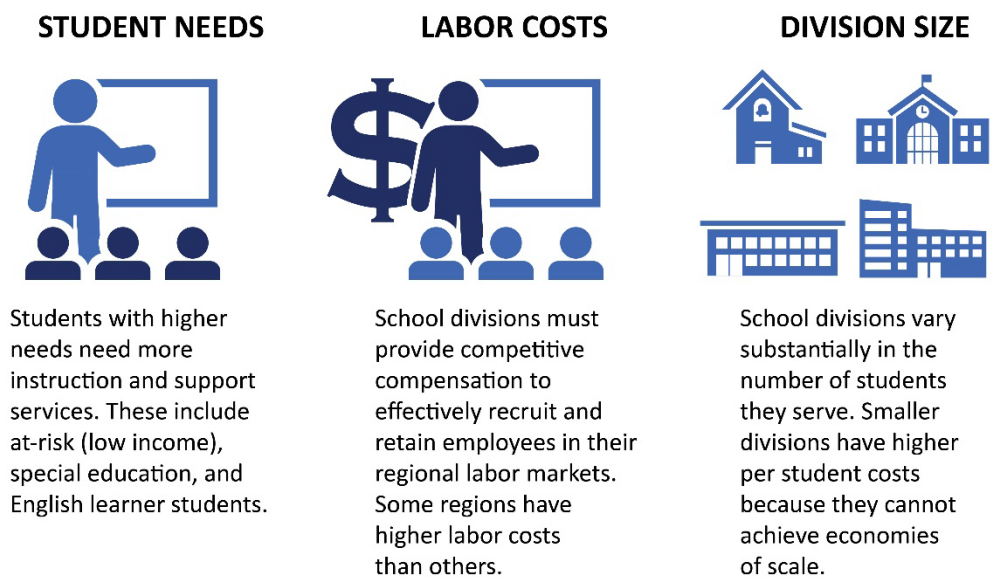
$$\begin{array}{rcl}
 \text{DIVISION} & \text{Local revenue capacity per pupil} & \\
 \text{STUDENT-BASED} & \frac{\text{Local revenue capacity per pupil}}{\text{State revenue capacity per pupil}} & = \text{STUDENT INDEX} \\
 \text{CALCULATION} & & \text{1/2 weight} \\
 & & + \\
 \text{LOCAL} & \text{Local revenue capacity per capita} & \\
 \text{POPULATION-BASED} & \frac{\text{Local revenue capacity per capita}}{\text{State revenue capacity per capita}} & = \text{POPULATION INDEX} \\
 \text{CALCULATION} & & \text{1/2 weight} \\
 & & \times \\
 & & \text{0.45 LOCAL SHARE} \\
 & & = \\
 & & \text{REVENUE CAPACITY INDEX (RCI)}
 \end{array}$$

SOURCE: Simplification of JLARC revenue capacity index formula, for illustrative purposes.
 NOTE: See Appendix I for full calculation summary and explanation of RCI.

6 Cost Drivers: Students with Higher Needs

Other states and academic experts are increasingly emphasizing the importance of adequately accounting for the main drivers of division costs that are largely outside the direct control of school divisions. School divisions need different levels of funding depending on three main cost drivers: student needs, regional labor costs, and division size (Figure 6-1). These are the K–12 cost drivers beyond school divisions’ control that are most commonly identified in education funding studies and accounted for in other states’ funding formulas. The SOQ formula and non-SOQ funding programs recognize these cost drivers to some extent.

FIGURE 6-1
Three main drivers beyond school division controls



SOURCE: JLARC analysis of public education funding research literature.

Higher needs students require additional services; some divisions have more of these students

Higher need students include special education students, English language learners, and “at-risk” children from low-income households. A large, well-accepted body of research concludes these students need more instructional and support services to succeed in school, relative to their peers. Each student group needs different types of additional services, and there are different state and federal legal obligations for serving

them (Table 6-1). For special education students and English learners, services are often provided or coordinated by teachers, aides, and other staff designated to serve them. At-risk students, in contrast, usually receive services provided by the same teachers and staff that work with students who are not at-risk.

TABLE 6-1
Students with higher needs require additional services, many driven by state or federal law

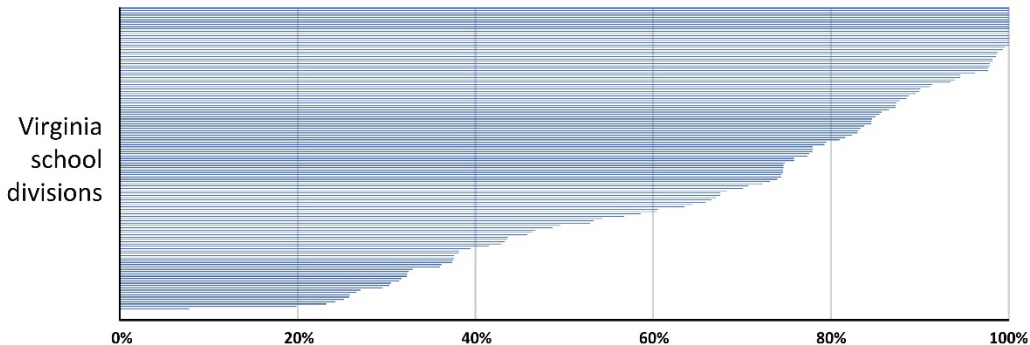
Student group	Additional services needed	Legal obligation to serve students
At-risk (low income)	Prevention, intervention, & remediation services, such as small group work with the general classroom teacher, or reading and math intervention sessions with a tutor. Health & support services, such as basic physical health care, mental health counseling, and social worker assistance.	No legal obligation, but state law sets goal to serve these students: "The General Assembly finds that Virginia educational research supports the conclusion that poor children are more at risk of educational failure than children from more affluent homes" (Code of Virginia § 22.1-199.1). The state has also created several funding programs for at-risk students.
Special education	Services specified in each student's Individual Education Program, ranging from general classroom accommodations to pull-out services to education in a self-contained classroom. Accommodations can range from providing a student with an aide or assistive technology to extra time on work. Pull out services are often specific to the disability, such as specialized reading services for a student diagnosed with dyslexia.	Students are legally entitled to additional services under the federal Individuals with Disabilities Education Act, which guarantees the right to a "free appropriate public education." The law requires students to be included in the general classroom, to the extent possible. Service requirements are also established in Virginia state regulations.
English learner	English language education services. Prevention, intervention, & remediation services, such as math remediation for newly arrived students who are below grade. Health & support services, such as trauma counseling for students who are war refugees.	Federal laws and guidance requires "appropriate language assistance services" by qualified instructors, to provide English learners with "meaningful access" to the same educational opportunities as all students. Laws require English learners to be included in the general classroom, to the extent possible.

SOURCE: JLARC analysis of research literature, Virginia school division practices and workgroup recommendations, and state and federal laws.

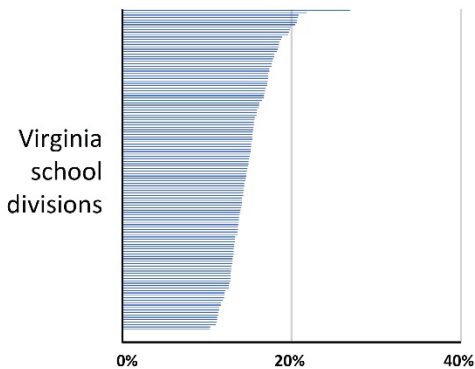
Higher need student populations can vary substantially from one division to the next (Figure 6-2). At-risk students are the largest group of higher needs students, accounting for 53 percent of students statewide. However, the proportion of at-risk students varies significantly by division, ranging from eight to 100 percent of students. Special education students are the second largest group of higher needs students, accounting for 13 percent of students statewide. There is less variation in special education students among divisions, ranging from 10 to 27 percent of students. English learner students are the smallest group of higher needs students, accounting for 10 percent of students statewide. Depending on the division, English learner students make up from zero to 38 percent of students.

FIGURE 6-2
Divisions have varying percentages of their students who are higher needs

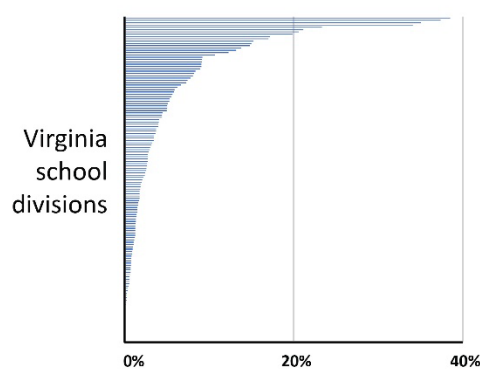
AT RISK STUDENTS (as percentage of all students)



SPECIAL EDUCATION STUDENTS
 (as percentage of all students)



ENGLISH LANGUAGE LEARNER STUDENTS
 (as percentage of all students)



SOURCE: JLARC analysis of VDOE student demographic data.

NOTE: At-risk student count determined using each school division’s weighted April 1, 2023 identified student percentage (count of students automatically certified for free school meals because of participation in certain government benefits programs weighted by 1.6) multiplied by total FY23 fall enrollment. Special education student count includes only students served in the public school system; it does not include students in private placements under the Children’s Services Act. FY22 data is used for special education because FY23 December 1 child count data for special education was not yet available. English learner student count includes only students who were identified as English learners. The same student can be counted in more than one group.

Funding for higher needs students has declined or trails benchmarks

Virginia provides school divisions with additional state funding for higher needs students, in recognition of the additional services these students require and associated legal obligations. State funding for students with higher needs comes from both SOQ and non-SOQ funds (Table 7-2). Funding for at-risk students—which is largely used to provide prevention, intervention, and remediation services—is distributed based on student poverty and a few other considerations. However, unlike funds for special education and English learner services, at-risk funds can be used to pay for services that may benefit any students within a given school or division.

SOQ formula accounting for higher needs students

- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

TABLE 6-2
State provides funding for students with higher needs through SOQ and non-SOQ programs (FY23)

State funding for...	SOQ programs	Non-SOQ programs	Total state funding
At-risk (low income)	\$240M ^a (32% of total)	\$565M (77%)	\$737M
Special education	\$590M ^b (81%)	\$138M (19%)	\$728M
English learner	\$98M (100%)	\$0 (0%)	\$98M

SOURCE: JLARC analysis of VDOE and state budget data.

NOTE: Numbers in table may not total because of rounding.

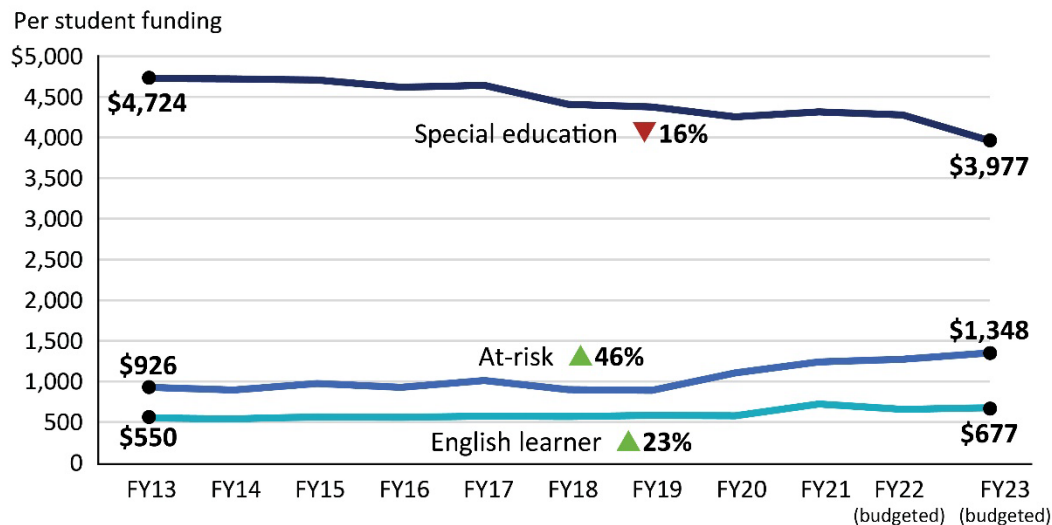
a SOQ at-risk funding includes \$126 million from the Prevention, Intervention, Remediation (PIR) account (teacher salaries) and an additional \$47 million in benefits and payroll taxes associated with PIR funding that is captured under other SOQ accounts. It also includes the Early Reading Intervention Program (\$51.2M) and SOL Algebra Readiness Program (\$15.8M), which are not SOQ accounts but are considered SOQ required.

b SOQ special education funding includes \$428 million from the Special Education account (teacher and aide salaries) and an additional \$162 million in benefits and payroll taxes associated with special education funding that is captured under other SOQ accounts.

Over the past 20 years, Virginia has marginally increased funding for special education, but it has not kept pace with inflation or growing student needs. State funding per student has declined 16 percent, after adjusting for inflation and the moderate growth in the number of special education students (Figure 6-3, next page). The decline is attributable to state funding remaining fairly constant over this period while the special education student population has grown. Virginia educators said that their special education students also require more services than in the past, in part because of an increase in students diagnosed with an autism disability. While *state* funding has declined, the *total* actually spent per student on special education has increased 17 percent from FY13 to FY21, after adjusting for inflation. This additional funding for special education has mostly come from *local* governments.

In contrast to special education, state funding for at-risk students and English learners has increased, after accounting for inflation and growth in these student populations. The General Assembly significantly increased funding for these two groups of higher needs students in the 2022–2024 biennial budget.

FIGURE 6-3
State funding for special education has declined; funding for at-risk students and English learners has increased



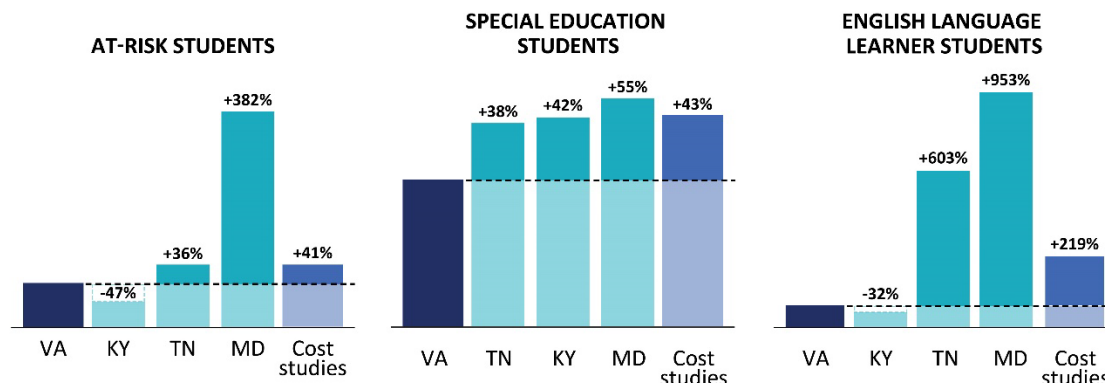
SOURCE: JLARC analysis of VDOE and state budget data.

NOTE: Presented in FY21 dollars. FY22 and FY23 figures are based on budgeted expenditures and not actual reported revenues. FY23 figure makes several assumptions of future inflation and enrollment changes. At-risk funding increase in FY20 was partially attributable to a change in data source used to identify at-risk students (changed from free lunch eligibility report to identified student percentage report data).

Virginia provides less state funding (SOQ and non-SOQ) for higher need students than three of its bordering states—Maryland, Kentucky, and Tennessee—on a per student basis. (Data about all states’ spending on higher needs students is not readily-available; higher needs student funding was too complex to estimate per student spending amounts for North Carolina and West Virginia.) Virginia’s state funding for higher needs students is also lower than what education cost studies in other states have recommended (Figure 6-4) (sidebar). This comparison considers only state funding, and so does not include additional local and federal funds that are spent on these students in Virginia and other states. It is possible some Virginia state funding that goes toward higher needs students is not being captured in this analysis because of how the funding is accounted for.

Education cost studies attempt to estimate the amount of funding needed by public schools in a given state, including additional amounts of funding needed for higher need students. At least 31 cost studies have been performed in other states since 2013.

FIGURE 6-4
Virginia’s state funding for higher needs students trails benchmarks



SOURCE: JLARC analysis of VDOE and state budget data, other state funding formulas, and cost studies.
 NOTE: Other state per pupil amounts are derived from their formula weights and base student funding amounts, adjusted for inflation and each state’s Comparable Wage Index for Teachers (CWIFT). Tennessee’s funding formula changed in 2022, and education funding was increased by \$1 billion; those changes are reflected here. The cost study amounts are calculated from the midpoints (average or median) per pupil base amounts and student weightings recommended in the cost studies reviewed, adjusted for inflation and CWIFT. Cost study recommendations were also weighted to reflect Virginia’s goal of sharing SOQ funding obligations between the state (55 percent share) and local governments (45 percent share).

More information is provided in Appendix F (special education) and Appendix G (English learners).

Funding for at-risk students is treated as non-required and is less than likely needed

The state has eight programs that fund prevention, intervention, and remediation services for at-risk students. Some programs provide broad funding for these services, while others are targeted at specific remedial services (Table 6-3, next page).

Each of the eight programs uses a slightly different measure to allocate funding, but all use some measure of student poverty and/or student test scores (typically Standard of Learning test results). All eight programs require a local match except for the smallest program (Project Graduation). Funding for five programs is determined by formulas unique to each program, as established in the Appropriation Act. The other three programs are not governed by formulas; the governor and General Assembly determine a specific funding amount for each program.

TABLE 6-3
Virginia has eight funding programs for at-risk students

Program	State funds (FY23)	Description	Funding determined by a formula	SOQ-required
Broad programs \$463 million				
At-Risk Add-On	\$337 million	Additional per-student funds for at-risk students Based on student free lunch percentage	✓	✗
SOQ Prevention, Intervention, and Remediation	\$173 million (\$126 million PIR account; \$47 million related funds in other SOQ accounts)	Funds for 1 hour daily of remedial instruction at a 10:1 to 18:1 student-teacher ratio Funding based on SOL failure rates but is distributed using 3-year average free lunch percentage	✓	✓
Targeted programs \$216 million				
K-3 Class Size Reduction	\$142 million	Funds for reducing K-3 class sizes to a student-teacher ratio between 14:1 and 19:1 Based on 3-year average free lunch percentage	✓	✗
Early Reading Intervention	\$51.2 million	Funds for early reading intervention services to students (K-3). Based on percentage of students identified as needing assistance through state literacy screening test (PALS) ^a	✓	✓ ^a
SOL Algebra Readiness	\$15.8 million	Funds for math intervention services to help 6-9 th graders pass Algebra 1 SOL Based on students' free lunch percentage	✓	✓ ^a
Early Reading Specialists Initiative	\$3.5 million	Funds for 1 reading specialist per school for schools with lowest SOL pass rates Based on Grade 3 SOL reading pass rate	✗	✗
Math/Reading Specialists	\$1.8 million	Funds for 1 math or reading specialist per school for schools with lowest math/reading SOL pass rates Based on spring SOL math/reading pass ^b	✗	✗
Project Graduation	\$1.4 million	Funds to provide instructional support for students passing coursework but failing SOLs for diploma (does not require local match) Based on SOL first attempt fail rate ^c	✗	✗

SOURCE: JLARC review of Virginia Department of Education budget tools.

^a VDOE staff indicated that these programs, while classified as Lottery funded programs in the Appropriation Act, are considered SOQ-required programs.

NOTES: Divisions may use funds from the broad at-risk funding programs (At-Risk Add-On, K-3, SOQ PIR) on a wide array of positions, programs, and services. Only the K-3 program has a specific requirement that divisions certify that grades K through 3 fall within specific pupil/teacher ratios to receive and use K-3 funding. Targeted funding programs (Early Reading Intervention, Early Reading and Math/Reading Specialists, SOL Algebra Readiness, Project Graduation) require additional certifications from school divisions to receive funds. For example, the Early Reading Intervention and SOL Algebra Readiness program require divisions to certify that students receiving support services are retested at the end of the school year, but also provide divisions discretion on what programs, additional staff, or other intervention services funds are used for.

^a The Phonological Awareness Literacy Screening (PALS) is a measure of students' knowledge of important literacy fundamentals administered to grades K-3. ^b School level SOL Math and Reading pass rates are used for this program. The school's assigned pass rate used to determine qualification for funding is the lower pass rate. ^c SOL first attempt fail rate is the division wide sum of first attempt failures for high school level SOL tests.

At-risk programs are essential for academic success of low income students, but most are not classified as required SOQ funding

Funding programs that support at-risk students are used to provide additional instructional and support services—such as reading and math intervention services—that educators and academic experts agree are essential for student success. Academic research literature finds that funding these types of services are crucial for at-risk students to succeed at the same levels as their peers.

Resource needs increase substantially at schools with high concentrations of students in poverty, according to academic research literature. Low income students often need more direct work with teachers or instructional specialists, meal assistance, and before and after school services to succeed academically. This is consistent with the conclusions of the Virginia K–12 staffing needs workgroups, which identified significantly more instructional support staff (e.g., reading specialists) and health staff as being needed in schools with higher concentrations of poverty. (Workgroups also noted the need to slightly increase the number of teachers and certain other key positions at these schools.) In addition, an analysis of Virginia students' historical SOL math, reading, and writing pass rates confirmed divisions with more low income students typically achieve lower academic performance. From 2017 to 2019, division pass rates on each SOL test declined by between 0.216 (Math) and 0.268 (Writing) points for each percentage point increase in free lunch eligible students on average.

Despite the importance of this at-risk funding, only about one-third of at-risk funding is provided through the required SOQ programs. Unlike SOQ funding, non-SOQ funding is considered supplementary. By not including at-risk funding in the SOQ formula, local governments are not legally required to provide matching funds. In most cases, if the local government declines to provide matching funds for an at-risk program, the school division receives no state money from the program. This rarely occurs, although one high poverty rural division did not receive this funding in FY23 because its local government did not provide matching funds.

Given how essential at-risk funds are for students who need them to receive a quality education, both of the *broad* at-risk programs should be SOQ required. The state could accomplish this by converting the At-Risk Add-On program into an SOQ-required program, alongside the Prevention, Intervention, and Remediation program. The change would also ensure that at least all of broad at-risk funding (69 percent) is SOQ-required.

