Funding Public Schools: Is the BEP Adequate?

John G. Morgan
Comptroller of the Treasury
Office of Education Accountability
July 2003

STATE OF TENNESSEE

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July 15, 2003

The Honorable John S. Wilder
Speaker of the Senate
The Honorable Jimmy Naifeh
Speaker of the House of Representatives
And
Members of the General Assembly
State Capitol
Nashville, Tennessee 37243

Ladies and Gentlemen:

Transmitted herewith is a report prepared by the Office of Education Accountability concerning the Basic Education Program funding formula for K-12 education. The report provides information and recommendations that may be useful to policymakers in evaluating the extent to which the BEP formula provides sufficient funding for local education agencies, schools, and students to meet goals set forth by the General Assembly. The report also analyzes specific components of the BEP and suggests ways they might be revised.

Sincerely,

John G. Morgan
Comptroller of the Treasury

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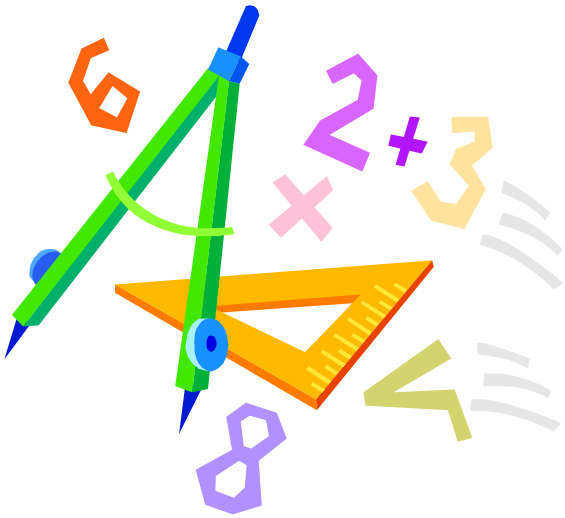
Is the BEP Adequate?



Part I: Setting and Reaching Standards
Part II: An Examination of the BEP Formula

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Comptroller of the Treasury
July 2003

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Comptroller of the Treasury, Office of Education Accountability. Authorization Number 307305, 600 copies, July 2003. This public document was promulgated at a cost of $2.81 per copy.

To give every citizen the information he needs for the transaction of his own business;

To enable him to calculate for himself, and to express and preserve his ideas, his contracts and accounts, in writing;

To improve, by reading, his morals and faculties;

To understand his duties to his neighbors and his country, and to discharge with competence the functions confided to him by either;

To know his rights; to exercise with order and justice those he retains, to choose with discretion the fiduciary of those he delegates; and to notice their conduct with diligence, with candor, and judgment;

And in general, to observe with intelligence and faithfulness all the social relations under which he shall be placed.

—Thomas Jefferson, on the purposes of primary education, 1818

Executive Summary

In 1992 the General Assembly passed the Education Improvement Act, or EIA (Public Acts 1992, Ch. 535), creating the Basic Education Program (BEP), Tennessee's education finance formula. The EIA directed the State Board of Education to "[d]evelop and adopt policies, formulas, and guidelines for the fair and equitable distribution and use of public funds among public schools and for the funding of all requirements of state laws, rules, regulations and other required expenses…."[1] The BEP is the statutory mechanism through which the Board exercises this responsibility.

The Board developed the BEP prior to 1992 as a basis for its annual *Funding Needs Report*. The state phased in this new education funding formula over five years, reaching full formula funding in the 1997-98 school year. Except for a few revisions, the formula remains unchanged.

Of the more than $5.6 billion in revenue local education agencies reported in fiscal year 2002, combined state and local shares of the BEP accounted for 63 percent, or $3.4 billion. The state's share was approximately two-thirds of the total generated by the BEP. Partly funded by a half-cent sales tax increase, state funding for elementary and secondary education rose over $1.1 billion from 1991-92 to 2001-02. The new formula and the resulting increase in funding improved education finance equity among Tennessee school systems.

Although the BEP has significantly increased Tennessee's education funding, recent enforcement of state and federal high stakes accountability systems and efforts to strengthen state standards indicate that the BEP may not fund the "full tool box"[2] of resources the Board and General Assembly envisioned. Sources and evidence of this include:

- *fiscal constraints;*
- *state legislation and regulation;*
- *federal legislation and regulation;*
- *demographic changes;*
- *economic development;*
- *better data; and*
- *research innovations.*

In addition, in October 2002, the Tennessee Supreme Court ruled against one component of the BEP, teachers' salaries. The Court held that the method of funding teachers' salaries "fails to comply with the State's constitutional obligation to formulate and maintain a system of public education that affords a substantially equal educational opportunity to all students." The recent focus on Tennessee's lowest-performing schools highlights the need for Tennessee to better define its responsibilities for children living in poverty. Of the 98 schools placed on notice of probation in 2001, 96 had greater than 60

[1] TCA § 49-1-302(a)(4).

[2] The phrase "full tool box" appeared in the State Board of Education's *Master Plan* for 1992 and was used by Commissioner of Education Charles Smith to describe the BEP to the General Assembly and other groups.

percent of their school populations eligible for free and reduced lunch. The majority of the schools exceeded 80 percent.[3]

In this two-part report, the Office of Education Accountability examines past and evolving conditions that affect the demand for education-related services. The report raises several questions:

- What public educational services should Tennessee provide?
- What goals should Tennessee expect schools to meet?
- What proportion of education funding should the federal, state, or local governments each provide?
- What is the state's responsibility for assuring fiscal and academic performance?
- Does the BEP formula *adequately* fund the performance goals to which Tennessee aspires?

Part I: Setting and Reaching Standards addresses the challenges of establishing outcomes-based goals that can be used as a yardstick for measuring adequacy. It also examines some school expenses not addressed by the BEP and institutional and governance changes that may help achieve adequacy. *Part II: An Examination of the BEP Formula* provides more detailed information on the structure and components of the BEP. It evaluates the extent to which BEP components are funded at a level consistent with the requirements imposed by laws and rules for provision of relevant services. In cases where no state input standards exist, the Office of Education Accountability cites other standards or benchmarks based on research, professional associations, and expert judgment.