State's broad at-risk programs do not adequately account for divisions' low income students

The state's two broad at-risk funding programs would ideally provide school divisions with funding in proportion to their at-risk student populations. According to the academic research literature:

- Student poverty should be the main indicator used for allocating at-risk funding.
- All school divisions need a standard “base” level of services and funding for each at-risk student. Low income students need additional resources to support learning, even if those students are in classrooms with high income peers.
- Additional funding is needed for students who attend schools with high concentrations of poverty, in which resource needs are compounded.

Virginia’s largest at-risk funding program, the At-Risk Add On, *overemphasizes* concentration of poverty when determining how funds are allocated. While the funding formula should adequately account for divisions with higher concentrations of poverty, even wealthier divisions need a base amount of funding to serve their at-risk students. The state’s At-Risk Add On program provides divisions with greater concentrations of at-risk students far more state funding per student than divisions with fewer, but still moderate numbers, of at-risk students. For example, Albemarle County Public Schools received only \$265 per at-risk student because it was a relatively lower poverty division (26 percent of students qualified for free lunch). In contrast, Cumberland County Public Schools received \$1,947 per low income student, or seven times more than Albemarle, because it was a relatively higher poverty division (77 percent free lunch).

In contrast, the state’s Prevention, Intervention, and Remediation (PIR) program (which is the state’s second largest at-risk funding program and is already SOQ required) uses test scores rather than poverty as the primary indicator of funding need. (Free lunch rates are used to distribute funds.) This approach is inconsistent with academic research. As a result of this funding approach, the PIR program does not account for the additional funding needed per student in divisions with a higher proportion of low income students. For example, King William and Sussex County Public Schools each received around \$450 in program funding per student, even though King William is a low poverty division (27 percent free lunch) and Sussex is a high poverty division (76 percent free lunch). An additional drawback of the PIR funding approach is that, as a school division’s test scores improve in response to services, funding for these services decreases even if it is still needed to help maintain improved performance over time. Academic performance may improve yet the student still lives in poverty and experiences its associated challenges.

Neither of the broad programs are based on how much staffing or funding a school division actually needs to support its at-risk students. Instead, At-Risk Add-On funding amounts have been determined through the budget process, based on what can be afforded in a given budget cycle. PIR funding does use a staffing-based calculation to determine funding, but like other SOQ calculations, PIR calculations are not clearly tied to any actual estimate of current staffing levels.

State’s targeted at-risk programs are well designed but the smaller programs do not provide enough funding to achieve their purpose

The largest targeted at-risk program, for reducing class sizes in grades K–3, has a well-designed funding formula and is well regarded by school divisions. Most divisions are eligible for this funding, and all eligible divisions typically participate in the program.

For three of the other, small targeted programs, there was no relationship between the amount of funding allocated and the amount needed. For example, funding for the Math/Reading Instructional Specialists and Early Reading Specialists Initiative programs is determined through an appropriation amount that appears to be less than what is needed to achieve each program’s goal. The programs are intended to fund specialists at underperforming schools, but only provide enough funds for the state share of 122 positions across 26 school divisions. JLARC staff estimate that providing one reading specialist to each underperforming school—defined as schools with under a 50 percent SOL pass rate—would require 957 specialists. This is about eight times more positions than currently funded.

Four of the smaller, targeted at-risk programs distribute funds based solely on test scores. Using test scores to distribute funding for these programs is justifiable because they are intended to address specific academic performance problems related to reading and math. They are not broad funding programs like At-Risk Add-On or PIR.

Data used to estimate student poverty for at-risk funding is outdated and increasingly inaccurate

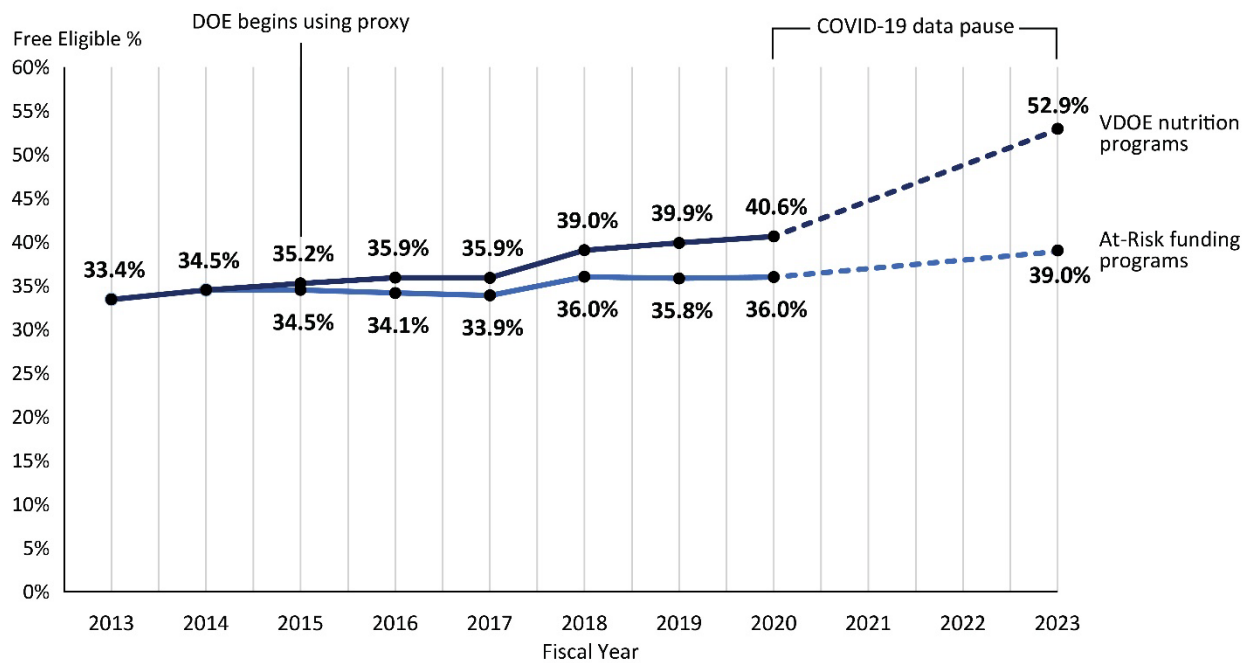
Virginia and other states have historically used free lunch eligibility as the measure of student poverty in their at-risk funding formulas. Free lunch eligibility was historically based on the number of students who applied and were approved for free lunch, as required by the federal government. However, in 2014, the federal government started the Community Eligibility Provision (CEP) program. CEP allowed schools and school divisions with large populations of low income students to receive federal nutrition funding for *all* students without collecting annual free lunch applications. Consequently, paper applications (as have historically been used) for free lunch eligibility are no longer collected by many Virginia schools.

Virginia continues to use outdated free lunch eligibility data in its funding program formulas even though data for many schools and divisions is up to seven years old (sidebar). For example, some Charlottesville City schools joined the CEP in FY17. The state’s at-risk funding programs use Charlottesville’s FY16 free lunch percentage to estimate how many students would be eligible in FY23, which in turn determines how much funding the division receives. This out-of-date free lunch data is being used to estimate some portion of low income students in 67 Virginia divisions for the current biennium and may be used for as many as 116 divisions in the FY25–26 biennium as additional divisions enter CEP participation.

State budget officials have recognized the need to replace the old free lunch rates, but have not been able to agree on a new measure because of concerns about the accuracy of alternative measures. However, the quality of these alternative measures has improved since the last deliberation about this issue in 2018.

For schools and divisions that have experienced an increase in student poverty since 2015, using this outdated data undercounts low income students and results in less at-risk funding. Student poverty has been increasing statewide, and the free lunch rates used by at-risk funding programs show a substantially lower rate of poverty than the more accurate rates used by the Virginia Department of Education’s (VDOE) own school nutrition programs. Most recently, Virginia’s at-risk funding programs estimated 39 percent of students were free lunch eligible, much less than the state’s school nutrition program estimate of 53 percent (Figure 6-5). If the more accurate school nutrition estimates were used, school divisions would be eligible to receive about \$32 million more in state funds under the At-Risk Add On program alone.

FIGURE 6-5
Old data used to estimate at-risk funding program eligibility undercounts
number of eligible students, compared to better VDOE nutrition program data



SOURCE: JLARC analysis of VDOE free lunch proxy compared to VDOE Office of School Nutrition data. A federal policy paused required data collection for lunch program participation during the COVID-19 pandemic beginning in fiscal year 2021 through fiscal year 2022.

NOTE: For explanation of differences in data sources and an explanation of JLARC estimation methodology, see Appendix B.

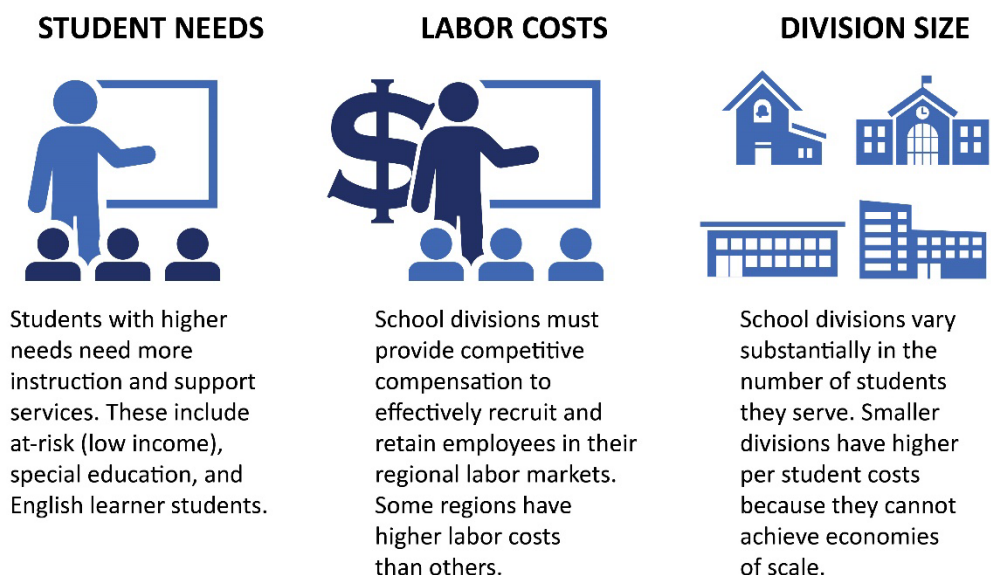
VDOE’s nutrition program data more accurately estimates the number of free lunch eligible students because it uses current data and a valid methodology. VDOE’s nutrition program annual free lunch reports use a blend of the most recent data from (a) traditional free lunch applications from non-CEP schools and divisions and (b) student enrollment in social services programs, weighted to approximate free lunch and reduced lunch eligibility for CEP schools and divisions. Prior to 2020, this social services

data was not consistently collected and validated across all school divisions. However, as of 2020, a unified statewide data system has been implemented, and data is now consistently collected and verified for all schools and divisions (including both CEP and non-CEP participants). This nutrition program data now provides a far more reliable and consistent way to measure student poverty across school divisions and could be used to direct state funding for at-risk students.

7 Cost Drivers: Labor Costs and Division Size

School divisions need different levels of funding depending on three main cost drivers: student needs, labor costs, and division size (Figure 7-1). (Student needs as a cost driver are described in Chapter 6.) These are the cost drivers beyond school divisions' control that are most commonly identified in education funding studies and addressed to varying degrees in other states' funding formulas. Virginia's formula recognizes these cost drivers to some extent in its funding programs.

FIGURE 7-1
School division funding needs are driven by three main cost drivers



SOURCE: JLARC analysis of public education funding research literature.

Labor costs are how much school divisions must compensate their employees to compete within their regional job market. Virginia's school divisions compete for employees with each other, school districts in other states, and the private sector. School divisions' labor costs can vary substantially depending on where they are located. Typically, divisions in wealthier regions with many higher paying jobs must offer higher compensation to recruit and retain employees than divisions in less wealthy regions with fewer and lower paying jobs. The state attempts to account for higher labor costs in wealthier regions through the cost of competing adjustment (COCA) in the Standards of Quality (SOQ) formula, which is applied to 17 school divisions in and around Northern Virginia.

Division size is another main factor that affects how much a division spends per student. Smaller divisions spend more per student because they cannot achieve economies of scale. Economies of scale occur when an organization becomes large enough to operate more efficiently. For example, a larger school division can have fuller classrooms, which results in fewer staff per students. In addition, a larger division’s fixed costs, such as utilities and insurance, are spread over a larger student population. The state provides a small amount of additional funding to three very small school divisions, based on their size and a few other considerations.

SOQ formula does not accurately account for regional differences in labor costs

An accurate education funding formula should account for variation in labor costs across economic regions. Labor costs are by far the single largest K–12 expense, and these costs vary widely across the state. The SOQ formula needs to consider labor cost variation or it will inaccurately estimate labor costs (both in very low cost and very high cost regions). The formula should also be based on relatively recent data that reflects actual labor costs, to the extent possible. Other states, such as Maryland and Wyoming, have statewide cost indexes that provide adjustments for higher labor costs for some school divisions.

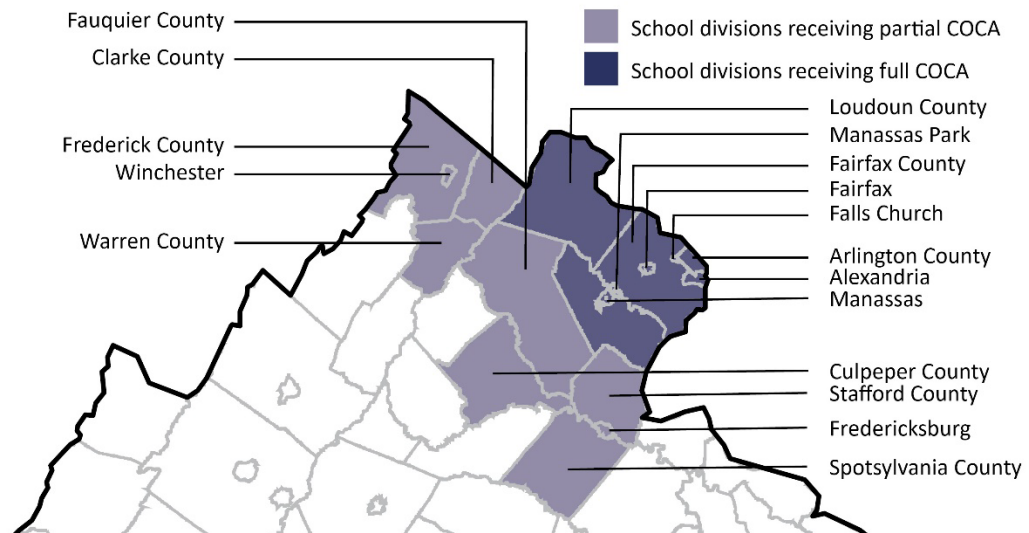
Virginia’s SOQ formula accounts for higher labor costs in some divisions through the COCA (Figure 7-2). The COCA is applied in the second step of the SOQ formula, when instructional and support compensation costs are calculated. The COCA is also used to adjust funding for some non-SOQ programs.

SOQ formula accounting for higher cost labor markets

- Clear & justifiable
- Reflects prevailing practice
- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

FIGURE 7-2
Divisions in and around Northern Virginia receive either a full or partial COCA



SOURCE: Appropriation Act.

The SOQ formula uses the COCA to provide a 9.83 percent increase to the salary assumptions for instructional staff, and a 24.61 percent increase to salary assumptions for support staff, for certain school divisions in Northern Virginia. These divisions are referred to as receiving the “full” COCA. In addition, several school divisions on the outskirts of Northern Virginia and along the I-95 corridor receive one-fourth of the COCA. These divisions are referred to as receiving a “partial” COCA.

The COCA for support staff has not been fully funded. While state policy says the COCA for support staff should be an additional 24.61 percent, it has not been this amount for more than a decade. The actual COCA funded for support staff has ranged between 16 percent and 22.7 percent since FY10.

The COCA excludes several divisions with above average labor costs and underestimates labor costs in divisions currently receiving it

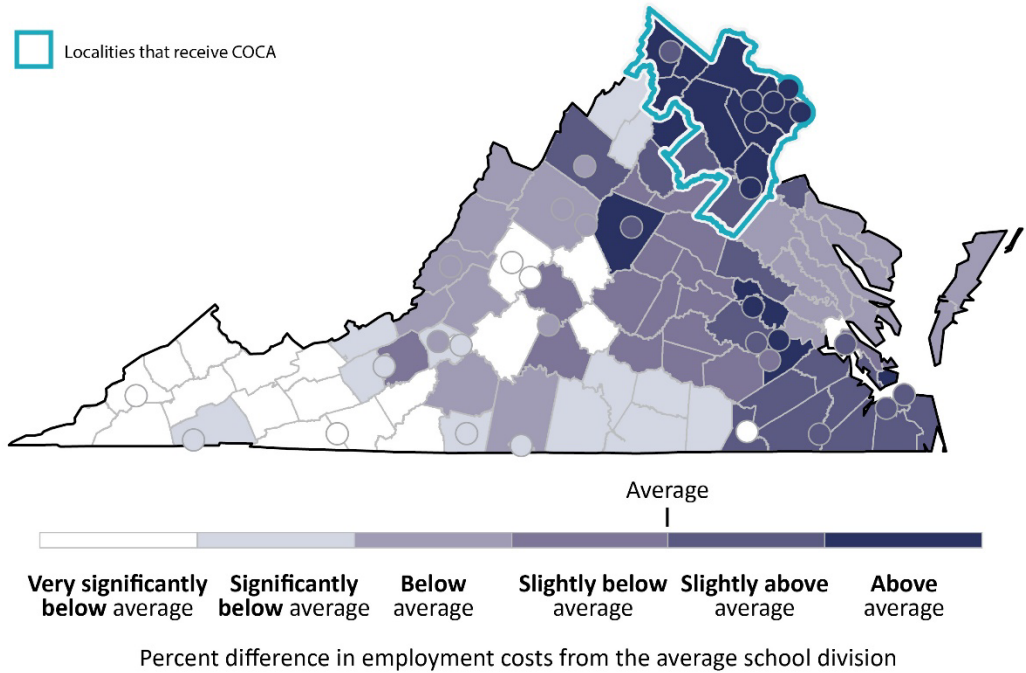
The COCA design, which applies flat percentage adjustments to a designated region, does not accurately capture variation in labor costs across the state or to regions it applies to. This results in divisions potentially being left out or receiving adjustments that do not accurately reflect their higher labor costs.

While only divisions in and around Northern Virginia receive the COCA, several other divisions outside of that region are in localities with above-average labor costs. JLARC staff estimated differences in regional K–12 labor costs, using the Comparable Wage Index for Teachers (CWIFT, sidebar), and found several localities in the Central Virginia and Tidewater regions with labor costs above or slightly above average (Figure 7-3). Although labor costs in these localities were higher than average, they were not as high as those in Northern Virginia. For example, Richmond’s labor costs were approximately 11 percent higher than the average division in 2019, which was higher than some of the localities where divisions receive the partial COCA but significantly lower than Arlington County (43 percent) or Alexandria (38 percent).

For school divisions that currently receive the full or partial COCA, the adjustment they receive is not in proportion to the actual difference in their regional market labor costs. CWIFT data was used to estimate the adjustment each COCA division would theoretically need to cover its employment costs. The JLARC-calculated adjustment was compared to the COCA adjustment divisions received for instructional positions. Compared to the average division, the estimated cost of labor for instructional positions was 29.3 percent higher for divisions receiving the full COCA and 11.2 percent higher for divisions receiving the partial COCA (Figure 7-4).

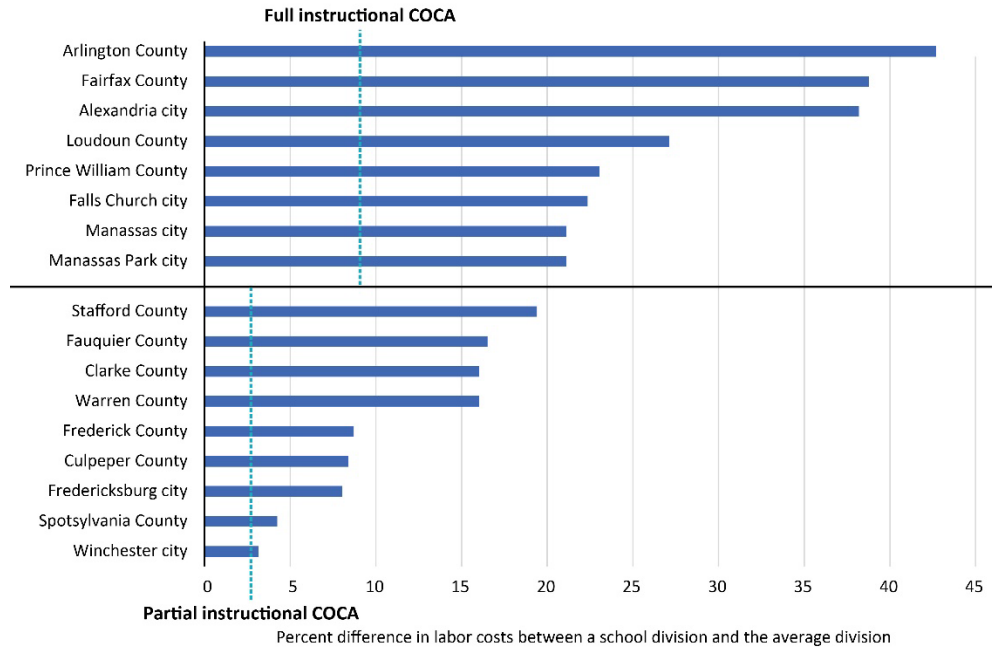
The Comparable Wage Index for Teachers (CWIFT) is an experimental index created by the National Center for Education Statistics (NCES) to facilitate comparison of education funding across states and school divisions. It uses U.S. census data to measure regional variations in wages and salaries of college graduates who are not PK–12 educators. The CWIFT is normally indexed to the national average wage. JLARC staff adjusted the CWIFT values for Virginia school divisions so that they were indexed to Virginia’s statewide average wage.

FIGURE 7-3
Several divisions outside of Northern Virginia have above average labor costs



SOURCE: JLARC analysis of CWIFT data.

FIGURE 7-4
COCA amounts are substantially below actual labor cost differential



SOURCE: JLARC analysis of CWIFT data.