Part I:
The BEP formula is based primarily on inputs required for K-12 education rather than outcomes expected. Two authors define an adequate funding system as one that gives students "access to educational resources and opportunities adequate to achieve desired educational outcomes."[4] If Tennessee were to fund based on adequacy the formula would link dollars to educational outcomes rather than defining one basic "tool box" of educational goods and services. The English Language Learner (ELL) and K-3 at-risk components of the formula are two components that attempt to reflect the needs of particular populations, but most BEP components do not. The BEP generally addresses equity in resources provided to LEAs but not equal opportunity for students to achieve performance standards. (See page 13.)

Tennessee has not clearly defined a "basic" education. Although the Tennessee Supreme Court's *Small Schools* decisions and Tennessee's education statutes describe

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[3] *Tennessee Schools on Notice, 2001-02: Statewide Summary*; Office of Education Accountability, Comptroller of the Treasury, p. 5. (Data compiled from Tennessee Department of Education Report Card.)
[4] Paul A. Minorini and Stephen D. Sugarman, "Educational Adequacy and the Courts: The Promise and Problem of Moving to a New Paradigm," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issue and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 176.

requirements and goals of public education, neither explicitly defines the minimum state responsibility or the meaning of "basic" in the Basic Education Program. (See pages 13-14.)

Because the state has not determined what standards should be used to measure adequacy, it is difficult to assess whether the BEP funds an adequate education. Evaluating the adequacy of the BEP requires a measurable standard for what constitutes "access to educational resources and opportunities adequate to achieve desired educational outcomes."[5] If test performance is the primary means of measuring schools' achievement of the state's educational goals, then what is the standard by which to measure performance to determine whether "adequacy" has been achieved? For example, how many students in a school or an LEA may fail a Gateway exam, or what percent of the schools in a system may be put on notice of probation for a system to be judged "inadequate"? (See page 14.)

Once an adequacy standard (or standards) is defined, several approaches may be used to determine the resources necessary to reach it. Four models have emerged in other states wrestling with the adequacy issue:

- Professional judgment – Relies on educators and other experts to "construct an ideal-type delivery system…. The components of such a system can then be identified and costs assigned to them."[6] (This was the main approach used to develop the BEP.)
- Successful schools or school districts – Identify those LEAs or schools performing at the desired level and the resources employed in them, taking into account non-school (e.g., socio-economic) factors that influence performance. "The underlying assumption is that any district should be able to accomplish what some districts do accomplish."[7]
- School reform models – Identifies components necessary to increase student performance based on pre-designed curriculum programs showing some evidence of success.
- Statistical estimation – Builds a statistical model that reflects the many factors influencing student performance to estimate the cost of reaching performance goals in various schools.[8] (See pages 14-15.)

Because adequacy implies helping all students reach a certain performance level regardless of student characteristics, an adequate finance system would likely focus resources or reforms on subsets of the student population. Research relating financial resources to student performance broadly argues that how money is spent determines its impact on outcomes. An adequate finance system is likely to target resources to some

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[5] Ibid.

[6] James W. Guthrie and Richard Rothstein, "Enabling 'Adequacy' to Achieve Reality: Translating Adequacy into State School Finance Distribution Arrangements," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 228.

[7] *Ibid*., p. 224, quoting from John Augenblick, *Recommendations for a Base Figure and Pupil-Weighted Adjustments to the Base Figure for Use in a New School Finance System in Ohio*, Report to the School Funding Task Force, Ohio Department of Education, 1997.

[8] WestEd Policy Brief, "School Funding: From Equity to Adequacy," July 2000; John Augenblick, "Alternative Ways to Determine an Adequate Level of Support for Public Schools in a State," Presentation to National Conference of State Legislatures, August 14, 2001.

subsets of students. Test scores and other educational outcomes tend to be closely correlated with socioeconomic status and other factors. Focusing resources on at-risk students could help raise their test scores. (See pages 15-16.)

The BEP does not include some components that research indicates could help achieve adequacy, nor fully fund others. These include pre-kindergarten programs, additional targeted class-size reductions, and professional development. In addition to adding BEP components, other institutional and governance changes may help achieve adequacy. Whole-school reform models, programs targeting at-risk students, and school choice models are three possible approaches to raising at-risk students' achievement levels. (See pages 16-21.)

Part II:
Part II: An Examination of the BEP Formula provides a detailed analysis of specific components and features of the BEP including the fiscal capacity index, the cost differential factor, instructional salaries, transportation, school nurses, superintendents' funding, alternative schools, technology and capital outlay. It also evaluates general class size standards and those for at-risk students.

The BEP estimates and distributions need ongoing analysis and verification. *Tennessee Code Annotated* §49-1-302(4) states that it is the State Board's duty "to develop and adopt policies, formulas, and guidelines for the fair and equitable distribution and use of public funds among public schools…and to regulate expenditures of state appropriations for public education, kindergarten(K) through grade twelve (12)…" In addition, State Rule 0520-1-2-.13(2)(d) requires the State Board of Education to approve the estimated annual BEP allocations for each school system.

Although the Comptroller's Office and others continue to regularly audit and analyze expenditures, the BEP formula itself is based on many sources of data and includes hundreds of calculations that ultimately determine allocations to school systems. In the BEP's early years, the State Board served as a check on the assumptions and calculations of the formula. However, in 1997, the State Board was reorganized, lost several positions, and no longer has a staff person to monitor the BEP. Although the board has routinely approved the annual BEP estimates, it is often on a consent calendar with little or no analysis or questioning. (See page 27.)

Comparing BEP-generated dollars for a particular component to LEAs' expenditures for that component is insufficient to determine whether the component is funded at a "basic" level. Because of varying local priorities and choices and the constraint of insufficient financial resources in some cases, the Office of Education Accountability (where possible) estimated the cost of reaching legislative or regulatory standards for provision of specific services. In some instances this report considers actual LEA spending on specific items, but only as one factor in assessing the sufficiency of resources. (See page 27.)

The methodology used in computing the fiscal capacity index, cost differential factor, and many components of the BEP result in a formula that does not necessarily reflect the actual cost of a basic education. Since passage of the Education Improvement Act in 1992, Tennessee has experienced many legal and demographic

changes that impact education services. State and federal laws and standards have changed; more research is available; and policymakers now have a decade of experience to draw upon. In this new environment, modifications to many features of the BEP would likely make the overall formula more reflective of the actual cost of a basic education. (See pages 27-51.)

Alternatives

The report provides various alternatives (beginning on page 51) that policymakers may wish to consider:

The General Assembly may wish to establish desired outcomes for the state's K-12 education system and the state's responsibilities for public education in light of those outcomes.

The General Assembly may wish to amend TCA §49-1-302 (a)(4) to require the BEP Review Committee to review the formula's components and report annually to the General Assembly.

The General Assembly may wish to seek recommendations from the BEP Review Committee or others to modify the following aspects of the BEP formula:

- Fiscal capacity index
- Cost differential factor
- Class size
- Instructional salaries
- Superintendents
- School nurses
- Alternative schools
- At-risk class size
- Technology and technology coordinators
- Capital outlay

The State Board of Education should define a set of "adequate" performance standards based on outcomes established by the General Assembly.

The State Board of Education should propose any necessary modifications to the BEP formula to more explicitly address desired outcomes and standards established by the General Assembly and the Board.

The State Board of Education should analyze and verify BEP estimates and distributions on an ongoing basis.

The Department of Education should incorporate all transportation-related expenditures into the model that generates the BEP transportation component.

Management Responses

The Department of Education concurred with all findings and recommendations in this report. (See Appendix 8.)

The State Board of Education did not respond to a draft copy of this report.

Table of Contents – Part I: Setting and Reaching Standards

Introduction 1

Methodology 3

Background 3

An Overview of the BEP 3

Local Flexibility and Accountability 4

Defining "Basic" 5

Defining "Adequate" 5

Laws and Regulations 7

Legislative and Regulatory Performance Standards 9

State Board of Education Master Plan 9

On-notice standard 9

Exams required for a high school diploma 10

Tennessee higher education entrance requirements 12

A cautionary note 12

Analysis and Conclusions 13

The BEP formula is based primarily on inputs required for K-12 education rather than outcomes expected. 13

Tennessee has not clearly defined a "basic" education. 13

Because the state has not determined what standards should be used to measure adequacy, it is difficult to assess whether the BEP funds an adequate education. 14

Once an adequacy standard (or standards) is defined, several approaches may be used to determine the resources necessary to reach it. 14

Because adequacy implies helping all students reach a certain performance level regardless of student characteristics, an adequate finance system would likely focus resources or reforms on subsets of the student population. 15

The BEP does not include some components that may help achieve adequacy. 16

Pre-kindergarten programs 16

Class-size reduction 17

Professional development 18

Possible changes outside the BEP 19

Reform models and at-risk programs 20

School choice models 20

Table of Contents – Part II: An Examination of the BEP Formula

Introduction 23
Methodology 23
Background 25
- Classroom and Nonclassroom Components 25
- Cost Differential Factor 25
- Fiscal Capacity Index 25
- Local Flexibility and Accountability 26

Analysis and Conclusions 27
- Oversight and Review of the BEP 27
- Fiscal Capacity Index 27
- Cost Differential Factor 29
- Class Sizes 30
- Instructional Salaries 31
- Superintendents 33
- School Nurses 35
- Alternative Schools 38
- At-Risk Class Size Component 40
- Technology and Technology Coordinators 41
- Transportation 44
- Capital Outlay 45

Alternatives-Parts I and II 51
- Legislative Alternatives 51
- Administrative Alternatives 52

Appendices 54
- Appendix 1: Higher education entrance standards 54
- Appendix 2: Tennessee Department of Education on-notice criteria, 2001-03 55
- Appendix 3: Tennessee ACT data 56
- Appendix 4: Fiscal Capacity Index 58
- Appendix 5: Components of the BEP, as Shown in the State Board of Education's "Blue Book" 59
- Appendix 6: Local Salary Supplements 63
- Appendix 7: Organizations/People Contacted 67
- Appendix 8: Response from the Department of Education 70

Part I—Setting and Reaching Standards

Introduction

In response to a lawsuit challenging inequities in the state's education finance system, in 1992 the General Assembly passed the Education Improvement Act, or EIA (Public Acts 1992, Ch. 535), creating the Basic Education Program (BEP), Tennessee's education finance formula. The EIA directed the State Board of Education to:

> Develop and adopt policies, formulas, and guidelines for the fair and equitable distribution and use of public funds among public schools and for the funding of all requirements of state laws, rules, regulations and other required expenses, and to regulate expenditures of state appropriations for public education, kindergarten (K) through grade twelve (12).[1]

The law further explains the BEP as the formula developed by the Board,[2] which describes the BEP in its *Master Plan* for 1991 and 1992. As the policy-making body for K-12 education in Tennessee, the Board outlined "key result areas" for Tennessee's K-12 education system, including "[e]stablishing a modern '21st Century Classroom'" and "[p]roviding adequate and sustained school funding." The "major building blocks" of both these goals include the BEP, which the *Master Plan* regarded as supporting "a sound instructional program, with a 'full tool box' of resources."[3]

Of the more than $5.6 billion in revenue reported by local education agencies in fiscal year 2002, the combined state and local shares of the BEP accounted for 63 percent, or $3.5 billion. The state's share was approximately two-thirds of the total $3.5 billion generated by the BEP.[4] Partly funded by a half-cent sales tax increase, state funding for elementary and secondary education through the BEP rose over $1.1 billion from 1991-92 to 2001-02. The new formula and the increase in funding improved education finance equity among Tennessee school systems.