NOTE: Fairfax city and Fairfax County are combined.

SOQ formula uses COCA percentages that are out of date

The current COCA was designed and implemented in 1995. Due to data limitations at the time, JLARC staff developed the COCA percentages using the pay differentials between state employees working in Northern Virginia and in other parts of the state. The state government pay differentials used were generated from a 1991 limited survey of private market wages conducted by the Department of Personnel and Training (now the Department of Human Resource Management). The COCA amounts derived from that differential have not been updated since 1995, even though state government no longer uses the pay differentials that served as the basis for the COCA. Northern Virginia has experienced dramatic population growth and labor cost increases since 1995, which are not reflected in the outdated COCA percentages used in the formula.

Because there was much less labor cost data available when the COCA was first developed, the 1995 JLARC methodology represented a reasonable approach at the time. However, newer and better data is now available. In the past two decades, economists have developed much more statistically rigorous measures of variation in labor costs. These measures rely on large samples of up-to-date private market wage data (sidebar). A 2012 JLARC review recommended a similar, updated wage index measure to replace the COCA, but this recommendation was not implemented.

Applying separate adjustments for the broad categories of instructional and support staff is also not consistent with how labor markets function. Researchers generally agree that markets consist of two labor pools: “professional” salaried workers with advanced degrees and “non-professional” hourly wage workers. Cost of labor adjustments should separately account for these two very different labor pools. Instead, the SOQ formula applies the same support staff COCA to superintendents and custodians. Applying the same support COCA to these professional and non-professional staff can contribute to inaccurate calculations of division funding needs.

The state could improve the accuracy of the SOQ formula by adopting a modern and more accurate cost index for professional positions, including both instructional and support positions. A cost index allows for a unique calculation of labor costs for every school division. The index could be used to identify all divisions that have above average labor costs and the percentage adjustment needed to account for these costs. Adopting a cost index for professional positions would be relatively simple to implement because the SOQ formula already calculates funding needs at the position level. A separate cost index could be adopted for non-professional staff. Though it may be difficult to implement, downward adjustments could be made in very low cost regions to ensure the validity of the measure’s application in the SOQ formula.

The two most commonly used **geographic labor cost adjustments** are comparative wages indices (CWI) and hedonic wage indices (HWI). CWIs measure geographic variation in wages for professions and workers similar to teachers in terms of characteristics like age, education, etc. HWIs go further and attempt to account for factors outside of labor cost that may require a school division to pay teachers more—for example, a hedonic wage index could provide higher salaries to a school division with a higher poverty rate. While both have significant advantages over the COCA, researchers generally agree that CWIs are easier to calculate and update.

SOQ formula does not account for small divisions with higher costs per student

SOQ formula accounting for small divisions lacking economies of scale

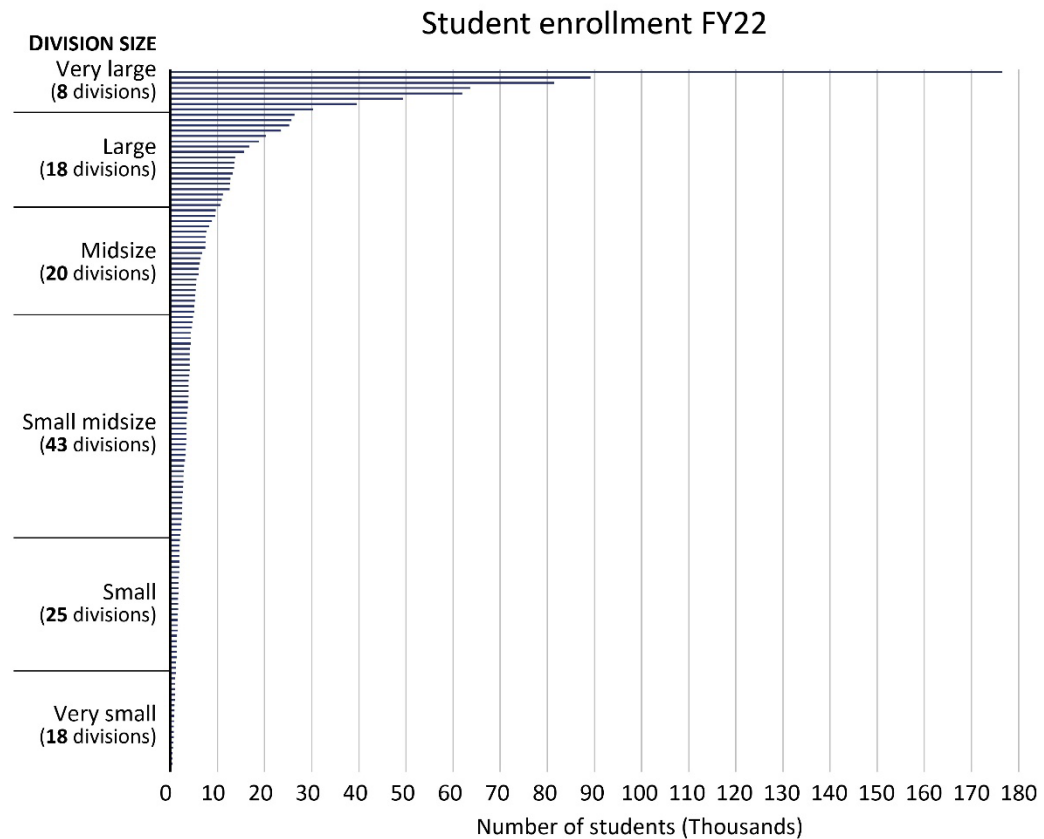
- Clear & justifiable
- Reflects prevailing practice

- Accurate
- Fair
- Predictable
- Transparent

Throughout the report, different elements of the SOQ formula are scored on these six criteria (described in Appendix E).

Virginia’s school divisions vary substantially in size. The state has eight very large school divisions with more than 30,000 students each, including the partner division of Fairfax County and Fairfax City Public Schools with 175,000 students (Figure 7-5). The state also has 18 very small divisions with fewer than 1,000 students each, including Highland County Public Schools with 180 students. A majority of school divisions (59 percent) serve sparsely populated rural counties. The remaining divisions serve more densely populated cities (8 percent) and suburban counties (8 percent) in the state’s major metropolitan areas, or small cities and towns (17 percent).

FIGURE 7-5
School divisions in Virginia vary substantially in size



SOURCE: JLARC analysis of VDOE enrollment data.
NOTE: Data used is end-of-year Average Daily Membership for FY22. Size groupings were determined by JLARC based on review of size distributions, research literature, and interviews with school divisions.

Small school divisions require more funding per student

Smaller school divisions need relatively more funding per student, because they cannot achieve the same economies of scale as larger divisions. For example, larger school

divisions are able to operate more efficiently than smaller divisions by having fewer staff per student. Larger divisions also tend to have relatively lower fixed operational costs per student—such as central office, transportation, and facilities costs—because these costs are spread over a larger student population.

Academic research literature on education funding finds that as school division size increases, the marginal cost of K–12 operations typically decreases. Research finds that divisions achieve most of their efficiency gains when they have at least 2,000 students, although some additional, marginal efficiency gains occur as divisions educate more than 2,000 students. When a division educates more than 20,000 students it may begin to experience diseconomies of scale (sidebar).

Virginia’s small school divisions spend more per student because they have relatively higher staffing needs and fixed costs

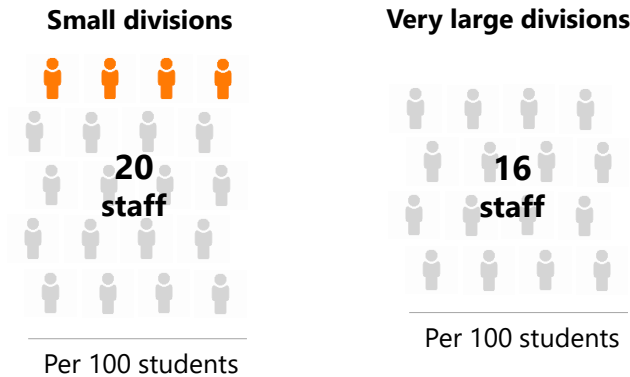
Experience in Virginia is consistent with the academic research literature about division size affecting costs per student. Actual Virginia school division funding data shows that small school divisions with less than 2,000 students tend to spend more per student, while larger divisions tend to spend less, after accounting for differences in cost of labor. Even though small divisions spend more in total per student, (i) a smaller portion of their total spending is on instruction, and (ii) a greater portion is on fixed, non-instructional expenses such as transportation, administration, and facilities. Divisions in rural counties have especially high transportation costs because of their large geographic size and small student populations.

Smaller division costs are driven in part by needing relatively more staff per student. In FY21, small divisions in Virginia employed about 20 staff per 100 students, whereas very large divisions employed 16 staff per 100 students (Figure 7-6, next page). A key reason is that a smaller number of students is harder to efficiently group into classes, so small divisions often have smaller classes (which can more effectively facilitate instruction but raises costs per student). Smaller school divisions also described some of their unavoidable administrative inefficiencies. For example, compiling a financial report or supervising a room of test-takers requires the same staff time regardless of the number of students. Moreover, administrators in small divisions said that some staff had to be shared across schools, which results in “windshield time” when they travel between schools.

Very small divisions have the highest costs per student in Virginia. For example, a division with under 500 students, such as Highland County Public Schools, can require 50 percent or more additional funding per student than a large division with 10,000 students. School division funding needs were modeled based on size, using a formula developed by academic researchers. The model found that Virginia’s small and very small school divisions need 15 to more than 50 percent more funding per student than large divisions (Figure 7-7).

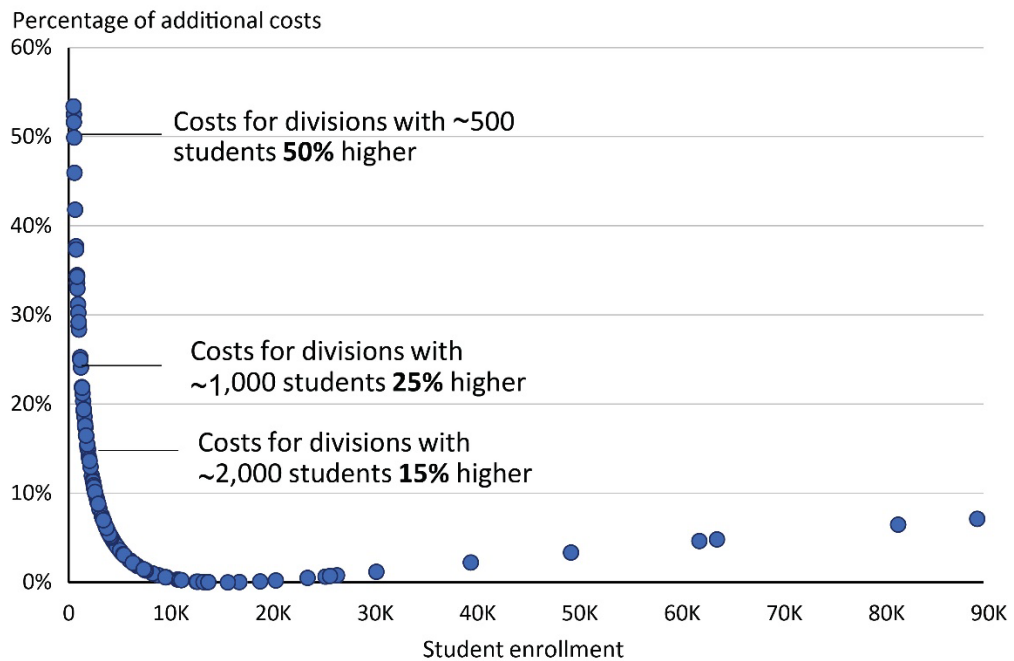
Very large school divisions can experience diseconomies of scale, when costs begin to increase from the added administrative expense of managing larger scale operations. This issue has been identified in the research literature and was raised by a few Virginia school divisions. However, the increased per student costs experienced by very large divisions are much lower than those experienced by small and very small school divisions.

FIGURE 7-6
Small divisions employ, on average, more staff per student than large divisions



SOURCE: JLARC analysis of Virginia enrollment and staffing data.

FIGURE 7-7
Cost per student is substantially higher for divisions with fewer students



SOURCE: JLARC analysis of Virginia enrollment data using economies of scale formula from cost study researchers. NOTE: Figure shows Virginia school divisions plotted using a formula developed by cost study researchers. The figure does not show Highland County or Fairfax County Public Schools because of the effect their extreme size difference would have on scaling.

Some divisions attempt to share staff to address this inefficiency. Professional associations, however, described the disadvantages and challenges of sharing staff among schools. These include nurses being absent when injuries occur and librarians being

less familiar with book collections in individual schools in which they do not spend all their time.

As a result of their size, small divisions are sometimes unable to provide students with certain instructional opportunities and support services that larger school divisions offer. For example, several superintendents of small divisions said they could not offer the same variety of career and technical education courses as larger divisions, while another superintendent said small divisions were unable to offer higher-level college preparatory programs or in-person advanced placement courses.

SOQ formula does not account for additional per student funding needs of smaller school divisions

More than two-thirds of states nationwide incorporate economies of scale considerations into their K-12 funding formulas, at least to some degree. A national review of state funding formulas found that 35 states included some type of adjustment for divisions with very few students or in sparsely populated areas. For example, under its new formula, Tennessee will provide five percent more funding to divisions with 1,000 or fewer students. Tennessee will also provide five percent more funding to sparsely populated districts with fewer than 25 students per square mile.

SOQ formula does not appreciably account for the additional staffing and funding needs of small divisions

The SOQ formula does not make any direct adjustments to staffing or funding for small divisions, despite their inability to achieve economies of scale. The SOQ formula's staffing standards, which are one of the main drivers of SOQ funding, do not account for these staffing-per-student realities in small divisions. The same staffing standards are applied to school divisions with enrollments from 180 students to 180,000 students. The formula does apply student-to-teacher staffing ratios for elementary schools in a way that appears to award slightly more staff and funding to very small school divisions, but the net effect appears small. Virginia's SOQ formula includes minimum staffing "floors" that are intended to ensure divisions of all sizes receive a certain amount of funding (sidebar), but these are rarely used and do not in practice increase funding for small divisions. Over the past three biennia, only four divisions received this minimum allocation per year, and none of these divisions were small. The SOQ formula features no other funding adjustment based on division size.

The only additional state funding that is provided to small school divisions is \$1 million in supplemental Basic Aid funding (a non-SOQ program). This funding is only provided to three very small school divisions—Highland, Norton, and Rappahannock—based on a combination of their extremely small size and high local composite indexes. However, 41 other divisions have fewer than 2,000 students, including 16 with fewer than 1,000 students. None of these 41 divisions receive this or any other additional state funding to account for their small size and inability to operate efficiently.

SOQ formula provides a minimum number of staff including, support and general instructional staff (51 per 1,000 students, under basic aid calculation) and vocational, and special education staff (six per 1,000 students). The ratios are set in the Appropriation Act.

SOQ formula calculations underestimate small division needs more than larger division needs

Because of problems with staffing standards and calculations cited in Chapter 3, the SOQ formula underestimates staffing needs at small divisions more than it does for larger divisions. This relatively larger underestimation of staffing needs per student in small divisions was found in both actual staffing data and estimated staffing needs:

- Actual staffing - The difference between (i) what the SOQ formula calculates and (ii) actual staffing, was larger in very small divisions than very large divisions (69 percent difference in very small divisions vs. 45 percent difference in very large divisions).
- Estimated staffing needed – Virginia practitioners participating in the 2022 Virginia K–12 staffing needs workgroups estimated that very small divisions would need more staff per student than very large divisions (2.9 times the SOQ formula calculations in very small divisions vs. 1.8 times the calculations in very large divisions).

SOQ staffing calculations also underestimate staffing needs at small divisions because calculations usually do not round up to the nearest full position. Most staffing calculations generate an incremental, fractional number of positions to be funded, such as calculating that a school division needs 12.5 assistant principals. In some cases, incremental positions can be combined with other positions to create a full-time employee position, such as a teacher licensed for both vocational and science classes. However, practically speaking, many division positions cannot be filled by part-time employees. Filling these gaps is relatively more costly for smaller divisions. For example, the SOQ formula might calculate that a small division needs 1.5 gifted teachers. For practical purposes, the division must actually employ two teachers, and so 25 percent of that division's actual staffing needs are not recognized by the formula. In contrast, the formula might calculate a large division needs 17.5 gifted teachers. Assuming the division must practically employ 18 teachers, only 3 percent of its staffing need is unrecognized.

A few calculations in the SOQ formula typically favor small divisions, but the dollar value of these is much smaller than the dollar value of the calculations discussed above. Mainly, the prevailing salaries used in the formula to determine division funding are often higher than the salaries many small divisions actually pay, as shown in Chapter 4. This is because generally, these divisions are located in regions with lower labor costs than other divisions. This results in many small divisions receiving slightly more funding for employee compensation than their actual labor costs. However, the underestimation of small divisions' staffing needs offsets the additional compensation funding.

8 Recommendations and Policy Options for Changing the SOQ Formula

Based on the research presented throughout this report, this chapter (a) recommends near- and long-term changes that should be made to the SOQ formula, and (b) presents policy options for further improving the formula. The recommendations and options presented in this chapter address the major topics discussed throughout this report. They were selected using the six criteria JLARC staff developed for assessing the SOQ formula (Appendix E).

- *Recommendations* are made when the change is needed to ensure the SOQ formula is based on a clear and justifiable rationale and reflects prevailing practice. These are the two Virginia-specific criteria that were derived from the original SOQ task force (1972–1973) and two subsequent attorney general opinions (1973, 1983).
- *Policy options* are presented when (a) they would further improve the accuracy, fairness, predictability, or transparency of the SOQ formula, which are the criteria that have been commonly used in evaluations of education funding formulas in other states, or (b) increasing funding beyond current prevailing practice would better achieve an established statutory goal.

As noted in Chapter 1, the SOQ formula allocates \$10 billion in state and local funds annually, and K–12 funding is the largest single budget item for the state general fund and most local governments. The formula itself is complex and has many inter-related components. Consequently, even modest changes to the SOQ formula may require substantial consideration and deliberation among the wide range of state and local K–12 policymakers and stakeholders.

Recommendations are characterized as near term or long term depending on their fiscal implications and technical challenges associated with implementation and could be phased in over time if funding is available. Near-term recommendations are easier to implement in the state’s SOQ funding model application and so could potentially be implemented sooner. While several recommendations have significant financial implications for the state, others have no cost. The near-term recommendations could be phased in across the FY25–26 and FY27–28 biennia. The long-term recommendations would represent more substantial changes to the formula and, in one case, would be substantially more costly. These long-term recommendations would likely need to be implemented over a longer period of time, as would several of the policy options. Virginia has employed a similar phase-in approach when making large funding commitments to the Virginia Retirement System (full funding of actuarial rates phased in from FY13 to FY20) and transportation infrastructure (\$3.6 billion from new taxes

JLARC staff considered potential changes to almost all state funding programs for K-12 operations. However, staff are not making recommendations or options for governor’s schools or regional programs for CTE, special education, and alternative education. Funding for these areas is unique and complex and would require further study to determine if and how funding should be changed. State funding for these areas accounts for less than 2 percent of all state funding.

It is not possible to reliably project exactly how changes presented in this chapter would improve Virginia's standing relative to benchmarks.

As of the date this report was being finalized, the FY23 Virginia baseline spending data, including funding provided by local governments, is not yet available, and the FY24 budgeted funding amounts are not yet determined. The most recent funding data available to compare Virginia to other states is from FY20.

phased in over six years). A similar phase-in approach is currently being used by Maryland to implement major changes to its K–12 funding formula that will total more than \$3 billion by FY30. By providing additional funding, Virginia would be more in line with the benchmarks discussed in Chapter 2 (sidebar).

Recommendations (near and long term) for changing the SOQ formula are summarized in Table 8-1, and policy options are summarized in Table 8-2. The financial impact of the changes shown in this chapter is limited to what the impact on the *state* budget would have been in FY23, after accounting for all funding that was appropriated that year. The cumulative financial impact of these changes would be higher than the sum of the individual amounts shown because of how the changes would interact in the SOQ formula.

In addition to the state budget impact, there could also be substantial changes in *local* funding obligations depending on the recommendation or policy option. However, because many local governments already contribute more than required, the actual impacts on most local government budgets would likely be proportionally lower than the impact on the state budget.

Financial impacts will also vary for each individual school division. [Additional details on the local share of funding and division-level impacts can be found on the JLARC website.](#)

TABLE 8-1
Summary of near-term and long-term recommendations

	State \$ impact (FY23)	Percent change
Recommendations: Near term		
<i>Could be phased in over FY25–26 & FY27–28 biennia, if funding is available</i>		
Address technical issues with the formula	\$45M	0.6%
Discontinue Great Recession-era cost reduction measures	\$515M	6.5%
Calculate prevailing costs using division average, rather than LWA	\$190M	2.4%
Change Local Composite Index to three-year average	–\$1.5M	–0.02%
Convert non-SOQ At-Risk Add-On funding to SOQ-required funding	--	--
Replace outdated and inaccurate free lunch measure	\$250M	3.2%
Consolidate two largest at-risk programs into new SOQ At-Risk Program		
Direct further study of special education staffing needs	--	--

Recommendations: Long term		
<i>Could be phased in by the FY33–34 biennia, if funding is available</i>		
Develop & adopt new staffing ratios, based on actual staffing	\$1,860M	23.5%
Update out-of-date salary assumptions during re-benchmarking	Depends on timing ^a	
Replace cost of competing adjustment with newer, more accurate method	\$595M	7.5%
Adopt economies of scale adjustment to assist small school divisions	\$90M	1.1%

SOURCE: JLARC staff analysis and estimates using in-house JLARC SOQ model developed to approximate fiscal impact.

NOTE: The financial impact of the changes shown here reflect what the impact on the *state* budget would have been in FY23, *after accounting for all funding appropriated that year*. Division-level and local funding impacts can be found on the JLARC website.

^a Cost impact is heavily dependent upon rate of inflation during year in which implemented. Examples given later in chapter.