Yet, for a number of reasons, it now appears the BEP may not fund the "full tool box" of resources the Board and General Assembly envisioned.

- *Fiscal constraints* – Choices about how to generate dollars for specific components of the BEP or what to include as components were and continue to be influenced by revenue limitations.

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[1] TCA § 49-1-302(a)(4).

[2] TCA § 49-3-351(a) states: "State funds appropriated for the basic education program (BEP), kindergarten through grade twelve (K-12), shall be allocated pursuant to the formula devised by the state board of education…."

[3] State Board of Education, *Master Plan for Tennessee Schools: Preparing for the 21st Century, 1992*, November, 1992; State Board of Education, *Master Plan for Tennessee Schools: Preparing for the 21st Century, 1991*, November, 1991.

[4] Calculations by Office of Education Accountability staff based on data from school systems' 2000-01 Annual Financial Reports and the 2000-01 BEP model.

- *State legislation and regulation* – Over the last decade, the federal government, the General Assembly and the Board have strengthened certain laws or regulations, such as zero tolerance, special education, and other components, that compel school systems to provide greater services in some areas than when the EIA passed.

- *Federal legislation and regulation* – Tennessee's K-12 schools and the State Department of Education must respond to Congressional actions and changing requirements of the U.S. Department of Education and other federal agencies, such as amendments to the Individuals with Disabilities in Education Act and the recent reauthorization of the Elementary and Secondary Education Act.

- *Demographic changes* – Since the BEP's 1992 inception, the demographic composition of the student population has changed. The number of students enrolled in K-12 education is larger and more diverse. For example, LEAs must increasingly consider the needs of English Language Learners,[5] who are also often of lower socioeconomic status.[6] Between 1993-94 and 2001-02, the number of ELL students increased from 3,340 to 13,737.[7]

- *Economic development* – A state (as well as national) trend from production of goods to production of services and reliance on technological innovations in all sectors has increased employers' demands for a new set of skills and education. Reporting on changing workforce needs, the Federal Reserve Bank of Atlanta recently wrote:

  > While parts of the Southeast remain a leader in agriculture and forest products, these industries account for a much smaller share of economic activity and employment than they have in the past. Likewise with manufacturing: carpet, textiles and household goods are still important to the Southeastern economy, but they're no longer the principal engine of growth.
>
> *What's largely replaced these traditional industries in the Southeast and the nation is skills- and technology-based services and manufacturing.*[8] [emphasis added]

- *Better data* – School systems' needs and expenditures in some areas that were difficult to measure in 1992 are now quantifiable. For example, the Tennessee Department of Education has expanded expenditure reporting to include alternative schools and fee waivers.

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[5] The Department of Education defines an English Language Learner as "one whose native language is not English and whose difficulty in listening, speaking, reading, or writing English is an obstacle to successful learning in a classroom where English is the language of instruction."
[6] Education Commission of the States, *21st Century School Finance: How is the Context Changing?*, Education Finance in the States: Its Past, Present, and Future, p. 4.
[7] Tennessee Department of Education, *A Summary of Tennessee's Public School Systems: Report Card, 1994 through 2002.*
[8] "Developing a Workforce to Meet Today's Business Needs," *EconSouth*, Third Quarter 2001, p. 9.

- *Research innovations* – Improved data and statistical techniques continue to provide a more sophisticated understanding of what programs most efficiently contribute to educational outcomes.

In this report, OEA examines the BEP in the context of past and evolving conditions that affect the demand for education-related services. The report raises several questions:

- What public educational services should Tennessee provide?
- What goals should Tennessee schools reasonably be expected to meet?
- What proportion of education funding should the federal, state, or local governments each provide?
- What is the state's responsibility for assuring fiscal and academic performance?
- Does the BEP formula adequately fund the performance goals to which Tennessee aspires?

Part I: Setting and Reaching Standards addresses many of the legal and practical difficulties of answering those questions. It also examines some components not included in the BEP and institutional and governance changes that may help achieve adequacy. *Part II: An Examination of the BEP Formula* provides more detailed information on the structure and components of the BEP.

Methodology

The conclusions and recommendations included in this report are based on:

- a review of relevant state and federal laws;
- a review of relevant State Board of Education rules and policies;
- interviews with state and local government officials, academic experts, and various stakeholders – different representatives of the "education community," including teachers, superintendents, school boards, state agencies, and researchers;
- a survey of Tennessee directors of schools; and
- a review of relevant publications and Internet sites.

Background

An Overview of the BEP

The General Assembly passed the Education Improvement Act in 1992 in response to equity concerns brought by the plaintiffs in *Small Schools v. McWherter* and affirmed by the state Supreme Court in 1993.[9] The Board created the BEP prior to 1992 as a basis for its annual *Funding Needs Report*.[10] Following its passage into law, this new education funding formula was phased in over five years, reaching full formula funding in the 1997-98 school year. Except for a few minor changes, the formula remains unchanged.

[9] 851 S.W.2d. 139, Tenn. 1993.
[10] Tennessee Department of Education, *Basic Education Program: Education Funding in Tennessee*, no date, p. 4.