TABLE 8-2
Summary of policy options

	State \$ impact (FY23)	Percent change
Policy options		
Implement funding plan to achieve state goal for teacher salaries	Depends on goal and plan	
Weight student and general population equally in local composite index	–\$45M	–0.5%
Replace local composite index with revenue capacity index	–\$85M	–1.1%

SOURCE: JLARC staff analysis and estimates using in-house JLARC SOQ model developed to approximate fiscal impact.

NOTE: Division-level and local funding impacts can be found on the JLARC website.

By implementing the recommended changes, Virginia will be better able to maintain a high quality K–12 education system. Much of the additional funding provided under the proposed recommendations and options would go toward employee compensation, hiring additional staff as needed to address critical student needs (e.g., narrow longstanding achievement gaps), and providing support services to higher needs students. Though many of the changes have a substantial cost because of the size of the existing K–12 system, which includes 1.25 million students and has over \$20 billion in total expenditures, the return over time on this spending would likely be evident through a higher quality teacher workforce and students who are better prepared to succeed. These outcomes are expressly set forth as goals in the Code of Virginia for the state’s public K–12 system.

SOQ formula staffing: recommendations & options

The rationale for many of the staffing ratios in the SOQ formula is not clear, and the formula provides for far fewer staff than what is currently prevailing practice in school

divisions. In practice, divisions employ about 58,000 more K–12 staff than the formula’s calculations. Staffing ratios and calculations do not accurately reflect current practice or need. Many, especially those for teachers and special education, are difficult to understand, and their use in the formula is not transparent. The SOQ staffing ratios and calculations therefore do not fully meet any of the criteria used to assess the SOQ formula (Table 8-3). SOQ formula staffing issues are discussed in detail in Chapter 3.

TABLE 8-3
SOQ staffing ratios and calculations compared to evaluation criteria

	Clear & justifiable rationale?	Reflects prevailing practice?	Accurate?	Fair?	Predictable?	Transparent?
SOQ formula staffing ratios and calculations	●	○	○	N/A	N/A	○

Source: JLARC comparison of formula component to evaluation criteria.

Technical problems with staffing and staffing-related assumptions should be addressed

Technical issues result in SOQ formula calculations that do not reflect actual practice. Current SOQ formula calculations exclude several central office clerical positions and instruction professionals, even though school divisions commonly employ staff in these positions. School divisions report both the cost and number of these positions in their annual financial reports, so data is available on how many of these staff there are and what divisions spend on them. To better reflect prevailing practice, these positions should be added into SOQ formula staffing calculations of prevailing staffing ratios. Additionally, VDOE does not apply the current Cost of Competing Adjustment (COCA) to salaries for facility and transportation staff when their salaries are calculated under the SOQ formula. Funding for these positions should be adjusted by the COCA like all other SOQ-recognized positions. The formula also caps the adjustments used in the re-benchmarking process to bring non-personal cost assumptions up to current costs, as directed in the Appropriation Act (Appendix H). The cap should be removed to more accurately capture cost increases.







Another technical issue results in compensation supplement calculations that do not reflect actual practice. When calculating the cost of a compensation supplement, VDOE does not account for the wages of facilities staff. Since facilities staff are also SOQ-funded support staff, they should be accounted for when VDOE estimates the cost of compensation supplements.

Addressing these technical issues would have increased state SOQ funding by about \$45 million in FY23 (+0.6 percent). These issues are discussed in more detail in Chapter 3 and Appendix H.

RECOMMENDATION 1 – NEAR TERM


The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act directing the following technical adjustments to the Standards of Quality (SOQ) formula and compensation supplement calculations: (i) include all division central office positions in the SOQ formula, (ii) apply the cost of competing adjustment to facility and transportation staff salaries in the SOQ formula, (iii) remove the cap on adjustments to non-personal cost assumptions in the benchmarking process in the SOQ formula, and (iv) account for cost of facilities staff salaries in compensation supplement calculations.

Recommendation 1

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?

Develop new simplified staffing ratios that have a more clear rationale and better reflect prevailing practice

The SOQ formula’s staffing calculations do not reflect actual staffing practices. The formula calculates most school division staffing needs using *fixed* staffing ratios that are established in state law and regulations, and the remainder are *prevailing* staffing ratios calculated by VDOE in the SOQ formula. The staffing ratios used in the formula have a major impact on the funding levels calculated. Over time, the General Assembly should restructure and replace the current fixed staffing ratios to better reflect actual practices. Recommended changes to the fixed staffing ratios, including the restructuring of positions and examples of where the ratios could be set, are provided in Appendix K.

State cost:  +0.6%
\$45M (est)

The current fixed staffing ratios should be changed to simplify the staffing calculations and better reflect current, actual staffing levels at school divisions. Changing the current ratios would address the following problems.

- The current ratios for teachers are overly complicated. There are seven ratios for general classroom teachers, and, prior to extensive JLARC staff review and modeling, it was unclear how these different ratios were used to determine staffing calculations. The separate ratios for elementary resource, gifted, and career and technical education teachers are unnecessary given that these teachers serve the same student population as general classroom teachers.
- Currently, the SOQ formula does not include staffing ratios for some positions that are commonly employed by school divisions. Consequently, the SOQ formula does not provide any funding for these positions. The largest position group not currently recognized in the formula is general classroom teacher aides. The formula recognizes kindergarten aides but not aides for other grades, even though school divisions commonly employ them.

Staffing needs for some positions are calculated using the *prevailing* staffing ratios observed in the state at re-benchmarking. Unlike fixed ratios that are set in law, the prevailing ratios change regularly and are calculated under the formula. Currently, the positions determined by prevailing ratios include central office administration, facility maintenance and operations, school clerical, some instructional support, some technology, and a few health positions. Most of these positions are subject to the support cap. Establishing a fixed ratio for these positions would eliminate the need for the cap and treat them like most other positions.

- The current staffing ratios lead to under-calculation of staffing needs. School divisions employ 51 percent more staff than is calculated using current staffing ratios. Staffing needs are under-calculated at each individual school division and across all position categories. The staffing ratios that are furthest from actual practice are those for aides, student counseling and health, and school leadership and instructional support.

The current *fixed* staffing ratios should be replaced with new, simplified ratios that better reflect actual staffing practices. The new staffing ratios should include a single set of ratios for teachers, set by grade instead of school level, which includes general classroom teachers and teacher positions for gifted programs, career and technical education (CTE) and elementary resource teachers. (Separate accounts for gifted programs, and CTE teachers could be maintained, but setting appropriate ratios would require additional research.) A separate ratio for English learner teachers should be maintained, and a new ratio for general classroom teacher aides should be established that recognizes aide staffing for grades 1 through 5. New ratios should also be developed for any other staffing position where there is currently a *fixed* ratio, including school leadership and instructional support, student counseling and health, operations, and central office. Some positions—such as school nurses, school psychologists, and board-certified behavior analysts—could be grouped together in a single health professionals ratio to give divisions flexibility in hiring different numbers of these staff to meet their needs (similar to how these and a few other positions are grouped in the current specialized student support ratio). For consistency, new fixed ratios *could* be established for positions where staffing is currently calculated using a *prevailing* calculation (sidebar), or prevailing ratios could continue to be used. The ratios JLARC staff developed for modeling the funding impact of ratio changes are provided in Appendix K.

Depending on when this recommendation is implemented, the General Assembly could task VDOE with calculating new ratios based on more recent data collected by the VDOE budget office. (Implementing this change would take time, and JLARC staff ratios are likely to be out-of-date by the time this recommendation could be implemented. Some of the JLARC staff ratios rely on data collected by other VDOE offices for non-financial purposes, and using this data in funding calculations may not meet data integrity requirements.) In developing the proposed ratios, VDOE should coordinate with school divisions and the Board of Education, which has statutory responsibility for SOQs.

The current fixed staffing ratios are used for both funding and compliance purposes, so the General Assembly would need to decide if and how compliance requirements should change. The General Assembly could decide to (a) make no changes to compliance requirements by re-enacting the current ratios and limiting their use to compliance purposes, (b) adopt the new staffing ratios for both compliance and funding, or (c) direct the Board of Education to set separate, new staffing ratios for compliance as part of its constitutional duties to prescribe standards.

Revising the staffing ratios to have a more clear rationale and better reflect prevailing practice in divisions would have increased state SOQ funding by about \$1,860 million in FY23 (+23.5 percent). This additional cost is due to the nearly 51 percent difference (58,000 positions) between the number of staff the formula currently calculates are needed and number of staff school divisions actually employ.

RECOMMENDATION 2 – LONG TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to develop and propose a new set of fixed and prevailing staffing ratios for the Standards of Quality formula, in consultation with school divisions and the Board of Education, which should accurately reflect how divisions are staffed and be simpler, easier to apply, and comprehensive.

RECOMMENDATION 3 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and Appropriation Act to establish Standards of Quality staffing ratios developed by the Virginia Department of Education, in consultation with school divisions and the Board of Education, that accurately reflect how divisions are staffed.

Recommendations 2 & 3

- ▲ Clear & justifiable?
- ▲ Reflects prevailing practice?
- ▲ Accurate?
- Fair?
- Predictable?
- ▲ Transparent?

State cost:
\$1,860M (est) ▲ +23.5%

Replacing current staffing ratios with ratios equal to Virginia K–12 staffing workgroup estimates would be a substantial increase

This report already recommends restructuring the *fixed* staffing ratios used in the SOQ formula to reflect actual division practices and simplify what has become an unnecessarily complicated structure. It also recommends increasing ratios to reflect actual practices. The General Assembly could further change staffing ratios to reflect the higher staffing levels developed from the Virginia K–12 staffing needs educator workgroups. The workgroup-based staffing ratios are provided in Appendix K.

In many staffing areas, adopting the workgroup-based staffing ratios would substantially increase staffing and funding. Workgroups indicated that higher staffing levels were needed to effectively educate students, support their physical and mental health, and ensure their success after graduation. The staffing levels proposed by the workgroups reflect the professional opinions of Virginia educators about the staffing levels needed for effective instruction and smooth school operations. Workgroup members emphasized the value that additional staffing would have for students. For example, they believe that increasing the number of counselors would enable more proactive mental health services that would eventually reduce the number of mental health crises experienced by students, and that increasing the number of elementary remedial instructors would improve students’ academic readiness in secondary school. Workgroup proposals also reflected a strong commitment to inclusionary practices for special education and English learner students. For example, they recommended additional special education aides to keep high needs students in the general classroom and

instructional coaches to improve general education teachers' effectiveness at instructing English learners. Workgroups also emphasized the need for general instructional support for teachers and struggling students.

The workgroups recommended staffing levels that were 26 percent higher than actual staffing levels. School division administrators interviewed by JLARC indicated that their schools were understaffed in many of the same position categories workgroups identified as needing the most additional staff. These administrators said that student needs had grown since the pandemic, and more staff were required to meet these needs.

Implementing these workgroup estimated staffing ratios could better ensure an effective education system. However, depending on the assumptions used, increasing staffing levels to what the K–12 workgroups believed is needed would represent an increase in costs equal to a substantial percentage of the state's total general fund revenue collection.

An increase in staffing of this magnitude is also not practical, even if funding were appropriated. As noted in Chapter 1, many divisions are currently struggling to fill the positions for which they have funding. Providing the additional funding to raise staffing far beyond current employment levels would—at least initially—likely only result in vacant positions.

SOQ formula cost assumptions and calculations: recommendations & options

The SOQ formula consists of several assumptions and calculations that lack a strong rationale or deviate from prevailing division practice. Several of these are longstanding parts of the formula, while others have been added to the formula over time to reduce costs when revenue has declined. Other calculations and assumptions used in the formula are less accurate than alternatives and result in some divisions being treated unfairly. None of the calculations or assumptions used are transparent. The SOQ cost assumptions and calculations therefore do not fully meet all of the criteria used to assess the SOQ formula (Table 8-4). SOQ cost assumption and calculation issues are discussed in detail in Chapter 4.

TABLE 8-4
SOQ formula cost assumptions compared to evaluation criteria

	Clear & justifiable rationale?	Reflects prevailing practice?	Accurate?	Fair?	Predictable?	Transparent?
Great Recession-era formula changes				N/A	N/A	
SOQ formula salary cost adjustments				N/A		
State approach for increasing compensation funding		N/A	N/A			
SOQ formula calculation of prevailing salaries					N/A	

SOURCE: JLARC comparison of formula component to evaluation criteria.

Discontinue Great Recession-era cost reduction measures

SOQ formula calculations are currently distorted by three Great Recession cost reduction measures that do not have a clear and justifiable rationale. The support cap is the largest of these reduction measures. While the cap has been presented as a reduction in funding for support services, in practice it actually reduces funding available for instruction as well. Analysis of school division spending found that divisions likely reduced some instructional spending in response to the support cap. Undoing the support cap and other cost reduction measures would also make the formula better reflect prevailing practices at school divisions. The cost reduction measures could be undone by (i) eliminating the cap on support positions, (ii) adding back in the non-personal cost categories that were removed in FY09 and FY10, and (iii) returning to the federal fund deduction methodology that was in place in FY09.

Eliminating these three Great Recession-era cost reduction measures would have increased state SOQ funding by about \$515 million in FY23 (+6.5 percent). About two-thirds of the funding increase is from the removal of the support cap.

RECOMMENDATION 4 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act that directs the following changes to the Standards of Quality formula: (i) eliminate the support cap, (ii) re-instate the non-personal cost categories removed in FY09 and FY10, and (iii) re-instate the federal fund deduction methodology used prior to FY09.

Adjust outdated salary cost assumptions as part of biennial re-benchmarking process, the same as other cost assumptions

Under the state’s current SOQ re-benchmarking process, all of the cost assumptions used in the SOQ formula are updated every biennium, but the salary data used is two

Recommendation 4

- Clear & justifiable?
- Reflects prevailing practice?
- Accurate?
- Fair?
- Predictable?
- Transparent?

State cost: **\$515M (est)** **+6.5%**






years out of date by the start of the funding year. For example, the formula uses FY20 salary expenditures data to calculate FY23 salary funding. All “non-personal” costs are automatically adjusted to reflect anticipated costs at the start of the biennium, but salary costs are not. The state relies on past compensation supplements to adjust funding for salaries, but these do not consistently provide funding that reflects changes in divisions’ actual compensation costs and have not kept pace with actual growth in teacher salaries (or inflation).

Salary cost assumptions used in the SOQ formula should be systematically updated, like all other formula cost assumptions. While this could be a substantial cost in any given biennium, especially following periods of high inflation or growth in labor costs, regular adjustments would help prevent SOQ funding for salaries from falling behind actual salaries. Regular adjustments could also reduce the need to appropriate large one-time compensation supplements to make up for lower funding amounts in prior years.

Regularly adjusting salary cost assumptions used in the formula could help school divisions implement compensation practices that are consistent with recommendations in JLARC’s 2017 state employee compensation report. Regular and more predictable salary funding adjustments would allow school divisions to provide staff with smaller salary increases at regular intervals, which JLARC’s report found was more effective at retaining staff and may help divisions better maintain starting salaries comparable to those paid by other employers.

Adjusting salary cost assumptions as part of re-benchmarking would have increased state SOQ funding by \$490 million in FY23 (6.2 percent), net of the compensation supplement provided that year. However, the cost impact is heavily dependent upon the rate of inflation during the year of implementation. For example, several years earlier the cost impact would have been about \$105 million. (There have been previous time periods in which the difference between the current approach and this new approach would have actually resulted in *less* funding.) JLARC staff’s calculation updated salary costs based on changes in the consumer price index, but costs could also be updated based on changes in a labor cost index. The funding impact of this change would have been unusually high in FY22 because of high inflation rates. In more typical periods with lower cost growth, the funding impact would likely be lower.

Recommendation 5

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
Fair?
-  Predictable?
-  Transparent?

State cost: Heavily dependent on inflation in year implemented

RECOMMENDATION 5 – LONG TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to update the cost assumptions for school division employee salaries used in the biennial Standards of Quality re-benchmarking process to better reflect current salaries paid by school divisions.

While regular salary adjustments would ensure salary and related compensation funding amounts are current at the start of each new biennium, compensation supplements would still be needed to increase funding for salaries above current levels. The

General Assembly should continue to enact compensation supplements aimed at increasing K–12 salaries. However, these compensation supplements would be more effective if they were based on a goal. For example, compensation supplements could be set to achieve the current statutory goal of paying teacher salaries that are “at or above the national average teacher salary.” The cost of this policy option would depend on the timeframe to achieve this goal and potential growth in other states’ teacher salaries.

After publication of this report, the General Assembly will have access to additional information to consider regarding teacher salaries. SB 1215 (2023) directs VDOE to convene a stakeholder workgroup to consider definitions for and calculations of competitive public elementary and secondary school teacher compensation. The workgroup is to submit a report no later than November 1, 2023.

POLICY OPTION 1

The General Assembly could develop and implement a funding plan to increase compensation supplements as needed to achieve the statutory goal of Virginia teacher salaries being at or above the national average.

Calculate cost assumptions using a division average instead of the linear weighted average (LWA)

The method the SOQ formula uses to determine prevailing cost assumptions, the linear weighted average (LWA), understates the salaries of the vast majority of school division staff. Salaries are a school division’s largest expense, and salary cost assumptions drive several other compensation-related cost calculations. The LWA, which is a *weighted* average of division average salaries, results in more than half of school divisions receiving funding that is well below what they actually need to pay their staff. The LWA understates salaries because, in practice, it underweights large school divisions that employ the most staff and have the highest labor costs.

The General Assembly should more accurately estimate division funding needs by basing salary calculations on the *unweighted* average of divisions’ average salaries instead of the LWA. A division average would weight all divisions equally instead of underweighting large divisions. This would increase the salary cost assumptions used in the SOQ formula and the funding provided. For consistency, the division average should also be used to calculate other cost assumptions, which is the approach modeled in this report. (Using the division average instead of the LWA for these other cost assumptions would not have a substantial effect on funding.) Alternatively, the state could adopt the average salary paid to all teachers statewide as its salary cost assumption, but this would arguably overweight large divisions where most staff are employed.

Policy Option 1

- ▲ Clear & justifiable?
Reflects prevailing practice?
- ▲ Accurate?
- ▲ Fair?
- ▲ Predictable?
- ▲ Transparent?

State cost: **Depends on approach used**

Using the simple, actual average of the average salary paid in each division instead of the linear weighted average would have increased state SOQ funding by about \$190 million in FY23 (+2.4 percent).

Recommendation 6

- ▲ Clear & justifiable?
- ▲ Reflects prevailing practice?
- ▲ Accurate?
- ▲ Fair?
- ▲ Predictable?
- ▲ Transparent?

State cost:
\$190M (est) +2.4%

RECOMMENDATION 6 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to calculate salary and other Standards of Quality formula cost assumptions using the division average, rather than the linear weighted average.

State and local share: recommendations & options

In contrast with the staffing ratios and cost assumptions used in the SOQ formula, the way that SOQ costs are apportioned between the state and localities is less problematic. The Local Composite Index (LCI), after 50 years, continues to have a clear and justifiable rationale, treats divisions fairly, and somewhat accurately estimates local ability to contribute funds. The state’s approach to apportioning state and local shares of SOQ funding therefore fully or partially meets the criteria used to assess the formula (Table 8-5). There are, though, several changes that could improve the predictability of local funding shares and transparency as to how those shares are calculated. There are also methods that can more accurately estimate local ability to pay. The LCI and alternatives for apportioning funding obligations are discussed in detail in Chapter 5.

TABLE 8-5
State and local share of SOQ costs compared to evaluation criteria

	Clear & justifiable rationale?	Reflects prevailing practice?	Accurate?	Fair?	Predictable?	Transparent?
Local composite index	●	N/A	◐	●	◐	◐

SOURCE: JLARC comparison of formula component to evaluation criteria.

Change Local Composite Index to use a three-year average

The LCI has changed significantly and unexpectedly for a few divisions when it was recalculated every two years, based on changes that occurred in the intervening time period. This has resulted in a sudden and unexpected loss of state funding. This happens because the LCI uses only the most recent year of data available for its five inputs (true value of real and public service corporation property, adjusted gross income, retail sales, student enrollment, general population). LCI volatility could be addressed by recalculating the LCI using the average of the last three years of data for each input, instead of every other year. Using a three-year average would reduce the effect of any major year-to-year changes and make any changes to divisions’ LCIs more gradual.

Using a three-year average rather than every other year would actually have reduced state SOQ funding very slightly, by about \$1.5 million in FY23 (-0.02 percent).

RECOMMENDATION 7 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to change the local composite index to be calculated using a three-year average of the most recently available data, rather than a single year of data every other year.

Modify how LCI calculations are scaled to reduce funding burden on rural and urban localities

When the current LCI was designed by the original SOQ task force (1972-1973), a policy decision was made to scale each locality to the state using both (a) student enrollment in the school division and (b) the general population of the locality. The task force decided to weight student enrollment more (two-thirds) and general population less (one-third). The reasons for using both measures, and for weighting student enrollment more, are unclear. However, the net effect is that the current weighting tends to be more favorable to suburban school divisions with large and faster growing student populations, and less favorable to urban and rural areas with declining or stagnant student populations (even if they have growing general populations).

The General Assembly could change the LCI so that student enrollment and general population calculations are equally weighted in the LCI calculation. In general, this would lower the LCI for rural and urban localities but increase the LCI for suburban localities.

Equally weighting enrollment and population in the LCI would have *reduced* state SOQ funding by about \$45 million in FY23 (-0.5 percent).







POLICY OPTION 2


The General Assembly could amend the Code of Virginia and include language in the Appropriation Act directing that a locality’s student enrollment and general population be equally weighted in the calculation of the local composite index for Standards of Quality funding, rather than weighting student enrollment two-thirds and the general population one-third.

Replace the LCI with a Revenue Capacity Index







Though it is a reasonable measure of ability to pay, the LCI is not the *most* accurate measure currently available for determining local ability to contribute funds. The LCI is 50 years old and was developed when far less data and analytical techniques were available. In the intervening decades, new and improved techniques for measuring ability to pay have been developed. It is generally agreed that the best measure of ability to pay currently available is revenue capacity. Revenue capacity more accurately


Recommendation 7

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?

State cost:  -0.02%
-\$1.5M (est)

Policy Option 2

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?






State cost:  -0.5%
-\$45M (est)


measures local ability to raise revenues by accounting for *all* major local tax bases. It also accounts for differences in local reliance on different tax bases due to differences in local economies, while not rewarding or punishing localities for differences in their tax rates or policies.