The distribution of categorical funds and the partial fiscal equalization in the old formula, the Tennessee Foundation Program, exacerbated inequities in education funding. When the General Assembly debated the merits of the BEP, the Commissioner of Education described the Tennessee Foundation Program as primarily "a mechanism to distribute salary money."[11] However, the new BEP formula combined all previous categorical and formula funding programs into one formula. It removed most restrictions on how formula money may be spent, shifted from an attendance-based formula to a membership-based formula, incorporated inflation adjustments into many components, and created a unique measure of fiscal capacity to equalize funding among school systems. The EIA also included new fiscal and performance accountability measures.[12]

In calculating the BEP, education officials attempt to determine the costs of various components of public education, such as instructional salaries, classroom equipment, school construction, and student transportation. They then add the costs of these components to compute the total cost of the BEP. Each local education agency (LEA) receives a certain level of BEP funding based on the specific characteristics of that school district. For example, an LEA that buses a large number of students over great distances will receive more transportation funding; the BEP generates no transportation funding for an LEA that does not bus students. Most BEP funding is based on adjusted average daily membership (ADM), an average enrollment number weighted by the proportion of the school year each student is enrolled. (Part II of this report, *An Examination of the BEP Formula*, provides more detailed information on the structure and components of the BEP.)

Local Flexibility and Accountability

Through the 1992 Education Improvement Act, the General Assembly sought to give LEAs flexibility to use state funds to meet local needs by removing many of the TFP's stipulations. In most cases the state does not require LEAs to spend money generated for individual components on those components, though it does require LEAs to spend BEP-generated classroom dollars on BEP-determined classroom needs.[13] Thus, local districts could use BEP-generated transportation funding to provide for maintenance and operations expenses (both nonclassroom components) or vice versa. They could also use dollars generated for either of these components to provide substitute teachers (a classroom component), but they could not use substitute teacher funding for transportation or maintenance and operations.

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[11] Memorandum regarding the Education Improvement Act of 1991, to Senators Ray Albright and Andy Womack and Representatives Eugene Davidson and William Purcell, from John G. Morgan, Ethel Detch, Wynetta Lee, Harry A. Green, and Virginia Gregory, April 12, 1991, pp. 2, 19.

[12] Tennessee Department of Education, *Basic Education Program: Education Funding in Tennessee*, no date, pp. 3, 6. Performance accountability is discussed in a later section and described in TCA §§ 49-1-601 and 602.

[13] TCA §49-3-354(b). State law requires LEAs to spend the amount generated for school nurses on health-related items. There are additional restrictions on the use of non-salary dollars for salaries and the use of classroom component funds for nonclassroom expenditures.

In conjunction with increased funding flexibility, the EIA established new accountability measures for school performance. The act set broad performance goals for attendance, dropout rates, and standardized test scores. It also gave the Board and the Commissioner of Education the authority to place LEAs and schools failing to meet performance standards on probation, after one year "on notice." Superintendents and local board members of districts failing to meet performance standards for two consecutive probationary years face removal by the state.[14] The Board, the Department, and the Office of Education Accountability began implementing this performance accountability provision in the 2001-02 school year, in which 98 schools in 11 school systems were placed on notice of probation for low academic performance.

Defining "Basic"

When discussing what schools should provide, people sometimes compare the dollars generated by the funding formula to some average or current cost of educational goods and services. This method generally is not tied to outcomes, such as academic performance, but rather to specific inputs to the education process, such as the number of books in a library or computers in a school. Because law and rule often define standards for those inputs, policy makers consider the connection between inputs and funding. Moreover, educational inputs often receive greater attention than outcomes because inputs are easier to measure. For a more thorough examination of how dollars generated for BEP components compare to the standards for providing related inputs, see *Part II: An Examination of the BEP Formula*.

Defining "Adequate"

In contrast to a *Basic* funding system focusing on inputs, *Adequacy* refers to a funding system that gives students "access to educational resources and opportunities adequate to achieve desired educational outcomes."[15] The following selections explain the adequacy argument in more detail:

> As spelled out by [legal experts], a state-guaranteed high-minimum is most often what is meant by an "adequate" education…. In funding this high-minimum, the system would specifically take into account the varying needs of different types of pupils. It would also recognize that individual schools (or districts) face differing costs. Beyond those based on differences in the cost of living, the high-minimum approach would probably also recognize that some communities will have to pay more to attract equally good teachers to teach their needier and lower-achieving students. It would probably also recognize the benefit some students gain from having higher-achieving classmates and other intangibles that enable their school to provide a good education, and in turn would somehow compensate for the lack of those

[14] TCA §§ 49-1-601 and 602. [14] With the passage of the 2002 "No Child Left Behind" Act, Tennessee has adapted its accountability requirements to the federal law. Schools must show improvement for two consecutive years to move off notice completely.

[15] Paul A. Minorini and Stephen D. Sugarman, "Educational Adequacy and the Courts: The Promise and Problem of Moving to a New Paradigm," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 176.

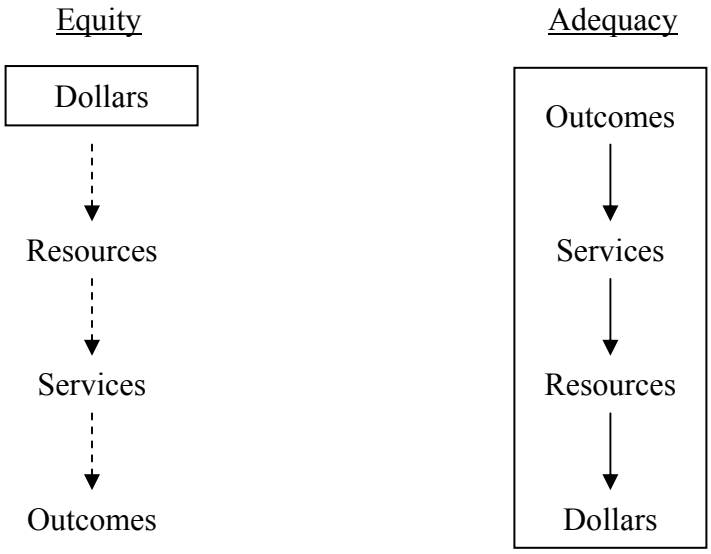
> advantages in other schools. In other words, the high-minimum approach focuses on what would be needed to assure that all children have access to those educational opportunities necessary to gain a level of learning and skills required, say, to obtain a good job in our increasingly technologically complex society and to participate effectively in our ever more complicated political process.[16]

The author explains one key implication of the adequacy argument:

> What is most distinctive about the adequacy approach is that, unlike the traditional school finance cases, it does not rest on a norm of equal treatment. Indeed, the adequacy cases aren't about equality at all, except in the sense that all pupils are equally entitled to at least a high-minimum. In other words, adequacy is not a matter of comparing spending on the complaining group with spending on others. It is rather about spending what is needed (and its focus is in some respects more on the school or the pupil than on the district).[17]

To date, education finance litigation in Tennessee has primarily focused on finance equity, rather than adequacy. As the following diagram illustrates, the term "adequacy" in education finance refers to the link between the state's desired outcomes – its performance goals – and the funds required to meet those outcomes. Equity cases focus almost exclusively on the distribution of dollars, generally without regard for outcomes.

Exhibit 1: Equity versus Adequacy



Source: National Conference of State Legislatures, *Educational Adequacy: Building an Adequate School Finance System*, 1998, p. 25.

[16] *Ibid*., p. 188.
[17] *Ibid*.

Laws and Regulations

The Tennessee Constitution and subsequent court interpretations provide the legal foundation of the state's education system. The General Assembly creates the statutory framework for the state's education system from that foundation, and the Board is responsible for designing rules and policies that follow the statutory framework.

Article XI, Section 12, of the Tennessee Constitution reads:

> The State of Tennessee recognizes the inherent value of education and encourages its support. The General Assembly shall provide for the maintenance, support and eligibility standards of a system of free public schools. The General Assembly may establish and support such postsecondary educational institutions, including public institutions of higher learning, as it determines.

In *Tennessee Small Schools v. McWherter,*[18] referring to the state constitution's education clause, the Tennessee Supreme Court concluded:

> The defendants' argument overlooks the plain meaning of Article XI, Section 12. That provision expressly recognizes the inherent value of education and then requires the General Assembly to "provide for the maintenance, support and eligibility standards of a system of free public schools." The constitution speaks directly to a right of inherent value, education. As used in Article XI, Section 12, the word "education" has a definite meaning and needs no modifiers in order to describe the precise duty imposed upon the legislature. The first definition of "education" in the unabridged edition of The Random House Dictionary of the English Language, 454 (2d ed. 1987) is: "The act or process of imparting or acquiring general knowledge, developing the powers of reasoning and judgment, and generally of preparing oneself or others intellectually for mature life." *Indeed, modifiers would detract from the eloquence and certainty of the constitutional mandate – that the General Assembly shall maintain and support a system of free public schools that provides, at least, the opportunity to acquire general knowledge, develop the powers of reasoning and judgment, and generally prepare students intellectually for a mature life. Contrary to the defendants' assertion, this is an enforceable standard for assessing the educational opportunities provided in the several districts throughout the state.*[19] [emphasis added]

Most recently, in October 2002, the Tennessee Supreme Court ruled against the State's method of funding teachers' salaries and held that the method of calculating salaries "fails to comply with the State's constitutional obligation to formulate and maintain a system of public education that affords a substantially equal educational opportunity to all students."[20] The recent focus on Tennessee's lowest-performing schools, most of

[18] 851 S.W.2d. 139, Tenn. 1993.
[19] 851 S.W.2d. 151.
[20] Tennessee Small School Systems, et al. v. Ned Ray McWherter, et al., No. M2001-01957-SC-R3-CV, Filed October 8, 2002.

which serve large numbers of low-income children, also highlights the need for Tennessee to better define its responsibilities.

At least partly in response to its constitutional obligations, the General Assembly defined the state's education system in state statute.[21] Broadly defining the education system, the law states:

> The system of public education in Tennessee shall be governed in accordance with laws enacted by the general assembly and under policies, standards, and guidelines adopted by the state board of education which are necessary for the proper operation of public education in kindergarten (K) through grade twelve (12). The policies, standards, and guidelines shall be formulated by the state board of education, with such assistance from the commissioner of education as the state board may request.[22]

The EIA linked the requirements of the education system to the funding formula, stating:

> The Tennessee basic education program shall include requirements prescribed by state law, regulations, rules, and other required costs."[23]

The Board of Education is responsible for the BEP, for setting state education policies, and for regulating the implementation of the General Assembly's directives. As such, the Board produces a *Master Plan* each year detailing its goals, strategies, and plans of action for Tennessee K-12 education. Key Result Area 9 focuses specifically on a funding goal for Tennessee: "Tennessee will provide adequate and equitable funding for Tennessee schools."[24] That section of the *Master Plan* describes the BEP:

> The Basic Education Program (BEP) funding formula adopted as part of the EIA provides a rational, stable, and equitable funding mechanism. The state has achieved full funding of the BEP, an increase from $1.2 billion in FY 92 to $2.3 billion in FY 2001. The BEP formula has improved funding equity over the last eight years. *However, the BEP does not address several policy changes that have affected Tennessee's educational system and consequently, its funding needs.* [emphasis added]

Three of the six strategies in the *Master Plan* are particularly relevant to the formula's adequacy:[25]

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[21] Statutory requirements for specific components of education, such as those regarding school nurses or minimum class sizes, and specific performance standards are addressed in *Part II: An Examination of the BEP Formula*. This section and the subsequent one deal with broader statutory descriptions of the mission of the education system as well as with general establishment of standards and accountability for schools, since it is the intent of this report to discuss the needs of the schools in meeting those goals and standards.
[22] TCA § 49-1-102(a).
[23] TCA § 49-3-351(a).
[24] State Board of Education, *Master Plan for Tennessee Schools: Preparing for the 21st Century*, 2001, p. 13.
[25] *Ibid*.

a. Master Plan, Key Result Area 9, Strategy 1: "Maintain full funding of the BEP formula to provide all schools with essential components including personnel, technology, textbooks, materials, transportation and capital expenditures."

b. Master Plan, Key Result Area 9, Strategy 3: "Review the BEP formula regarding component costs and standards of adequacy, equity, and fairness, in other areas of the BEP, such as high poverty schools, systems experiencing high enrollment growth, and capital outlay. Determine and provide for costs of additional mandated initiatives."

c. Master Plan, Key Result Area 9, Strategy 5: "Develop a plan to address the issues of salary equity and adequacy in concert with plans to address needed BEP components."