The General Assembly could replace the LCI with a Revenue Capacity Index (RCI) that more accurately captures local ability to pay. JLARC staff developed an RCI formula that could be adopted by the state (Appendix I). To avoid sudden changes that could be harmful to school divisions or local budgets, the RCI could be implemented gradually, by blending RCI with LCI in the first few biennia of implementation. Alternatively, the RCI could be implemented all at once and temporary hold-harmless funding could be provided to divisions that stand to lose substantial state funding under the new RCI.

Eliminating the local composite index and replacing it with a revenue capacity index would have *reduced* state SOQ funding by about \$85 million in FY23 (–1.1 percent).

Policy Option 3

-  Clear & justifiable?
Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?

State cost:  –1.1%
–\$85M (est)

POLICY OPTION 3

The General Assembly could amend the Code of Virginia and include language in the Appropriation Act directing the replacement of the local composite index with a revenue capacity index.

Cost drivers outside the control of school divisions: recommendations & options

The top three drivers of K–12 costs are the number of higher needs students in a school division, the cost of labor in the region, and division size. The SOQ formula does not adequately account for the additional costs school divisions incur from these three key factors. At-risk students are currently undercounted in calculating at-risk funding, most at-risk programs are not considered essential SOQ-required funding, and funds are not proportionately distributed among school divisions. The state’s cost of labor adjustment, the Cost of Competing Adjustment (COCA), is outdated, does not reflect actual labor cost differences, and is not fairly applied. The SOQ formula does not have any meaningful adjustment to account for division size. The cost driver adjustments therefore do not fully meet any of the criteria used to assess the SOQ formula (Table 8-6). SOQ cost driver issues are discussed in detail in Chapters 6 and 7.

TABLE 8-6
Formula recognition of division cost drivers compared to evaluation criteria

	Clear & justifiable rationale?	Reflects prevailing practice?	Accurate?	Fair?	Predictable?	Transparent?
SOQ formula accounting for higher needs students						
SOQ formula accounting for higher cost labor markets					N/A	
SOQ formula accounting for small divisions lacking economies of scale					N/A	

SOURCE: JLARC comparison of formula component to evaluation criteria.

Incorporate the At-Risk Add-On program into the SOQs

The vast majority of state funding is considered non-essential and is provided outside the SOQ, even though these programs’ instruction and support are critical for student achievement. The state should designate its largest at-risk funding program, the At-Risk Add-On, as an SOQ program, like the Prevention, Intervention, and Remediation (PIR) program. These are the state’s two largest at-risk programs and accounted for two-thirds of state at-risk funding in FY23. Making At-Risk Add-On funding SOQ-required would ensure divisions receive this essential funding. Currently, the At-Risk Add-On program is voluntary and school divisions do not receive it if their local government declines to provide matching funds. Historically, local governments have almost always provided matching funds, but in FY23 a high poverty rural division did not receive funds because the local government did not provide a match.

Moving the At-Risk Add-On program into the SOQs would be relatively cost neutral and could be done in the near term.

RECOMMENDATION 8 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to designate the At-Risk Add-On program as a Standards of Quality funding program, in recognition that the funding is essential for providing Virginia K–12 students with a quality education.

Replace inaccurate free lunch measure and consolidate main at-risk programs into new program with different funding calculation

To further improve funding for at-risk students, the state should change how eligibility for funding is determined in its two main at-risk funding programs by (1) updating the free lunch measure used in funding formulas and (2) consolidating the two programs

Recommendation 8

- Clear & justifiable?
- Reflects prevailing practice?
- Accurate?
- Fair?
- Predictable?
- Transparent?

State cost: 0%
\$0 (est)

and adopting a new funding calculation that better accounts for need. These changes should be implemented together.

Replace outdated and inaccurate free lunch measure used to determine at-risk student counts

Several K–12 funding programs for at-risk students—At-Risk Add-On, PIR, K-3 Class Size Reduction, and SOL Algebra Readiness—use free lunch eligibility data to determine how much funding school divisions receive. The current free lunch data used is up to seven years out of date and now substantially diverges from more accurate free lunch eligibility reported by VDOE’s school nutrition program. Funding programs should replace the current free lunch measure with the three-year average of the federal Identified Student Percentage (ISP), weighted by a factor of 1.2 to 1.6.

ISP is determined based on student participation in government benefits programs, such as Temporary Assistance for Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), Medicaid, etc. Starting in 2020, ISP is uniformly calculated for every school division and now provides the most consistent measure of school-level student poverty.

The ISP needs to be weighted to better approximate free lunch eligibility, because many students who qualify for free lunch are not eligible or enrolled in benefit programs. Federal researchers found a weight of 1.6 best approximates current free and reduced lunch eligibility rates, and this weight is used in its free lunch program calculations. JLARC analysis suggests weights from 1.2 to 1.6 would be reasonable.

Some school divisions—including those in rural and urban areas—were concerned that ISP undercounts free lunch eligible students in their division because of local under-enrollment in benefit programs relative to the rest of the state, but no research was found to support these claims.

Discontinuing the state’s reliance on the outdated and inaccurate estimates of free lunch eligibility to fund at-risk programs would have increased state funding by about \$250 million in FY23 (+3.2 percent). This increase occurs because the weighted ISP more accurately captures low income students than the formula’s current measure and results in more students being eligible for at-risk funding. (JLARC staff’s estimate assumes a 1.6 ISP weight.) This estimate includes the funding impact on the two largest at-risk programs: At-Risk Add-On and PIR. JLARC was unable to estimate the impact of the change on the K-3 Class Size Reduction program because of data limitations. The change would also impact the SOL Algebra Readiness program, but this is a small program, and the funding impact is expected to be less than \$6 million.

Consolidate two largest at-risk programs into new SOQ At-Risk Program and use formula based on ISP to determine school divisions’ program funding

The state should consolidate the At-Risk Add-On and PIR programs into a new, single SOQ At-Risk Program. As part of this consolidation, the current funding calculations

for the Add-On and PIR would be replaced with a new calculation for determining the amount of at-risk funds each division receives. The new calculation should provide divisions with a base amount of funding for their at-risk students while recognizing divisions with high concentrations of student poverty require more funding per student. Consistent with this report's findings and recommendations, the funding calculation should use student income, as measured by weighted ISP, to determine and distribute funding instead of test scores. This new calculation would include two components:

- flat per-student funding amount for each at-risk student at each school division (60 percent of the total at-risk funding amount), and
- variable per-student funding amount for each at risk student based on the concentration of poverty in each school division, with divisions that have more low-income students receiving more funding per student (40 percent of the total at-risk funding amount).







JLARC staff developed a funding calculator that could be used to determine funding for the new At-Risk Program. The funding amounts calculated under the new formula would gradually increase or decrease based on changes to at-risk student counts and the base amount of per student funding provided under Basic Aid. JLARC's funding calculations are described in detail in Appendix J.


Establishing a new, consolidated SOQ At-Risk program could be cost neutral, but JLARC staff modeled the cost of the new program assuming that weighted ISP was used to determine the number of students eligible for at-risk funding, as recommended in this chapter (Recommendation 9, \$250 million in state funding impact). Using the weighted ISP, almost all school divisions would receive more funding. However, five would receive slightly less funding than they currently receive from the At-Risk Add-On and PIR programs, and the state could provide these divisions with additional hold harmless funding (about \$1.1 million total). If the new consolidated program was implemented but weighted ISP was not used, then many high poverty divisions would lose large amounts of at-risk funding.

RECOMMENDATION 9 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to direct use of the federally approved Identified Student Percentage measure to calculate funding for all at-risk programs that currently rely on the outdated free lunch estimates.

**Recommendations
9 & 10**

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?

State cost:**\$250M (est)**  **+3.2%**

Note: does not include funding impact of using ISP in K-3 Class Size Reduction or SOL Algebra Readiness programs.

RECOMMENDATION 10 – NEAR TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to consolidate the At-Risk Add-On program and Prevention, Intervention, Remediation program and create a new At-Risk Program under the Standards of Quality. Funding for the new At-Risk Program would be allocated based on each school division's weighted Identified Student Percentage, and 60 percent of funding would be distributed to divisions using a flat per student rate and 40 percent would be distributed using a variable rate based on the concentration of poverty in each school division.

This report does not recommend any changes to the six other at-risk programs that are targeted at specific remedial services. The largest of these programs, K-3 Class Size Reduction, distributes funds in a reasonable way and was viewed positively by divisions. Other targeted programs provide additional funds for specialists and intervention services and could be kept in the near term. However, the programs that fund specialists could eventually be eliminated if the state adopts the staffing ratios proposed in this chapter, because the proposed ratios would include funding for all specialist positions.

Direct further study of special education staffing needs

The current special education staffing standards are a complex series of (a) teacher/aide-to-student ratios and (b) student weights that differ based on student disability and time in classroom. The special education ratios calculate fewer teachers and significantly fewer aides than are actually employed by school divisions and suggested by workgroups. However, new and more accurate staffing ratios cannot be recommended because of the limited data available on special education staffing in Virginia. For example, one of the special education ratios requires one teacher for every six to 24 students diagnosed with an autism disability, depending on if those students spend the majority of their day in a self-contained or general education classroom. There is not enough detailed data on special education staffing to determine if these ratios reflect actual practices or how they should be adjusted. Issues with special education staffing calculations are discussed in more detail in Appendix F.

If the state decides to keep the current resource-based formula for funding special education, the General Assembly would need to direct further study to develop ratios that better reflect current staffing. Alternatively, the state could adopt a student-based funding calculation for special education, which is discussed in Chapter 9. A student-based formula allocates the *funding* needed per student instead of the *staffing* needed per student.

RECOMMENDATION 11 – NEAR TERM

The General Assembly may wish to consider including language in the Appropriation Act requiring the Virginia Department of Education to work with school division staff and experts as needed to develop new special education staffing needs estimates based on a review of current ones and report its findings to the Board of Education, the House Committee on Education, and the Senate Committee on Education and Health.

Replace the Cost of Competing Adjustment (COCA) with an education labor cost index

The current COCA uses outdated percentages that no longer reflect regional cost differences, does not effectively distinguish between salaried and wage workers, and does not apply to several divisions that have above average labor costs. To better account for regional differences, the state should adopt a new labor cost adjustment based on a Virginia-specific education labor cost index. The index should be designed to consider compensation a school division needs to pay to compete for teachers and other staff in its regional labor market.

The Virginia education labor cost index should be developed using the data sources and methodology described in Appendix L. The index could be developed and updated biennially by VDOE or a public partner with economic expertise, such as the Weldon Cooper Center at the University of Virginia.







The cost of labor index could be used in one of two ways. The first option is to apply the new index to increase funding for all divisions that have above average costs. This is the approach used for the cost impact calculations presented in this report, and similar approaches have been adopted by other states such as Maryland and Wyoming. A second option is to apply the new index to all divisions, effectively reducing funding for divisions with lower labor costs. This is the method that most accurately adjusts costs and is preferred by economists but would lower the amount of funding the state provides to many less wealthy, rural school divisions.


More accurately and fully recognizing divisions’ local labor market costs would have increased state SOQ funding by about \$595 million in FY23 (+7.5 percent). The cost index used to model this change was based on the differences in labor costs in the national 2019 Comparable Wage Index for Teachers.

RECOMMENDATION 12 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to replace the current cost of competing adjustment with a more accurate adjustment based on a Virginia cost of labor index that better accounts for differing labor costs across school divisions in calculating compensation funding through the Standards of Quality formula.

Recommendation 12

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?

State cost:  **\$595M (est) +7.5%**

Implement an economies of scale adjustment for small divisions

Few divisions or localities have consolidated. There are currently several divisions that operate jointly, and several others divisions and localities that have fully consolidated. A 2014 JLARC report found substantial local resistance to consolidation efforts, even when it could result in better services and lower service cost per resident due to economies of scale. Consolidation is most likely to succeed when it involves a city and a county, rather than two counties.

The SOQ formula does not directly account for the higher per student funding needs of small school divisions. Small school divisions need more funding per student because they are unable to achieve economies of scale. Academic research indicates that divisions with under 2,000 students incur the highest cost per student, ranging from around 15 percent to over 50 percent higher than large divisions with 10,000 to 20,000 students. Divisions can choose to partner or consolidate with other divisions, but few small divisions have done this because of local resistance (sidebar). To better account for the additional costs of small divisions, the state could adopt an economies of scale adjustment.

The Virginia economies of scale adjustment should, at a minimum, increase funding for divisions with under 2,000 students. While this would affect 43 divisions, the additional funding needed would be relatively small because these divisions only account for about 4 percent of all students.

The economies of scale adjustment could be done in several ways, but JLARC staff recommend using a cost curve formula similar to the one described in Appendix M. Under this approach, every division with under 2,000 students would receive an additional percentage of funding per student, based on where the division falls on the curve. Using the curve from Appendix M, divisions would receive from about 15 percent more per student to over 50 percent more. The percentage could be capped at 50 percent to avoid potentially overfunding some divisions. A 50 percent cap would have affected four school divisions in FY23 (Bath, Craig, Highland, and Lexington).


Implementing an economies of scale adjustment for small divisions that have cost efficiency challenges would have increased state SOQ funding by about \$80 million in FY23 (+1.0 percent).

RECOMMENDATION 13 – LONG TERM

The General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act directing that the Standards of Quality formula include an economies of scale adjustment to provide additional funding to divisions with fewer than 2,000 students.

Recommendation 13

- ▲ Clear & justifiable?
- ▲ Reflects prevailing practice?
- ▲ Accurate?
- ▲ Fair?
- ▲ Predictable?
- ▲ Transparent?

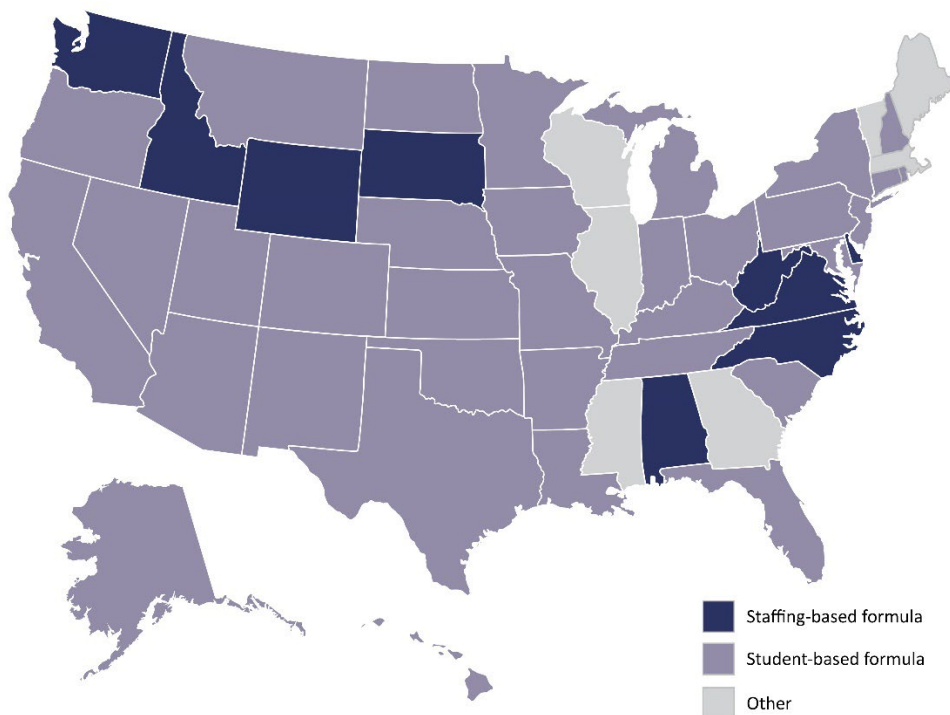
State cost:
\$80M (est)  **+1.0%**

9 New Student-Based SOQ Formula

Nationally, states use one of two main types of funding formulas for K–12 education: staffing-based formulas and student-based formulas. Virginia’s SOQ formula is a staffing-based formula. Virginia’s SOQ formula determines funding needs by first calculating staffing needs and then calculating the cost of those staff.

Virginia is one of only nine states that use a staffing-based formula, and some academic experts now view it as an outdated approach. The vast majority of states (34) use a student-based funding formula that allocates divisions a specified amount of funding per student (Figure 9-1). Seven states use hybrids of the staffing- and student-based approaches or another approach. This chapter focuses on the student-based approach and how it could be implemented in Virginia.

FIGURE 9-1
Majority of states use a student-based education funding model instead of a staffing-based funding model

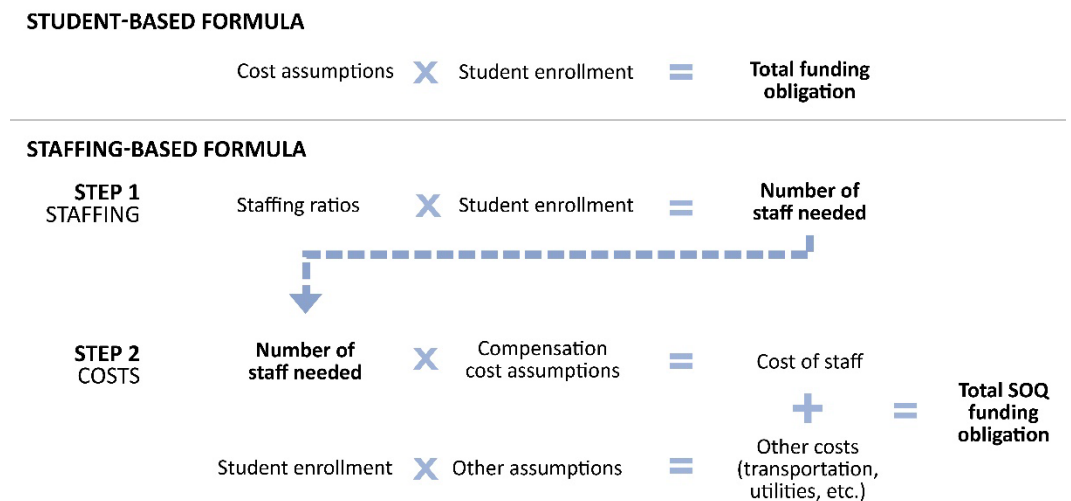


SOURCE: Education Commission of the States and Tennessee Investment in Student Achievement (TISA) Formula.
NOTE: Other funding models include either (a) hybrid models that combine aspects of student- and staffing-based models and (b) guaranteed tax base/tax-levy equalization, wherein the state provides higher levels of funding to lower property-wealthy districts, based on property taxes paid within the district.

Student-based funding formulas are simple and designate funding for specific purposes

Student- and staffing-based formulas use different approaches to determine how much funding each school division needs. Under a student-based formula, funding calculations are based directly on costs. A student-based formula uses per-student cost assumptions and student enrollment to calculate the total funding obligation (Figure 9-2). These per student cost assumptions include all staffing and non-staffing costs associated with providing instruction and support, so no additional calculations are needed. In contrast, staffing-based formula calculations (as evidenced in prior chapters describing Virginia’s staffing-based formula) are much more complicated. First, several calculations determine how many staff are needed. Second, additional calculations determine the cost of compensating those staff. Then non-staffing costs must be added to determine the total funding obligation.

FIGURE 9-2
Student-based formulas are simpler than staffing-based formulas



SOURCE: JLARC staff analysis.

A typical student-based formula provides a base amount per student and then additional funding for specific programs. Student-based formulas commonly have separate funding calculations for programs for higher needs students (e.g., at-risk, special education, and English learner students). Some student-based formulas also designate additional per student funding for other programs, such as career and technical education (CTE) and gifted education. Each calculation generates the entire estimated per student cost of instruction and support for a particular program.

In the student-based formula calculations, the two variables that determine funding for each program are the per student cost assumptions and the student counts. *Cost*

assumptions can be based on actual expenditures per student under each program or on a funding benchmark. *Student counts* are the number of students who receive instruction and support under each program. An example of how student-based funding calculations work for a hypothetical school division is shown below (Table 9-1).

TABLE 9-1
Example: student-based formula calculation for a school division

Base foundation amount					
\$8,000	per student	x	5,000	total students	= \$40,000,000
At-risk					
\$2,000	per student	x	2,500	at-risk students	= \$ 5,000,000
Special education					
\$12,000	per student	x	750	special education students	= \$ 9,000,000
English learners					
\$2,000	per student	x	500	English learner students	= \$ 1,000,000
Career and technical education (CTE)					
\$500	per student	x	5,000	total students ^a	= \$ 2,500,000
Gifted education					
\$150	per student	x	5,000	total students ^a	= \$ 750,000
Transportation					
Not calculated per student					\$ 4,500,000
Total division funding obligation					\$62,750,000

SOURCE: JLARC staff analysis.

NOTE: Funding calculations are for a hypothetical mid-size school division with about average populations of higher needs students. The per-student amounts used in each calculation are roughly equivalent to the average actual per student expenditures that were calculated for Virginia school divisions in JLARC's student-based formula model.

^a Total student count is used for CTE and Gifted education calculations because these student groups are not as clearly and consistently defined across divisions as other student groups. For example, a gifted student could be any student who takes a single advanced placement class or a student who spends a majority of the day at a school for gifted students.

Student-based funding formulas have several advantages over staffing-based formulas

Student-based funding formulas offer several potential advantages over staffing-based models. Foremost, student-based formulas can more accurately estimate school division costs and provide the funding that divisions need, including funding for higher needs students. Student-based formulas are also much easier to understand, which greatly improves transparency for legislators and other stakeholders, reduces the risk of calculation errors, and makes it easier to make needed changes to the formulas over time.

Well-designed student-based formulas are more accurate than staffing-based formulas, which Virginia uses

Virginia collects detailed school division expenditure data, including instructional and support spending at the elementary and middle-high school levels. Expenditures for some major instructional programs are also reported, including special education, career and technical education, and gifted education. However, the state does not collect data on expenditures for at-risk students or English learner programs.