In addition to defining a new funding mechanism, which passed along with a sales tax increase and a legislative commitment to reach and maintain full formula funding, the EIA included accountability provisions as well.

Legislative and Regulatory Performance Standards

A number of Tennessee's performance goals might serve as standards to determine the adequacy of the education finance system. Possible standards include the State Board of Education *Master Plan*; the Board's performance model and Tennessee's on-notice criteria derived from that model; exams required for a high school diploma; and higher education entrance requirements.

State Board of Education Master Plan

The *Master Plan* does not outline an "adequate" education system *per se* but presents a list of priority improvements to the education system considered necessary to achieve the Board's goals for Tennessee schools, which include performance goals. Because those improvements are tied to a long-term vision for the state's education system, that document may present a set of feasible steps toward adequacy.

On-notice standard

In September 2001, the Commissioner of Education placed 98 schools "on notice" of possible probation for low performance. Appendix 2 describes these criteria for grades K-8 and for grades 9-12. The Board approved the performance model on which the on-notice standard is based.

State law clearly defines performance goals for school districts and schools:

> The goal is for all school districts to have mean gain for each measurable academic subject within each grade greater than or equal to the gain of the national norms. If school districts do not have mean rates of gain equal to or greater than the national norms based upon the Tennessee comprehensive assessment program (TCAP) tests (or tests which measure academic performance

which are deemed appropriate), each school district is expected to make statistically significant progress toward that goal.[26]

Furthermore, the law states: "All schools within all school districts are expected to maintain appropriate levels of school attendance and dropout rates. The 1991-1992 school year is the base year for measuring levels of attendance and dropout rates. Schools which do not maintain appropriate levels, as set by the state board on the recommendation of the commissioner, may be placed on probation, as provided in §49-1-602."[27]

Exams required for a high school diploma

The EIA includes test-focused graduation requirements. Beginning with the 1994-95 incoming freshman class, students were required to pass the TCAP competency tests in Mathematics and Language Arts to get a full diploma. Otherwise they receive a certificate of attendance. Beginning with the 2001-02 incoming freshman class, three Gateway tests in Algebra I, Biology, and English II replaced the competency tests as requirements for a high school diploma. Seven other subject matter tests are in various stages of development. All students also have the opportunity to take an "exit examination," as defined by the Board, though it is no longer mandatory and there is no passing standard for this requirement.[28]

Competency: The Department has now replaced the Competency Exam with the Gateway Exams. However, the competency exams were an indicator of how students have performed relative to state standards. In 2000-01, 60 percent of 9th-grade students passed both the Mathematics and Language Arts competency tests (66 percent excluding special education students). Although the Department does not monitor the number of students receiving a certificate of attendance as a result of competency exam failure, estimates from available data suggest that of those students in the 12th grade taking the tests in 2000-01, approximately 4.6 percent of regular education students and 8.8 percent of all students (including special education) failed one or both of the exams.[29]

Gateway: The Gateway tests measure student mastery of high school content standards in mathematics, science, and English. Tennessee students must pass these tests as part of the requirements for earning a regular high school diploma, beginning with incoming

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[26] TCA §§ 49-1-601(a) and 49-1-601(b). Subsection (b) further states: "If national norms are not available, then the levels of expected gain will be set upon the recommendation of the commissioner with the approval of the state board." The Tennessee Comprehensive Assessment Program is Tennessee's testing plan and includes the following assessments: the *achievement test* (given to grades 3-8 in language arts, mathematics, science and social studies), the *writing test* (given to students in grades 4, 7, and 11), the *competency test* (however, this test is being phased out in fall 2001), and *high school end-of course tests*, three of which have been designated as *Gateway tests* (Algebra I, English II, and Biology) that students must pass to receive a diploma. The TCAP achievement test is used as one criteria for placing K-8 schools on notice as part of the state's school accountability program.

[27] TCA § 49-1-601(d).

[28] TCA § 49-6-6001.

[29] Data are from the Tennessee Department of Education. Estimated percentages were computed by Office of Education Accountability staff. Of those failing the competency exams, 48 percent were identified as receiving some special education services.

high school freshmen in 2001-02 who will graduate in 2004-05. Local education agencies began administering two (Algebra I and Biology I) in the 2001-02 school year. Students took the English II test as well during the 2002-03 school year.

In 2001-02, over 77 percent of Tennessee students met the proficient standard on the Algebra I Gateway exam; over 94 percent attained proficiency on the Biology I exam. However performance on the tests varied among student groups. Among racial groups, white students and those Asian or Pacific island descent had proficiency rates above the state average. All other racial groups fell below the state average. Special education students, English language Learners, and migrant students were also much less likely to attain proficiency than other students.[30]

Exit Exams (ACT): Over 44,000 Tennessee students (79 percent of all graduating seniors) took the ACT in 2002. Tennessee's average score, 20.0, fell below both the national average (21.0) and the average of the states in which at least two-thirds of graduating seniors take the ACT (20.8). Only four states had a larger percentage of graduating seniors take the ACT in 2002, likely due, in part, to TCA §49-6-6001, which until July 2002 required seniors to take an exit examination.[31] The large number of students taking the ACT in Tennessee could artificially lower the state's average score if many of those students did not intend to attend college. However, 63.5 percent of students taking the ACT in Tennessee in 2002 completed a core curriculum in high school, higher than the national average of 58 percent. Thus, it seems likely that factors other than the statutory exit examination requirement are responsible for Tennessee's lower average ACT score.