Well-designed student-based formulas more accurately assess funding needs than staffing-based formulas because they are directly tied to costs. For example, a typical elementary school student may receive instruction and support from a general classroom teacher; a classroom aide; art, music, and physical education teachers; the school nurse; the school librarian; school counselors; assistant principals; the principal; or others. A staffing-based funding model must estimate the number of staff needed for each division to serve its elementary students and the assumed cost of each staff member. In contrast, a student-based formula can simply calculate funding needs based on the actual reported overall cost of elementary instruction and support. In Virginia, determining current costs is generally much easier than estimating staffing needs because expenditures data is readily available for each division (with some exceptions, sidebar).

Student-based formulas can also more clearly designate funding for specific programs. For example, student-based formulas commonly have separate funding calculations for at-risk students, special education, and English learners. They calculate the *entire* cost of additional instruction and support required for these students, providing a more comprehensive accounting of funds needed for these programs. In contrast, Virginia's SOQ formula only partially accomplishes this; it has separate accounts for at-risk students, special education, and English learners, but these accounts do not include all SOQ funding associated with those programs. The one at-risk SOQ account (prevention, intervention, and remediation) is only 18 percent of state funding for at-risk students. The special education account includes only funding for teacher and aide salaries and no other staffing or non-staffing costs. The English learner account includes the full cost of teacher salaries and benefits but does not include other costs associated with English language instruction and support.

Student-based formulas that rely on actual costs are also more likely to stay current than staffing-based formulas that rely on fixed ratios and myriad cost assumptions and adjustments. The funding for student-based formulas can be adjusted easily over time to reflect actual costs, while fixed staffing ratios and other formula assumptions that

are part of a staffing-based formula must be changed by the General Assembly or Board of Education.

Student-based formulas are more transparent and easier to adapt than staffing-based formulas

Student-based formulas can be designed to be simple and transparent, which makes it easier for legislators to determine the impact of any proposed changes. Student-based formula cost assumptions can be set based on actual average division costs, and calculations are relatively simple and straightforward (see Table 9-1, page 105). Any proposed changes to education funding are also simple and straightforward to understand and implement. For example, if legislators want to generally provide additional funding for K–12 education, they can simply increase the base foundation amount provided per student. If they want to direct funding to a specific program, such as career and technical education, they can simply increase the per student amount for that program. If there is an economic downturn and funding needs to be reduced, legislators can simply lower the per student amounts. The financial impact of proposed changes on the state budget and school divisions can be quickly and easily determined. In contrast, under Virginia’s current formula, if legislators want to increase or decrease SOQ funding, they must first propose a change to SOQ staffing ratios, and the Virginia Department of Education (VDOE) has to model the change in its SOQ funding application. Depending on the proposed change, VDOE may or may not be able to fully model the funding impact.

The simplicity and transparency of student-based formulas make it easier for policymakers to identify potential funding problems and make formula changes to address them. For example, if there are concerns about special education funding, student-based formulas make it easy to determine current funding per student. Funding changes are also easy to implement (assuming revenues are available). In contrast, under the current SOQ formula, it is difficult to determine the current level of special education funding, because funding is spread across several accounts. For example, the state SOQ special education account includes *only* funding for teacher and aide salaries. It does not include funding for associated benefits or other special education costs, which are captured in other SOQ accounts. Increasing state funding for special education is also difficult because it requires changing a complex set of caseload ratios and student weights (Appendix F).

Student-based formulas can also be designed to automatically update funding over time based on changes in costs and student populations. This approach reduces the need for legislative action or other changes to keep the formula current and accurate.

The simpler design of a student-based formula also reduces the risk of errors in data collection and funding calculations and could reduce the cost and bureaucracy associated with maintaining a complicated funding application. A student-based formula requires far fewer calculations than a staffing-based formula, because a student-based

formula does not require interim steps to determine staffing needs and costs or calculate employee benefits and payroll taxes and non-staffing costs. Instead, a student-based formula directly calculates the costs of providing instruction and support to each student, inclusive of all costs. Because student-based funding calculations are simpler than those under the current SOQ model, a student-based model would be easier to maintain, check for errors, and for third-parties to audit.

Concerns about student-based formulas are unfounded or easily addressed

One concern with student-based formulas is that they do not account for all the nuances that can be captured in a staffing-based formula. For example, it would be more difficult for a student-based formula to capture a change in Virginia Retirement System (VRS) rates in a new budget year. While Virginia’s current, complex SOQ formula attempts to capture these changes, it does not accurately estimate school divisions’ costs. As discussed in Chapter 4, the formula’s calculations of VRS costs and most other benefits are inaccurate because they are determined using outdated salary assumptions and are applied to only SOQ-recognized staff.

Another concern with student-based formulas is that they could give school divisions too much flexibility over hiring certain positions, and divisions may choose to understaff in certain areas. For example, if divisions are not required to have a certain number of school counselors per students, they may choose to have fewer counselors than needed. However, this concern could easily be addressed by maintaining separate minimum staffing standards for compliance purposes.

Options for implementing full or partial student-based formula

JLARC staff identified two policy options for replacing all or part of Virginia’s current staffing-based formula with a student-based formula. Other states have transitioned from staffing- to student-based models in the past, and Tennessee is in the process of switching. Virginia’s SOQ formula already has some characteristics of a student-based formula (e.g., when it calculates “non-personal” costs, like transportation and utilities) so the concept is not entirely new in the state. Additional technical details on the policy options to implement student-based formulas are described in more detail in Appendix N.

Option to fully replace staffing-based SOQ formula with new student-based formula

The General Assembly could replace the current SOQ formula with a student-based formula that is based on actual school division expenditures. Like other states, Virginia’s new formula would need to include a base amount of funding per student that






is updated every year, plus separate funding accounts for major instructional programs. These would replace the current SOQ accounts (Table 9-3).

Under this student-based formula option, the base student amount and add-on funding could initially be set based on current funding levels to avoid any substantial or sudden changes in funding. Over time, the base amount and add-on funding could be gradually increased or decreased as needed so that the formula reflects actual spending in each area. Funding could also be increased further to achieve certain funding benchmarks, if the state determines funding increases are needed. The state could continue to use the current LCI to allocate state and local funding obligations, or adopt a new RCI as discussed in Chapter 5.

POLICY OPTION 4

The General Assembly could amend the Code of Virginia to replace the entire staffing-based SOQ formula with a new student-based formula that is based on actual average school division expenditures.

Policy Option 4

-  Clear & justifiable?
-  Reflects prevailing practice?
-  Accurate?
-  Fair?
-  Predictable?
-  Transparent?


State cost:
\$1,165M (est) 

TABLE 9-3

Current and potential new accounts under a student-based formula

Current SOQ account	New SOQ account (under student-based formula)
Basic Aid	
Sales Tax	
VRS Retirement	Base Foundation
Social Security	
Group Life	
Textbooks	
Prevention, Intervention, Remediation	At-Risk Program
Special Education	Special Education
English as a Second Language	English Language Learner Program
Vocational Education	Career and Technical Education
Gifted Education	Gifted Education
Remedial Summer School	Remedial Summer School
	Transportation

SOURCE: 2022 appropriation act for FY23-FY24 (Chapter 2).

Implementing a new, student-based funding formula could have increased state SOQ funding by approximately \$1.17 billion in FY23 (+15.2 percent). The formula funding amount was determined using actual school division expenditures and student enrollment data that was available to VDOE during the FY23–FY24 re-benchmarking period.

(Every two years, VDOE updates the SOQ funding formula with new data during re-benchmarking and recalculates SOQ funding obligations.) The policy option assumes other recommendations made in this report are also implemented, such as consolidating at-risk programs under SOQ and adopting a three-year average local composite index. Funding amounts, by program, are detailed below (Table 9-4).

TABLE 9-4
JLARC student-based formula state funding amounts

	Student-based formula	FY23 budget actual (2022 Appropriation Act)	Change
Student base	\$5,900M	\$6,130M (includes SOQ accounts for Basic Aid less transportation, Textbooks, VRS Retirement, Social Security, and Group Life; includes non-SOQ funding from the Compensation Supplement) ^a	-\$230M (Funding goes down in this account because some of the staffing costs captured under other accounts, such as health insurance under Basic Aid and retirement benefits under VRS Retirement, are shifted to program accounts, such as special education)
At-Risk programs	\$750M	\$460M (includes SOQ account for Prevention, Intervention, Remediation; includes non-SOQ At-Risk Add-On program)	+\$290M (At least ~\$50 million of increase is from benefits and payroll costs being shifted here from other accounts)
Special education	\$1,150M	\$430M	+\$720M (At least ~\$160 million of increase is from benefits and payroll costs being shifted here from other accounts)
English learner programs	\$150M	\$100M	+\$50M
Career & technical education	\$350M	\$70M	+\$280M (Significant portion of increase is from benefits and payroll costs being shifted here from other accounts)
Gifted education	\$110M	\$40M	+\$70M (Significant portion of increase is from benefits and payroll costs being shifted here from other accounts)
Remedial summer school	\$8M	\$23M	-\$15M
Transportation	\$420M	\$420M (from SOQ Basic Aid account)	\$0
Total	\$8,840M	\$7,675M	+\$1,165M

SOURCE: JLARC student-based funding model calculations compared to 2022 Appropriation Act.

Option to partially replace SOQ formula: special education and English learner program calculations

An alternative, incremental option would be for the General Assembly to keep the current staffing-based formula for most funding but convert special education and English learner funding to student-based calculations. Using student-based calculations for special education and English learners would be similar to what the report already recommends for at-risk students. Under this “hybrid” approach policy option, most SOQ funding would still be staffing-based, but funding for higher needs students would be student-based.

Replacing the current special education calculation with a student-based calculation may allow the state to more quickly address concerns with special education funding, because there would be no need to further study needed changes to staffing ratios and staffing calculations. Actual special education spending levels are already known, and the funding calculation could be immediately set to reflect actual funding.

Replacing the English learner calculation with a student-based calculation may allow the state to account for the additional instructional and support staff needs of school divisions with high concentrations of English learners. However, to most accurately estimate funding needs for English learners, the state would need to begin collecting data on English learner expenditures in its annual financial reports from school divisions.

POLICY OPTION 5

The General Assembly could amend the Code of Virginia to replace the current SOQ formula calculations for special education and English as a Second Language, including any associated calculations for benefits and payroll taxes under other SOQ accounts, with student-based funding calculations that are based on actual average school division expenditures.

Implementing new, student-based funding calculations for special education and English learner programs would have increased state SOQ funding by an estimated \$520 million in FY23 (+6.8 percent). The formula funding amount was determined using actual division expenditures for special education and assumed expenditures for English learners. Under the change, the current staffing-based special education and English learner calculations would be eliminated, including the salary calculations performed for the current Special Education and English as a Second Language SOQ accounts and the benefits and payroll calculations associated with special education positions in the Basic Aid (for health insurance), VRS Retirement, Social Security, and Group Life SOQ accounts. Funding amounts, by program, are detailed below (Table 9-5).

Policy Option 5

- ▲ Clear & justifiable?
- ▲ Reflects prevailing practice?
- ▲ Accurate?
- ▲ Fair?
- ▲ Predictable?
- ▲ Transparent?


State cost:
\$520M (est)  **+6.8%**

TABLE 9-5
JLARC student-based special education and English learner funding amounts

	State share of SOQ obligations only		
	New student-based calculation amount	Current program amount	Estimated net change
Special education	\$1,070M	\$590M (\$430M special education SOQ account, at least \$160M in related funding under other SOQ accounts) ^a	+ \$480M
English learners	\$140M	\$100M	+ \$35M
Total	\$1,210M	\$690M	+ \$520M

SOURCE: JLARC student-based funding calculations.

^a The current SOQ accounts for Special education only captures the cost of salaries for special education teachers and aides but does not capture any other costs. JLARC staff were able to calculate the benefits and payroll costs associated with special education employee salaries, including health care insurance (under Basic Aid), VRS Retirement, Social Security, and Group Life insurance. These additional costs are included here to provide the most accurate comparison possible.

10 Improving SOQ Formula Use and Management

JLARC's review of the Standards of Quality (SOQ) formula identified ways to improve how the formula is used to determine funding, and how it is managed by the Virginia Department of Education (VDOE). Changes in these areas could make it easier for Virginia to develop and maintain a funding formula that (1) has a clear and justifiable rationale, (2) reflects prevailing practice, (3) is accurate, (4) is fair, (5) is predictable, and (6) is transparent. The recommended changes would have limited or no funding impact compared to the other recommendations presented in this report.

State should use formula to estimate funding needs but not frequently change it based on revenue

Virginia uses the SOQ formula to determine most of the K–12 funding that is provided by the state and the minimum contributions required by local governments. K–12 funding is 30 percent of the general fund budget and 13 percent of the total state budget, which makes the SOQ formula a key factor in the appropriations process. The General Assembly has played an active role in establishing SOQ formula staffing standards, cost assumptions, and calculation methods in legislation, which directly determine appropriation amounts. As discussed throughout this report, there are problems with each of these formula elements, and many of the formula's staffing and cost calculations do not reflect prevailing practice.

SOQ formula calculations do not fully reflect prevailing practice because they are subject to revision largely based on budget priorities and constraints

The SOQ formula's staffing and funding calculations do not reflect prevailing practice largely because the formula has been altered on a piece-meal basis by prior governors and General Assemblies based on available revenue for the state budget in a given year. For example:

- Following the Great Recession, the SOQ formula was changed to reduce the number of funded staff and other costs recognized in the formula, even though many of these staff and costs continued in actual practice.
- Staffing standards for specific position groups, such as counselors and English learner teachers, are occasionally increased to provide more staff. However, the changes ultimately enacted are constrained by funding limitations and often do not reflect actual practices at school divisions or benchmarks for what is needed. The same is true when a new position, such as K–3 reading specialist, is created.

Conversely, changes that are necessary to adapt the SOQ formula and keep it aligned with prevailing practice are often not made. For example, salaries are not automatically adjusted; instead, the legislature determines whether to include salary adjustments—and the size of these salary increases—each year in the budget process. Similarly, a few commonly employed position categories, such as general instructional aides for older elementary grades, are not recognized in the formula because no legislation has been enacted to do so. Some of these needed changes are not acted upon because the General Assembly is not made aware of them. Other needed changes may be known but are not implemented because of their funding implications.

SOQ formula should ideally provide an accurate picture of funding needs to guide, but not determine, state budget decisions

The SOQ formula should be adjusted and maintained over time to reflect prevailing practice, and changes should have a clear and justifiable rationale. The formula should not be altered solely to make the calculated funding amounts meet state budget constraints in a given year. Instead, the General Assembly and governor should be consistent in using the SOQ formula as an indicator of need and then separately determine how much funding can be provided in a given year. Under this approach, the SOQ formula would use the staffing ratios, cost assumptions, and calculation methods that produce the most accurate estimate of funding needs, based on actual prevailing practices in school divisions. The General Assembly would then determine how much funding is appropriated for the SOQs, using the formula estimate as a *guide* for what is needed, without making changes to the formula. This approach would be similar to the approach that has historically been used to approve funding for the Virginia Retirement System (sidebar).

Separating the General Assembly's appropriation decisions from SOQ formula calculations and maintenance would allow the legislature to make more informed decisions about education funding. The formula would give the General Assembly a reasonably accurate estimate of funding needs. The legislature could then determine what proportion of that need they wish to fund based on available revenue, which is consistent with the legislature's authority in the Virginia Constitution to "seek to ensure" a quality education. This separation would help to ensure that the SOQ formula remains a reliable method to estimate need, while giving the General Assembly the flexibility it needs as state revenues fluctuate.

Separating the General Assembly's appropriation decisions from SOQ formula inputs, assumptions, and calculations appears consistent with the Virginia Constitution. The constitution gives the General Assembly broad authority to "determine the manner in which funds are to be provided for the cost of maintaining an educational program meeting the prescribed standards of quality." The constitution does not require the General Assembly to set funding using a formula.

State funding for the Virginia Retirement System (VRS) is determined in two parts. First, the VRS actuary calculates the contribution rates it believes are needed to adequately fund retirement benefits. The rates are then approved by the VRS board. Second, the General Assembly determines what percentage of the rates it will provide funding for. As of FY19, the General Assembly has required the VRS rates to be funded at 100 percent.

RECOMMENDATION 14

The General Assembly may wish to consider amending the Code of Virginia to state that it shall consider the funding amounts calculated by the Standards of Quality (SOQ) formula when determining the amount of funding needed to maintain an educational program meeting the prescribed SOQs, but shall not be obligated to appropriate the amounts calculated by the formula.

If SOQ formula is used only to guide General Assembly budget decisions, authority over staffing ratios should be returned to BOE

The General Assembly currently sets fixed staffing ratios in the Code of Virginia and the Appropriation Act because it is responsible for state budget appropriation decisions, and the ratios directly affect appropriations. If the General Assembly decides that the SOQ formula should be used only as a guide for funding appropriations, then it would no longer need to set staffing ratios, and the staffing ratios could be removed from law. Responsibility for setting staffing ratios could be returned to the Board of Education (BOE), which has constitutional responsibility for SOQs and carries out similar responsibilities for setting Standards of Learning and Standards of Accreditation. The BOE-approved staffing ratios could continue to be used in the SOQ formula to estimate needed funding. The staffing ratios could also continue to be used for compliance purposes, or separate staffing standards could be established for compliance.

To ensure the staffing ratios used in the formula continue to reflect actual practice, they should be regularly reviewed and updated when needed. VDOE could biennially provide BOE with data on how the formula ratios compare to actual staffing ratios in Virginia school divisions. The BOE could make needed adjustments to the staffing ratios and report them annually to the General Assembly.

RECOMMENDATION 15

If the Code of Virginia is amended to establish that the funding amounts calculated by the Standards of Quality formula serve only as a guide for needed funding, the General Assembly may wish to consider amending the Code of Virginia and including language in the Appropriation Act to eliminate current SOQ staffing standards and direct the Board of Education to establish all staffing ratios used in the SOQ formula.

RECOMMENDATION 16

The General Assembly may wish to consider amending the Code of Virginia to direct the Virginia Department of Education (VDOE) to biennially calculate, compare, and report on differences between the fixed staffing ratios in the SOQ formula and actual ratios in Virginia school divisions, so that fixed ratios can be regularly adjusted as needed. VDOE should report its findings to the Board of Education.

VDOE IT application and staffing are inadequate for managing the SOQ formula

VDOE is responsible for managing the SOQ funding formula. The formula needs to be well managed because it determines how billions of dollars in state and local funding is allocated. Formula errors or miscommunications can create multimillion dollar budget problems at the state and local levels, such as the miscommunication in 2022 that resulted in local governments believing they were getting \$200 million more from the state than was actually budgeted at the time. Managing the formula is a difficult task because it is extremely complicated and undergoes constant change from legislation, data updates, and biennial re-benchmarking of cost assumptions. To effectively manage the formula and coordinate with school divisions, VDOE needs modern IT systems and sufficient budget and finance staff.

IT application used for calculating SOQ funding is outdated, opaque, and cumbersome and needs to be modernized

VDOE currently manages the SOQ formula calculations using a cumbersome combination of an IT application (SOQ funding model application) and a series of spreadsheets. Most of the SOQ formula calculations for staffing needs and total funding obligations occur in the SOQ funding model application. Spreadsheets are used to apply the LCI and integrate funding calculations for non-SOQ programs. Additional spreadsheets are then used to communicate expected funding amounts and minimum local obligations to school divisions and local governments.

The SOQ funding model application is old and its internal calculations are opaque, making it difficult to identify potential problems with staffing and funding calculations. Stakeholders often referred to the application as a “black box,” because it is unclear how calculations are being performed. JLARC staff worked with VDOE staff over a year to understand how calculations were made in the application, including numerous reviews of document and data files, interviews with VDOE staff, and email exchanges. Some of this information was often conflicting, suggesting that some aspects of calculations were not always clear to VDOE staff. JLARC staff were eventually able to replicate most calculations, but some aspects of what occurs inside the application still remain opaque despite these extensive, long-term efforts.

While JLARC staff did not identify any major calculation errors, the lack of visibility into the application creates the risk of undetected errors. For example, JLARC staff identified minor technical issues with calculations, such as a few small groups of central office staff not being included in calculations. Manual errors in the data fed into the IT application or problems in spreadsheet calculations that occur outside the application could also affect final SOQ funding amounts. There is also a risk that turnover in VDOE staff would leave few individuals with full knowledge of all the steps that must be performed to calculate SOQ funding obligations.

The cumbersome set-up of the SOQ funding application makes it difficult to model and implement changes. VDOE staff indicated that it was easy to implement some changes to the formula, such as changing existing staffing ratios, but other changes would require re-coding of the application. For example, VDOE staff indicated they would need IT programming support to add or remove positions from the SOQ model or to add in costs that had been excluded, among other changes. If VDOE had access to a more modern and less cumbersome system, it would likely be able to provide better and timelier information to legislators, money committee and the Department of Planning and Budget staff, and the governor during the budgeting process and legislative session.

RECOMMENDATION 17

The General Assembly may wish to consider including funding in the Appropriation Act for the Virginia Department of Education to begin procuring a modern and more usable Standards of Quality funding information technology application.

VDOE financial reporting system needs to be modernized to simplify reporting process and address data reliability concerns that may affect school division funding

Several division finance directors raised concerns that VDOE's annual financial reporting requirements had recently become too complicated, creating the risk that information submitted by divisions was inconsistent or incorrect. Data reliability is a serious concern because this data is used in the SOQ formula calculations and misreported data directly affects the funding school divisions receive.

Several directors said that the requirement to start reporting financial data using text files, implemented in FY20, created data integrity concerns. A few said that the data they report could be unreliable because they have to convert their own expenditure codes to the state-required Chart of Accounts codes. This is partially outside VDOE's control. The text file requirement was implemented to help comply with new federal reporting requirements, and the Chart of Accounts cannot be changed to match every school division. However, relying on text file transfers is not a modern or efficient way to report this critical data.

The General Assembly should consider directing VDOE to study the feasibility of implementing a secure, web-based reporting system for school division annual financial reports. Currently, report data is submitted through a secure portal using a mix of text files and Excel spreadsheets. This is not a user-friendly approach and could result in data errors that affect division funding. A modern and user-friendly application could better automate the submission process and potentially provide clearer instructions for users. For example, a new system could allow for less sophisticated users to enter data in forms with clear directions and error checks. The same system could allow more sophisticated users to electronically transmit data to VDOE without the need to recode it first. Ideally, the data collected under this new system could be fed

directly into a new SOQ funding IT application, reducing risk of transmission and manual errors.

RECOMMENDATION 18

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Department of Education to work with school division finance directors to study the feasibility of implementing a secure, web-based reporting system for annual school reports.

VDOE may need additional staff positions to help implement projects or manage contracts to modernize budget and finance IT applications and processes. Some or all of these positions could be located in VDOE's Department of Budget and Finance or in other agency departments. The types and exact number of these positions needed will depend on how VDOE approaches the replacement of these systems.

RECOMMENDATION 19

The Virginia Department of Education should submit to the Department of Planning and Budget a decision package for modernizing its Standards of Quality funding information technology application and school division financial reporting system to be considered for the governor's introduced budget. The decision package should explain and itemize the cost of any consultants, procurements and additional full-time or contracted staff that are expected to be needed to modernize these systems.

School divisions need additional technical support from VDOE for financial reporting and budgeting

Most SOQ formula staffing calculations use the *fixed* staffing ratios set in the Code of Virginia and the Appropriation Act. However, for positions where there is no fixed ratio, the formula calculates a *prevailing* staffing ratio based entirely on annual financial report data from school divisions.

Virginia's K–12 annual financial reporting and budgeting processes are interwoven with SOQ formula calculations. School divisions annually report data to VDOE on their expenditures and staffing levels. VDOE uses this data to update the SOQ formula's cost assumptions and some of its staffing calculations (sidebar). To ensure SOQ funding is properly calculated, divisions need to clearly understand their reporting requirements and report accurate data. School divisions need to understand what SOQ funding amounts they can expect to receive for budgeting purposes.

School divisions need additional information and clarification to accurately report the financial data used in SOQ funding calculations

VDOE provides school divisions with guidance and assistance for financial reporting. As of 2022, VDOE provides a web-based portal for school divisions to use when submitting their annual school reports. The portal includes a reporting template, instructions, the Chart of Accounts (with financial reporting codes), and other resources. VDOE staff also field questions from school divisions when contacted.

Despite VDOE's efforts, many school division finance directors said they were unsure how to properly report certain financial and staffing data. Some finance directors said

that VDOE instructions were unclear or did not address how specific items should be reported. For expenditures, some directors said the Chart of Accounts was not sufficiently detailed and left too much reporting open to interpretation. When asked about variability in their school division's reported expenditures from year to year, one administrator stated that the variability was at least partially due to different staff members reporting similar expenditures in different ways. For staffing, divisions interviewed by JLARC staff described different ways of reporting the same positions. In some cases, the different approaches result in some divisions' positions being excluded from VDOE's count of prevailing staff. Finance directors also offered mixed perspectives on responsiveness and support provided by VDOE staff. A few found VDOE staff very helpful, while others said staff never responded to their questions.

Several finance directors suggested that they would benefit from better VDOE outreach and training. One administrator noted that there is no state training for new finance directors, such as initial training on how to properly complete annual financial reports or interpret SOQ budget documents. Another noted that there was no state training or briefings offered to assist directors with major changes, such as changes in how annual school report data is submitted. Directors noted they often rely on each other and the Virginia Association of School Business Officials (VASBO) to answer questions and provide training and information on VDOE processes. VASBO holds conferences with division finance directors and other members throughout the year, but VDOE staff may not always be present at these conferences.

New VDOE coordinator position would provide finance directors with support on financial reporting and budgeting

The General Assembly should consider providing VDOE with funding for an additional position in the Office of Budget. The new position would be responsible for coordinating with finance directors across the state, including developing and maintaining resources, providing training and support to finance directors, and leading outreach efforts. VDOE employs similar positions to coordinate with school divisions in other areas. For example, VDOE has a coordinator for English learner instruction and specialists who work with school nurses and counselors.

The new VDOE coordinator could develop materials and conduct outreach on SOQ funding, including updating the Direct Aid Payment Calculation Templates that school divisions rely on for budgeting purposes. A failure to update the template in fall 2022 resulted in school divisions thinking they were getting \$200 million more from the state than was actually budgeted at the time. Other materials that could be useful would be a current manual or handbook for finance directors describing the SOQ formula and improved guidance for how to complete annual financial reports.

RECOMMENDATION 20

The General Assembly may wish to consider including funding in the Appropriation Act for the Virginia Department of Education to create a position in the Office of Budget responsible for providing technical information and support to school division finance directors regarding (i) the annual financial reporting process and requirements and (ii) data critical for school division budgeting purposes, such as expected and actual amounts of state SOQ and non-SOQ funding.

Appendix A: Study resolution

SENATE JOINT RESOLUTION NO. 294 (2021)

Directing the Joint Legislative Audit and Review Commission to study the true cost of education in the Commonwealth and provide an accurate assessment of the costs to implement the Standards of Quality

WHEREAS, under Article VIII, Section 1 of the Constitution of Virginia, ultimate responsibility for public education rests with the General Assembly, which is specifically charged with the duties of establishing a public school system and striving to ensure its quality; and

WHEREAS, the Standards of Quality, prescribed by the Board of Education and revised only by the General Assembly, establish minimum educational goals and requirements; and

WHEREAS, the cost of such Standards of Quality and how that cost is shared between the state and the localities is determined by the General Assembly; and

WHEREAS, the Standards of Quality funding formula has undergone several changes in the past decade and may no longer reflect the actual costs schools face in educating Virginia's children; and

WHEREAS, many school divisions in the Commonwealth exceed the minimum educational goals and requirements of the Standards of Quality; and

WHEREAS, the General Assembly must take into account the actual cost of education in the Commonwealth in order to ensure a high-quality education program and a fair balance of costs between the state and the localities; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Joint Legislative Audit and Review Commission be directed to study the true cost of education in the Commonwealth and provide an accurate assessment of the costs to implement the Standards of Quality.

In conducting its study, the Joint Legislative Audit and Review Commission shall (i) estimate the cost of implementing the Standards of Quality based on the actual expense of education prevailing in the Commonwealth, (ii) determine if the Standards of Quality accurately reflect actual standards of practice within each school division, (iii) analyze changes in the Standards of Quality funding formula since 2009 and the impact of such changes on its accuracy in reflecting such costs, (iv) recommend changes to the Standards of Quality funding formula to ensure that state support is neither inadequate nor excessive, and (v) consider any other funding issues and make any other recommendations it deems relevant.

Technical assistance shall be provided to the Joint Legislative Audit and Review Commission by the Department of Education. All agencies of the Commonwealth shall provide assistance to the Joint Legislative Audit and Review Commission for this study, upon request.

The Joint Legislative Audit and Review Commission shall complete its meetings for the first year by November 30, 2022, and for the second year by November 30, 2023, and the Director shall submit to

the Division of Legislative Automated Systems an executive summary of its findings and recommendations no later than the first day of the next Regular Session of the General Assembly for each year. Each executive summary shall state whether the Joint Legislative Audit and Review Commission intends to submit to the General Assembly and the Governor a report of its findings and recommendations for publication as a House or Senate document. The executive summaries and reports shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports and shall be posted on the General Assembly's website.

Appendix B: Research activities and methods

Key activities performed by JLARC staff for this study include:

- structured interviews with (i) the Virginia Department of Education (VDOE) and other state agency staff, (ii) national associations and experts, (iii) state associations and stakeholders, (iv) local school divisions, and (v) other states;
- review of current and historical state laws, appropriations, and policies relating to K–12 education funding;
- review of research literature and reports by national organizations relating to K–12 education funding;
- analyses of SOQ formula calculations of staffing, funding, and state and local funding obligations;
- analyses of school division staffing, financial, and student data collected by VDOE;
- development of “in-house” JLARC SOQ funding model, which was used to model recommended changes and policy options; and
- development of a new student-based funding formula and model.

Structured interviews

Structured interviews were a key research method for this report. Over 117 interviews were conducted, predominantly over the phone or via video conference. Key interviewees included VDOE and other state agency staff, national associations and experts, state associations and stakeholders, local school divisions, and other states.

State agency staff

JLARC staff conducted 30 interviews with VDOE staff to understand the state’s SOQ funding programs and formulas, K–12 staffing, and K–12 data. JLARC interviewed the superintendent and other high-ranking agency staff to learn about VDOE’s role in the funding process and staff perspectives on the SOQ formula. JLARC staff conducted many interviews with VDOE’s budget staff to learn about the details of annual funding calculations to help JLARC develop a reliable in-house funding model. JLARC interviewed VDOE policy, licensure, and data staff to learn about state policies regarding local staffing requirements and datasets relevant to the study. To learn about challenges in school divisions’ interpretation of the SOQs, relevant educational best practices, and federal law, JLARC staff interviewed VDOE offices specializing in particular academic subjects (e.g., CTE), student populations (e.g., English learners), or student support services (e.g., school psychology). Additionally, JLARC staff interviewed the Board of Education president and vice president.

JLARC staff conducted seven interviews with other state agencies with expertise on local finance and data used in the SOQ funding formula. JLARC staff interviewed and met with staff from the Auditor of Public Accounts (APA) multiple times to understand what revenues and expenditures localities report, general trends in that data over time, and best practices for analyzing that data for understanding local revenue capacity. JLARC interviewed Department of Housing and Community Development

staff to learn about their role with the Fiscal Stress Index Report, calculation of revenue capacity, and adaptability of their methodology for use as an ability to pay measure. JLARC staff interviewed staff from multiple departments of the Department of Taxation to understand what data is provided to VDOE for calculating the local composite index (LCI) and what data is included or excluded in final reported metrics for real property taxes, adjusted gross income, and retail sales. To understand what discussions the General Assembly, governor, and senate finance staff had about potential replacement proxies for free lunch metrics used in funding formulas, JLARC staff interviewed the staff at the Department of Planning and Budget, who wrote a report about the subject in partnership with Senate Finance staff.

National associations and experts

JLARC staff interviewed 30 national associations and experts to learn about recommended and other state approaches to funding K-12 education, as well as the resource needs of schools. These interviews included several professional associations dedicated to particular school division positions and services, such as the American School Counselor Association and Council of Administrators of Special Education. Similarly, JLARC staff interviewed several national organizations about K-12 funding policy and their recommendations for optimal funding mechanisms. Those organizations included the Edunomics Lab at Georgetown University, Urban Institute, and the Education Commission on the States. JLARC staff interviewed multiple experts and firms that have conducted K-12 cost studies for other states (e.g., Dr. Bruce Baker, Dr. Lori Taylor, the American Institutes of Research, Picus Odden and Associates), to identify the strengths and weaknesses of various methodologies considered by JLARC staff. For example, JLARC staff sought their expertise on designing hypothetical school divisions for workgroups to consider. Additionally, JLARC staff interviewed the U.S. Department of Education about federal law and guidance relating to English Learners.

State associations and stakeholders

JLARC staff interviewed 17 state associations and stakeholders about their perspectives on the adequacy and transparency of the state's funding for K-12 education. These interviews included several professional associations, such as those for superintendents, teachers, school social workers, and English Learner supervisors. JLARC staff also interviewed the Virginia Municipal League and Virginia Association of Counties. Additionally, JLARC staff interviewed several individuals with expertise on the history of education funding in Virginia, such as legislative budget staff.

Local school divisions

JLARC staff interviewed staff from 26 school divisions. These interviews often included several individuals from each school division, such as superintendents, finance directors, and instructional specialists. These school divisions were selected to reflect the diversity of school divisions in Virginia. The selection process considered division size, geographical location, percentage of higher needs students (at-risk, special education, and English learner), per pupil spending, spending above required local effort, and local composite index score.

Other states

JLARC staff interviewed staff of five other states to learn about their K-12 funding formulas and cost studies. Three of the states (Washington, West Virginia, Wyoming) were selected because they base funding on staffing standards, like Virginia. Two of the states were chosen because they are conducting a long-term implementation of major funding changes (Maryland) or recently converted from a staff-based approach to student weights (Tennessee).

Document and research literature review

JLARC staff performed extensive reviews of state documents, studies, reports, laws, and policies. JLARC staff also reviewed research literature related to K-12 education funding. The key reviews carried out are summarized below.

- Review of Virginia’s K-12 education funding policies and procedures. The primary sources for this review included the Code of Virginia, Virginia Administrative Code, past and current Appropriation Acts, reports by BOE, presentations to Senate and House Finance committees, and materials provided by VDOE (SOQ funding model IT application user manual, other internal policy and procedures materials).
- Review of staffing recommendations from state and national professional associations.
- Review of education cost studies performed for specific other states by national organizations, firms, or legislative staff. Education cost studies estimate how much funding school divisions in a given state need using methods such as cost function modeling and educator workgroups. (Further discussion of how the cost study review was used follows in the discussion of funding benchmarks.)
- Review of publications regarding historical trends in education funding, school division services, states’ approaches to K-12 education funding, and the implications of policy decisions in peer-reviewed journals such as the *Journal of Education Finance* and *Educational Evaluation and Policy Analysis*, as well as by entities such as the National Center for School Mental Health, National Council on Teacher Quality, Migration Policy Institute, Learning Policy Institute, and Edunomics Lab at Georgetown University,
- Review of other states K-12 funding. Key sources reviewed included 50-state syntheses from the Education Commission of the States, American Institutes for Research, WestEd, and Education Law Center. Staff also reviewed reports and laws related to selected other states’ K-12 education funding
- Review of academic literature on the use and development of geographic cost adjustments and economies of scale cost adjustments in education finance.
- Review of peer-reviewed academic research related to education workforce quality and student achievement, including research on how education funding can impact workforce quality and student achievement.

Funding Benchmarks

JLARC staff compared actual K-12 operating funding to four funding benchmarks: (1) other states, (2) a cost function model, (3) a best practices model, based on recommendations from other states,

and (4) a Virginia K-12 staffing needs workgroup model. JLARC staff also (5) compared the funding obligations calculated under the SOQ formula to actual K-12 operating funding and the preceding benchmarks.

All benchmark comparisons used the actual Virginia K-12 per student operating funding amount. The K-12 operating funding amount used in the other states benchmark comparison was from the National Center for Education Statistics (NCES) 50 state data set. However, the K-12 operating funding amounts used for all other benchmark comparisons were calculated by JLARC staff using Annual School Report (ASR) expenditures data from VDOE for FY21 (the most recent year available at the time). ASR data is reported annually by school division and includes details on expenditures by account codes set forth in the state's Chart of Accounts. ASR K-12 operating funding was then converted to per student amounts using end-of-year average daily membership student counts collected by VDOE.

Other states benchmark

To compare Virginia to other states, JLARC staff took the per student K-12 operating funding amounts reported by NCES for all 50 states for FY20 (the most recent year available). Each state's per student amount was then adjusted for cost of labor differences using the 2019 Comparative Wage Index for Teachers (CWIFT), an experimental labor cost index developed by NCES to facilitate comparison of education funding across states and school divisions. Using these adjusted numbers, JLARC staff calculated a 50-state average funding amount and a South Atlantic regional average. Virginia is part of the U.S. Census South Atlantic region, which also includes Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, and West Virginia. Virginia was also compared directly to each of its bordering states: Kentucky, Maryland, North Carolina, Tennessee, and West Virginia.

Cost function model

When other states study their K-12 education funding approaches, they often perform a "cost study" to estimate the funding amount needed. Cost function models are one of the commonly used methods for estimating education funding needs in these cost studies and have been used in at least eight other states over the past decade.

The cost function model predicts K-12 funding needs using statistical relationships to actual funding, standardized test scores, school division characteristics, and student demographics. To develop the cost function model, JLARC hired Dr. Bruce Baker, a leading education funding expert, to adapt an existing, nationally recognized econometric funding model specifically to Virginia. JLARC's chief methodologist worked with Dr. Baker to refine the model using different sets of assumptions and data inputs.

The final Virginia cost function model estimates the funding needed for all school divisions to achieve the 75th percentile nationally on standardized performance tests. The final model uses the relationships between funding, student demographics, and test performance that were observed nationally in the 2018-2019 school year. The model controls for funding differences across states to ensure comparability.

Best practices model, based on recommendations from other states

As noted above, other states often perform cost studies to estimate their K–12 funding needs. Cost studies typically use the same or similar models used in this report, namely (1) cost function models, (2) workgroup models, (3) evidence-based models, and (4) successful school division models.

JLARC staff reviewed funding recommendations from 31 other state cost studies and used recommendations from those studies to develop a “best practices” funding benchmark. To do this, JLARC staff first identified all publically available studies conducted from 2013 to 2022. From those studies, JLARC staff pulled out the recommended *base per student amounts* and *per student weights*. Base per student funding is the amount that each division receives for each student enrolled in the division. Per student weights are the additional percentages of funding recommended for each at-risk, special education, and English learner student.

After base funding amounts were identified, they were adjusted for inflation using the Consumer Price Index and state differences in labor costs using the CWIFT. JLARC staff then selected the midpoint base funding amount, and the midpoints of the student weights, by taking (1) the lower of the average and median, if they were close together, or (2) the halfway point between the average and median, if they were far apart. Additional adjustments were made for the special education weighting, as this weight was structured in several different ways across the many different cost studies reviewed.

The rounded base amount midpoint selected was \$10,900. The rounded student weight midpoints selected were 35 percent for at-risk students, 40 percent for English learners, and 105 percent for special education students.

After cost study midpoints were selected, the benchmark funding amounts for Virginia were determined by multiplying the per student base amount and per student weights by Virginia’s student population. For example, the base amount of \$10,900 was multiplied by the 1,212,500 students enrolled in Virginia schools in FY21. The dollar values calculated from the recommended student weights were then added in. Funding calculations were made for FY17 through FY21. FY21 data is used in the report because this was the latest year for which complete, actual Virginia school division funding data was available for comparison.

JLARC staff produced high and low best practice benchmark funding amounts by using more or less conservative cost assumptions. For example, it was not always clear what funding was included in the base per pupil amount of other states’ cost studies. The base always appeared to exclude transportation and food services costs, so these costs were separately accounted for in the benchmark comparisons. However, it was not clear the extent to which the base per pupil amount in cost studies included instructional costs related to career and technical education, gifted programs, athletics and other co-curricular activities, and after school K-12 instruction. Consequently, JLARC staff calculated a more conservative number where the base was assumed to include these costs and a less conservative number where these costs were not included in the base.

Virginia actual funding compared to K-12 staffing needs workgroup model

In fall 2022, JLARC convened seven workgroups involving more than 40 Virginia teachers, principals, support staff, central office administrators, and program directors. Each workgroup was asked to estimate the type and number of staffing and other resources needed to operate schools of different

types and sizes with higher or lower student need populations. These staffing proposals were converted into staffing ratios by JLARC staff. Similar workgroups have been used by experts to estimate K–12 funding needs in at least 11 other states over the past decade. Additional details on the workgroups and how the staffing ratios were developed are provided below.

JLARC staff took the workgroup staffing ratios and modeled how much total state and local funding would be required to meet these staffing levels, using a refined version of the current SOQ formula, in FY23. (The refined version of the SOQ formula that was used is the version that implemented this report’s recommended near- and long-term changes.) Federal funding deductions were added back in because the goal was to show how much funding the SOQ formula calculates is needed from all sources under the workgroup recommended staffing ratios. This total amount was then converted to a per pupil amount using March 31 average daily membership for FY23 (end of year data was not yet available). The amount was adjusted for inflation to FY21 dollars to make it comparable to actual funding amounts and the other benchmarks.

The workgroup staffing ratios that were modeled are presented in Appendix K.

SOQ-calculated funding obligations compared to actual and benchmarks

Unlike the other benchmark comparisons, which compared actual K-12 operating funding to outside benchmarks, this comparison looked at how SOQ-calculated funding obligations compared to actual funding *and* the outside benchmarks.

The *total* SOQ-calculated funding obligation was determined by taking the total amounts calculated under the formula, for FY17 through FY21 (the most recent year for which comparable actual data was available), and adding back in federal funding deductions. Federal funding deductions were added back in because the goal was to show how much funding the SOQ formula calculates is needed from all sources, to make it comparable to the benchmarks that also include funding from all sources. Chapter 2 presents the FY21 total amount.

The *per student* SOQ funding amounts were calculated by using *state* SOQ funding amounts only, divided by end-of-year average daily membership student counts. These amounts were not adjusted for federal funds because they were intended to show the difference between *state* funding provided under SOQ formula and what *state* funding would hypothetically need to be to meet actual and outside benchmarks. Per student SOQ funding was calculated for FY02 to FY21, and Chapter 2 presents the FY21 total amount. Per student amounts were based on end of year average daily membership student counts.

Virginia K-12 staffing needs workgroups

To collect the perspectives of educational professionals on the number of staff needed in school divisions, JLARC staff held seven workgroups. Workgroup members were asked to propose staffing levels at several hypothetical school divisions that would ensure an adequate education.

Participant selection

There were three pathways for somebody to become a workgroup member: (1) nominations from state professional associations, educational organizations, and VDOE staff; (2) individuals who had

won awards from their local school divisions, VDOE (e.g., regional teacher of the year), state associations, or national organizations; or (3) leadership in state professional associations. From that pool, JLARC staff developed an initial list of individuals to invite as workgroup members. These individuals ensured the diversity of workgroup members in positions and school division characteristics. Ultimately, there were 41 workgroup members representing all eight superintendent regions and 34 school divisions.

Workgroup structure

Seven separate workgroups were convened.

- Elementary school workgroup: 2nd grade teacher, 5th grade teacher, elementary science teacher, three elementary school principals
- Middle school workgroup: science teacher, history and civics/economics teacher, literacy coach, three middle school principals
- High school workgroup: English teacher, geometry teacher, physics/robotics/math teacher, three high school principals
- Student supports workgroup: school social worker, school nurse supervisor, counseling and post-secondary director, two student services directors
- English learner workgroup: three English learner teachers, dual language lead, English learner instructional supervisor, English learner services director
- Special education workgroup: special education teacher, special education teacher and instructional coach, psychology supervisor, three directors of special education
- Appellate workgroup: executive director of elementary teaching and learning, executive director of exceptional education, director of finance, assistant superintendent of business & operations, deputy superintendent & chief academic officer, superintendent

Hypothetical scenarios

JLARC staff designed six hypothetical school divisions for the workgroups to propose staffing. These hypotheticals were intended to reflect the continuum of real Virginia school divisions. Hypothetical divisions varied in the number of students, share of students eligible for free lunch (a proxy for student need), and share of English learner students. For special education, the hypothetical scenarios reflected the statewide percentage of students with disabilities in traditional public schools, proportions of those students by disability (e.g., autism, hearing impairment), and share of their educational time spent in the regular classroom.

Workgroup materials and meetings

All workgroup meetings were held virtually in October 2022. Each workgroup lasted approximately six and half hours, primarily consisting of workgroup member discussions moderated by JLARC staff. At the onset of each meeting, JLARC staff set parameters for workgroup members to propose staffing that was realistic and a prudent use of government resources, as well as specifying areas out of scope (e.g., preschool, cafeteria workers). JLARC staff also instructed members to develop proposals for a school division that “provides a sufficient education”, but asked workgroup members to define that.

After these preliminary activities, the vast majority of the meeting consisted of workgroup members creating a staffing proposal for each hypothetical scenario. JLARC staff acted as a moderator, ensuring that workgroup conversations stayed productive and forward-moving, and that all members' voices were heard. For example, JLARC staff encouraged members to share the current number of a position at their real-world school division, and whether it felt appropriately staffed. In an anonymous survey after the meeting, 97 percent of workgroup members who responded agreed that "my workgroup's final staffing recommendations would be sufficient to provide an adequate education."

Each workgroup was responsible for proposing certain positions for part or all of multiple hypothetical divisions. For example, first grade teacher proposals came from the elementary school workgroup, middle school math teacher proposals from the middle school workgroup, nurse recommendations for all school levels from the student support workgroup, and physical therapist recommendations from the special education workgroup.

JLARC synthesis

JLARC staff combined the workgroup staffing proposals to create a unified set of staffing recommendations for each hypothetical division scenario. In some cases, a position received differing recommendations from multiple workgroups for the same scenario. In such cases, JLARC staff considered several factors in determining which workgroup's proposal to use or whether to use a compromise figure, including which workgroup had more expertise, a better rationale, or a more conservative proposal. Next, JLARC staff converted the scenarios into 72 staffing standards that could be applied to real Virginia school divisions. Goals including respecting workgroup rationales and creating internally logical standards. In some cases, JLARC staff collapsed positions that the workgroups had proposed separately, to promote overall accuracy and comparability.

Most workgroup staffing standards use a student count as adjustment factors, but those adjustments are limited to the workgroups' proposals. For positions where the workgroup changed its staffing proposal from the medium size to small size scenarios (holding other characteristics constant), JLARC staff created a staffing standard that adjusts by student count, assuming a linear relationship. Some staffing proposals did not differentiate by student count, while other staffing proposals were based on the number of a related position (e.g., social worker supervisors vary by the number of social workers). On a similar note, the workgroup staffing standards only adjust positions by free lunch rate when the workgroup changed its staffing proposal from the medium size low needs to the medium size high needs hypothetical.

It is essential to interpret workgroup proposals as estimates. The workgroups frequently emphasized that the number of staff for a particular division is highly dependent on local and individual factors that a formula cannot incorporate. Examples of such factors include the licensures a teacher holds, the number of planning periods provided to teachers, the number of periods in a school day, the subjects in which students enroll, travel time between schools, availability of staff to hire, and the extent of inclusionary culture relating to English learners and special education. The workgroups cautioned that their proposals should be interpreted as one reasonable way to staff a hypothetical school divisions, not a prescription for how real-world school divisions should be staffed. Lastly, cross-referencing between positions proposed by workgroups and position groups in VDOE data sometimes

required judgment calls, meaning that comparisons between the number of staff proposed by workgroups and the number of staff calculated by the SOQ are approximate.

Data analysis

JLARC staff performed several data analyses to better understand school division funding and assess different elements of the SOQ formula. The major analyses performed are summarized below.

Revenues and expenditures analyses

JLARC staff examined long- and near-term trends in school division revenues and expenditures, details of revenue expenditures in recent years, and how revenues and expenditures changed across different school divisions. When looking at long-term trends, JLARC staff examined how revenues and expenditures had changed at the overall level, revenue program- and expenditure account level, and division level. When looking across school divisions, JLARC staff performed several statistical analyses to see if and how funding varied depending on division characteristics such as size, character (rural, urban, suburban), higher needs students (at-risk, special education, English learner), racial demographics, and local wealth (LCI, revenue capacity, spending above required local effort, and U.S. Census poverty rate). The statistical analyses used by JLARC staff were correlations and quintile analysis.

JLARC staff analyses relied on ASR revenues and expenditures data from VDOE for FY06 to FY21 (the most recent year available at the time). JLARC staff also analyzed data from annual required local effort (RLE) and local match reports for several of purposes, including variation in RLE among divisions and to assess division participation in optional local match programs, such as the At-Risk Add-On program.

Staffing analyses

JLARC staff examined staffing ratios and SOQ staffing calculations to determine if the ratios reflected actual school division practices and workgroup benchmarks. Chapter 3 comparisons of staff calculated by the SOQ formula to staff employed by school divisions were limited to positions calculated using a staff-based formula (see Appendix K). In contrast, analyses of total employed staff relative to students encompassed all position groups.

All staffing data was sourced from ASR and Positions and Exits Collection (PEC) data. ASR was used for comprehensive counts of SOQ-calculated and employed positions, while PEC was used for certain counts of employed positions. For PEC data, JLARC staff removed positions reported as vacant for the relevant year, as well as preschool-only schools and positions. JLARC staff created the following mutually exclusive teacher groups from PEC data:

- Kindergarten through fifth grade teachers: All FTE reported with relevant position title (e.g., kindergarten teacher), regardless of grade range at the school.
- Elementary resource teachers: All FTE reported as teaching relevant subjects at a school limited to kindergarten through fifth grade (or a subset of those grades). The statutory staffing standard specifies “art, music, and physical education.”

- Middle school and high school teachers: The low-end estimate in Chapter 4 consists of all teachers at schools serving grades six or higher. The high-end estimate consists of all teachers, then subtracts teachers known to be not middle or high school teachers. The number of SOQ-calculated middle and high school teachers includes FTE calculated for the CTE and higher grade English teacher staffing standards.
- English learner teachers: Counted if reported as (1) English as a Second Language administrator or (2) any teacher flagged by divisions as dedicated to English learners.
- Special education teachers: Counted if reported as (1) special education teacher unassigned to particular grade or subject or (2) any teacher flagged by divisions as dedicated to special education.

Identification of positions ignored by state funding formula

JLARC staff compared actual division staffing practices to staff positions used in the SOQ calculations to see if there were any positions that were commonly employed by school divisions that were not recognized in the SOQ formula. To do this, JLARC staff compiled all unique positions reported by school divisions in ASR data between FY15 and FY21. A unique position is a combination of function, object, and cost codes. Next, JLARC staff identified positions included in VDOE’s definition of a fixed staffing ratio, VDOE’s definition of a support ratio, position categories funded through state formulas that were not staffing based (e.g., transportation, facilities, substitutes). Then, JLARC staff removed positions with the function code for school meals, as the state formula appears to intentionally exclude such positions because of designated federal funding and local charges. This process left seven positions that JLARC staff classified as ignored by the state funding formula (Table B-1).

**TABLE B-1
Positions not recognized in SOQ funding formula**

JLARC staff classification	Function	Object	Cost center
Instructional support	Improvement of instruction (61310)	Administrative (1110) Instructional (1120)	Division wide (9)
	Instruction (61100)	Administrative (1110)	
	Instruction (61100)	Technical (1140) Clerical (1150)	
Administrative	Improvement of instruction (61310)	Technical (1140) Clerical (1150)	

SOURCE: JLARC staff analysis of Annual School Report data and Chart of Accounts.

SOQ cost calculation analyses

JLARC staff performed several data analyses to evaluate the SOQ cost calculations used to generate the cost assumptions in the SOQ formula. Employment, expenditure, and salary data for these analyses were primarily drawn from the ASR. Data on funded salaries was taken from VDOE re-benchmarking presentations. Data on the number of SOQ recognized staff was taken from the Direct Aid

Payment Calculators published for years FY10–FY24. JLARC staff also requested several measures of student enrollment from VDOE’s Office of Data Services. While Chapter 4 of the report discusses only compensation cost assumptions and calculations, all cost assumptions and calculations were examined.

JLARC staff estimated the cost of positions not covered by the SOQ formula to determine the cost impact of the differences between the SOQ formula’s staffing calculations and actual school division staffing. JLARC staff calculated the number of actual staff employed by a division in excess of the number they were funded for. Based on the assumption that SOQ funded staff would not be paid differently than non-SOQ funded staff, JLARC staff multiplied the number of excess staff by the division average salary and associated benefits and payroll taxes for each SOQ position. JLARC staff also estimated the cost of health care for these excess positions by multiplying each division’s weighted average health-care premium by the number of excess positions. JLARC staff added these to figures together to estimate the total cost of compensation for non-SOQ funded positions.

JLARC staff assessed the linear weighted average cost calculation to determine how well it reflected prevailing costs, where prevailing costs took into consideration (1) costs prevailing across all divisions and, (2) for compensation calculations, costs prevailing across staff (by position). JLARC staff used regression analysis of ASR data to determine if any relationship existed between factors like division size and the weights assigned during the linear weighted average salary calculation for all SOQ positions.

To determine if compensation cost assumptions reflected prevailing practice, JLARC staff estimated the difference between SOQ compensation cost assumptions and actual division compensation for SOQ funded staff. Data limitations meant that JLARC staff could not determine the salaries of individual workers nor could JLARC staff determine which school division staff were funded with SOQ dollars and which were not. To overcome this limitation, JLARC staff used the division average salary based on the assumption that SOQ funded staff would not be paid differently than non-SOQ funded staff. JLARC staff calculated the difference between a division’s actual average salary and the funded salary for each SOQ position in each division. To measure the aggregate cost impacts of these differences, JLARC staff determined the number of SOQ funded staff for this analysis by using the lower of a division’s actual employed staff or the number of funded staff for each SOQ position. JLARC staff then converted the percentage difference to a dollar amount, added in the benefits and payroll taxes associated with this difference, and multiplied it by the number of SOQ funded staff to determine the total cost impact.

Compensation supplement analyses

JLARC staff performed several data analyses comparing state compensation supplements to inflation and actual salaries. The purpose of these analyses was to determine if compensation supplements were keeping pace with these two benchmarks.

JLARC staff reviewed all compensation supplements provided from FY21 to FY24, including both budgeted and actual amounts distributed (when available), and calculated the actual increase percentage from year to year and the average actual increase. This increase in funding from the compensation supplement was then compared to growth in price inflation as measured by the Consumer Price Index

from the Bureau of Labor Statistics (BLS) and growth in actual wages for the average Virginia worker. JLARC staff used wage data from the BLS Occupational Employment and Wage Statistics survey to determine the wage for the average Virginia worker.

Estimating funding impacts of Great Recession era changes

JLARC staff collected and cleaned enrollment, employment, salary, and expenditure data from VDOE to estimate the historical impact of major Great Recession-era changes to the SOQ formula. This data was primarily drawn from the ASR. JLARC staff also collected several measures of enrollment from the VDOE Office of Data Services. Due to a combination of data limitations from VDOE and the considerable time lag between when data is collected and when it influences the SOQ formula, JLARC staff were only able to estimate the funding impact for some changes between FY18 and FY22. JLARC staff used additional employment and enrollment data from the Direct Aid Payment Calculators to estimate funding loss associated with the Support Cap from FY10–FY24.

LCI analyses

JLARC staff performed several analyses to assess the LCI. To assess how well the LCI weights compared to actual local revenues, JLARC staff collected local revenue data from the Virginia Auditor of Public Accounts to examine revenue trends over the 15-year period of FY05–FY21. Staff determined it appropriate to include only years before the COVID-19 pandemic to understand trends in ‘normal’ fiscal years. Local reliance on different tax bases were then compared to the LCI weightings. For example, the analysis found local governments relied on sales taxes for 6.4 percent of revenue, while the LCI weighted retail sales at 10 percent.

To determine if there were any issues with the real property values included in the LCI calculation, JLARC staff interviewed Virginia Department of Taxation (TAX) staff, reviewed TAX documents and Code, and compared data across multiple TAX and VDOE sources to determine what real property is and is not included in LCI calculations.

To determine if and how the LCI calculation might be affected by large outliers in the gross income value reported by TAX, JLARC staff performed both qualitative and quantitative analyses. First, JLARC staff interviewed TAX staff and reviewed TAX documents to determine what, if any, outliers are excluded from adjusted gross income in localities. Then JLARC staff stratified total adjusted gross income in each locality into quintiles. Staff compared the ratio of each locality’s total income over the state total of income when returns reporting \$1 million or more income were removed versus included. Finally, staff identified school divisions expressing concern about AGI outliers and identified the difference between their current LCI and if the LCI was calculated removing \$1 million and over earners.

To assess year-to-year volatility in the LCI, JLARC staff reviewed excel files provided by VDOE with existing LCI volatility analysis in hidden tabs of the LCI calculation template. JLARC staff also collected data from VaTAX and the Weldon Cooper Center at UVA to compare the two-year trend analyses in VDOE files with one-year trends. Staff then compared funding amounts provided in VDOE budget calculation files for FY23 using the FY21–22 biennium LCI versus FY23–24 LCI to determine the actual impact of LCI volatility.

Revenue Capacity Index Analysis

JLARC staff identified a Revenue Capacity Index (RCI) as a potential alternative to the LCI. To assess the viability of an RCI, JLARC staff combined and compiled data from multiple sources to calculate what an RCI would look like for Virginia (see Appendix I). Staff then compared the RCI by division for FY23 to the current LCI for each division to determine changes in expected state and local share. Staff also examined year-to-year changes for the RCI compared to the LCI to see if RCI was more or less volatile.

State funding for higher needs students analysis and benchmarking

JLARC staff calculated how much funding the state provides for higher needs students and benchmarked funding to get a sense of how Virginia compares to other states and best practices, as recommended in cost studies for other states. Total state funding amounts were calculated for at-risk, special education, and English learner students using all SOQ and non-SOQ funding for those students, as identified through program names, descriptions, and purpose as defined in the appropriation act or Code of Virginia. Funding was calculated for FY09 through FY21 using actual reported state revenues, and for FY22 through FY24 using budgeted state revenues. The SOQ special education and at-risk funding accounts do not capture all costs associated with those programs—namely employee benefit and payroll taxes—so these costs were added in to more accurately represent the state’s funding commitment. The total funding amount for each higher need student group was then divided by the number of students in that group. For at-risk students, JLARC staff used the April 1 weighted identified student percentage (ISP) to determine the at-risk student count. For special education students, the December 1 special education child count was used. However, the FY23 special education child count was imputed based on the FY22 count because FY23 data was not yet published. For English learners, the September 30 fall membership count was used.

The other states benchmark analysis compared Virginia’s FY23 *state* funding for higher needs students to three other states: Maryland, Tennessee, and Kentucky. These states were selected because they border Virginia, and funding amounts could be clearly determined and easily compared. For each state, JLARC staff identified the most recent *state* base student funding amounts and student weights reported in state statutes or funding program websites or materials and adjusted them for inflation (when necessary) and cost of labor differences.

The best practices benchmark analysis compared Virginia’s state funding for higher needs students to what was recommended in cost studies. To do this, JLARC staff reviewed 31 cost studies conducted from 2013 to 2022 and identified the recommended base per student amounts and student weights recommended by each study. Base funding amounts were adjusted for inflation and cost of labor to be equivalent to Virginia’s FY23 funding amount. The midpoint (lower of the average or median) base and student weight amounts were then determined and used as the benchmark comparison points. Several other adjustments were made for the special education weighting, as this weight was structured in several different ways across the many different cost studies reviewed.

Budget Office Free Lunch Proxy Analysis

JLARC staff combined data sources from several sources provided by the DOE budget office and Office of School Nutrition (OSN) programs:

- free lunch working file (budget office),
- April 1 CEP eligibility report (OSN),
- validated CEP participation report (OSN), and
- free and reduced price eligibility report (OSN).

Estimates in Chapter 6, Figure 6-5 compare free lunch eligible percentages provided in the free and reduced price eligibility report (FRP report) to the estimated free lunch percentage proxy calculated by the budget office in the free lunch working file.

Free lunch percentages in the budget office working file and FRP report are calculated at the school level. In both cases, non-CEP school free lunch eligible counts are those reported in the FRP report. For CEP schools, however, the budget office and OSN differ slightly in methodology. Budget office free lunch eligible counts can be up to seven years old, because CEP school free lunch counts are estimated using the last pre-CEP free lunch rate, and getting older each year. In contrast, OSN free lunch percentages are, at most, three years old for some schools and in most cases from the same year.

(CEP, or Community Eligibility Provision, is a federal program that allows high poverty schools and school divisions to receive federal free lunch funding for all of their students instead of just those identified as qualifying based on applications. CEP schools and divisions do not have to collect free lunch applications and instead have their eligibility determined using an analysis of student enrollment in social services programs, called the Identified Student Percentage. This different methodology results in a different student count for these schools and divisions compared to the non-CEP schools, which still use applications.)

Analysis of non-SOQ funding programs

JLARC staff reviewed all non-SOQ funding programs and evaluated the formulas for the largest programs (over \$10 million) and all of the at-risk funding programs. To carry out this review, JLARC staff analyzed formula calculations in VDOE's "DABS" spreadsheet and other formula-specific spreadsheets.

Cost of Competing Adjustment

JLARC staff compared the current SOQ cost of competing adjustment (COCA) to the distribution of labor costs in Virginia to see how well the COCA percentages reflected actual labor cost differences. JLARC staff relied on the CWIFT as their measure of labor costs for educational professionals. The CWIFT is an index that measures variation in labor costs for workers comparable to teachers compared to the national average wage for workers comparable to teachers after accounting (set to a value of one) for variation in wages attributable to factors like race, age, and education. More information on the CWIFT methodology is available through the National Center for Education Statistics and in Appendix L. JLARC staff modified the CWIFT values for school divisions in Virginia so that they were indexed to Virginia's statewide average wage for workers comparable to teachers rather than the national average.

Small Division Economies of Scale

JLARC staff reviewed research literature on economies of scale in schools and school divisions. JLARC staff plotted Virginia school divisions on an economies of scale cost curve, using a formula developed by researchers. The literature reviewed and cost curve used are described in detail in Appendix M.

Modeling changes to the SOQ formula

To estimate the cost impact of potential recommendations, JLARC staff constructed an internal model of the SOQ formula. JLARC staff relied on extensive interviews with VDOE staff and reviews of VDOE documentation when constructing the JLARC SOQ model. JLARC staff were able to replicate most major cost and staffing calculations but a lack of clear VDOE documentation and data limitations meant that JLARC staff could not exactly replicate the SOQ formula.

To generate the state funding impact estimates for recommendations and options shown in Chapter 8, JLARC staff followed two steps. First, JLARC staff ran a “baseline” version of the model that was the best approximation of the current SOQ formula. Second, JLARC staff implemented the recommendation or option in the model formula and generated what the expected new funding requirement would be. JLARC staff then compared the new cost estimate to the “baseline” cost estimate.

In modeling the recommendations and options, JLARC staff drew on the many data analyses described above. Key elements of the modeled calculations are found in the report appendices, including an RCI alternative to LCI (Appendix I), a proposed new at-risk program funding calculation (Appendix J), staffing ratios that reflect current practices (Appendix K), a new cost of competing adjustment based on labor cost index (Appendix L), and a small school division economies of scale adjustment (Appendix M).

Student-based formula

JLARC staff identified two options for replacing all or part of the current SOQ formula with student-based funding calculations: (1) the General Assembly could replace the entire current SOQ formula with a new student-based formula, or (2) the General Assembly could keep the current staffing-based formula for most funding but convert special education and English learner funding to student-based calculations. JLARC staff developed a detailed methodology for both of these student-based formula options, which is described in detail in Appendix N.

Agency response

As part of an extensive validation process, the state agencies and other entities that are subject to a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff sent an exposure draft of this report to the secretary of education and the Virginia Department of Education (VDOE). Representatives from Virginia school divisions were also provided an opportunity to comment.

Appropriate corrections resulting from technical and substantive comments are incorporated in this version of the report. This appendix includes a response letter from the secretary of education and VDOE.



COMMONWEALTH of VIRGINIA

Office of the Governor

Aimee Rogstad Guidera
Secretary of Education

July 10, 2023

Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street Suite 2101
Richmond, VA 23219

Director Greer,

Thank you for the opportunity to review and provide comments on JLARC's report on the *K-12 Standards of Quality Funding Formula*. JLARC's analysis illuminates the complexity of Virginia's current indecipherable state funding formula which underscores the need for reforming key elements to be more student focused and outcome driven.

Regrettably, the report lacks an assessment of the effectiveness of the current Standards of Quality in meeting the educational needs of students. Furthermore, the decision to exclude the two most recent fiscal years in your analysis results in an inaccurate picture of the current fiscal reality and fails to capture the impact of recent historic budget increases, especially in teacher pay. As you know, the FY23-24 budget included \$3.2 billion in additional K-12 direct aid and Governor Youngkin's introduced amendments included an additional \$427.7 million, both of which amount to the largest education budget in history.

Nevertheless, the report makes it clear that without reforms, increased investments in K-12 spending likely will not translate into improved student outcomes. As you point out in your report, the lack of clarity makes it difficult for school divisions and policymakers to allocate resources effectively. The current formula contains arbitrary and restrictive provisions that limit the discretion of local school leaders to make effective resource allocations that will best meet student need. The Commonwealth's formula is also antiquated and uses measures that were necessary proxies in earlier eras due to the dearth of student-level data available at the state level.

The Administration has outlined necessary reforms to our K-12 public education system in the report *Our Commitment to Virginians: High Expectations and Excellence for All Students* and the report *To Promote Excellence and Higher Student Achievement in Response to House Bill 938*, the latter of which focuses on four key areas of reform highlighted in your study: fixing our accreditation system, stronger proficiency standards on Standards of Learning tests, instructional and student improvement in math to pair with our focus on literacy, and better pathways for career readiness including reforming the funding of career and technical education.

In order to meet our Constitutionally mandated goal of establishing and continually maintaining a high-quality education for all students, we must not only build off the historic investments made over the past two years, but reform our system to drive dollars into the classroom in a way that improves outcomes for our students.

With appreciation,

Aimee Rogstad Guidera

Aimee Rogstad Guidera

Secretary of Education

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Superintendent of Public Instruction



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