Like Gateway data, ACT data provide useful insight into the adequacy of Tennessee's education system because the distribution of ACT scores among different income and ethnic groups is relevant to the primary focus of the adequacy argument. In other words, adequate implies that different resources may be necessary to provide all students with some threshold level of opportunity. In 2002, average ACT scores for families in every income group measured were higher than those in lower income groups. At lower income levels, an increase of $1,000 in household income is associated with an increase in ACT score of 0.13 points.[32]Similarly, average scores varied by ethnic groups, with African-American students scoring lower (16.4) than any other group, followed by Mexican-American and Hispanic students (18.8). Caucasian students had the highest average scores (20.9) in Tennessee. Thus, based on ACT data, it appears some subsets of the student population are not attaining the same outcomes as other groups. Exhibit 11d in Appendix 3 shows the distribution of Tennessee students' ACT scores in 2002, and Exhibit 11e lists states in which at least two-thirds of students take the ACT.

[30] Appendix 3 shows statewide Gateway test results for 2001-02.
[31] Public Chapter 738 of 2002 requires that the exit examinations be optional rather than mandatory.
[32] Office of Education Accountability analysis of ACT data provided by the Tennessee Higher Education Commission.

Tennessee higher education entrance requirements

Both the University of Tennessee and Tennessee Board of Regents admissions requirements include the 14 basic high school courses outlined in State Board of Education rules.[33] In addition to this core set of courses, campuses within these university systems set minimum ACT score and grade point average standards for admission of graduating high school seniors. Appendix 1 presents these standards for nine Tennessee four-year universities.

The previous section (regarding exit exams) summarizes relevant ACT score distributions, national comparisons, and some mitigating factors to consider when discussing ACT scores. Because a student's grade point average is a relative measure that varies by school and the distribution of students in the school, it is not a comparable measure of performance across schools or districts.

A cautionary note

The goals of public education are many, and over the decades policy makers have layered curricular and other changes on the manifold expectations of schools. These goals extend far beyond "reading, 'riting, and 'rithmetic." Schools keep children out of the workforce while training them to one day be productive workers. In recent years, schools have taken on the role of familiarizing students with emerging technology. Schools are vehicles for public health programs, requiring immunizations and teaching about the consequences of sexual behaviors. Schools teach social skills, cultural literacy, patriotism, and civic participation. They are "building blocks of democracy"; "they pass on knowledge, skills, and values that not only prepare the nation's children for productive lives and careers, but also prepare them to be active, informed citizens in a democratic polity."[34] Thomas Jefferson summed up the myriad goals of elementary schooling:

> To give every citizen the information he needs for the transaction of his own business;
> To enable him to calculate for himself, and to express and preserve his ideas, his contracts and accounts, in writing;
> To improve, by reading, his morals and faculties;
> To understand his duties to his neighbors and his country, and to discharge with competence the functions confided to him by either;
> To know his rights; to exercise with order and justice those he retains, to choose with discretion the fiduciary of those he delegates; and to notice their conduct with diligence, with candor, and judgment;

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[33] Rule 0520-1-3-.05(6). The 14 courses include: four units of English, three units of Mathematics, two units of Natural/Physical Sciences, one unit of U.S. History, one unit of Social Studies, two units of Foreign Languages, and one unit of Visual/Performing Arts.

[34] Terry M. Moe, "The Two Democratic Purposes of Public Education," *Rediscovering the Democratic Purposes of Education*, (eds.) Lorraine M. McDonnell, P. Michael Timpane, and Roger Benjamin (Lawrence, KS: University Press of Kansas, 2000), p. 127.

> And in general, to observe with intelligence and faithfulness all the social relations under which he shall be placed.[35]

Because of the variety of expectations on schools, "the public schools are agencies of democratic government…."

> Everything about them, from goals to structure to operations, is a legitimate matter for decision by their democratic superiors and subject to influence by the political processes that determine who those superiors are and how they exercise their public authority.[36]

In recent years, the growing accountability movement has focused on test performance as the predominant measure of public school success. Although measuring schools' contributions to their students' patriotism, workforce productivity, social skills, or healthful behavior is difficult at best, Tennessee has, to some degree, charged schools with improving all of these as well as test scores. Furthermore, just as performance on tests is not the sole measure of school success, appropriate investments outside of schools can impact school children. Within the education system, the quality of higher education both impacts schools (e.g., through teacher training) and is impacted by schools (e.g., through the quality of students the higher education system inherits). Other social services such as health care, childcare, and job training also affect the ability of students to learn.

Analysis and Conclusions

The BEP formula is based primarily on inputs required for K-12 education rather than outcomes expected. Funding adequacy means directly linking dollars to educational outcomes as opposed to merely defining one basic "tool box" of educational goods and services. The English Language Learner and K-3 at-risk components of the formula are examples of adequacy-driven funding because they reflect the needs of particular populations. However, the BEP generally emphasizes equity in resources provided to students across LEAs, not equal opportunity for students to achieve performance standards.

Tennessee has not clearly defined a "basic" education. Although the Supreme Court's *Small Schools* decision and Tennessee's education statutes describe requirements and goals of public education, neither explicitly defines the minimum state responsibility or the meaning of "basic" in the Basic Education Program. The BEP components are, by definition, the statutory components of a basic education, but the level of funding linked to each component may not fully fund the cost of providing it. The law requires the funding formula to "include" statutory and regulatory standards, but does not specify the

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[35] Quoted in Lorraine Smith Pangle and Thomas L. Pangle, "What the American Founders Have to Teach Us About Schooling for Democratic Citizenship," (eds.) Lorraine M. McDonnell, P. Michael Timpane, and Roger Benjamin (Lawrence, KS: University Press of Kansas, 2000), p. 25.

[36] Terry M. Moe, "The Two Democratic Purposes of Public Education," *Rediscovering the Democratic Purposes of Education*, (eds.) Lorraine M. McDonnell, P. Michael Timpane, and Roger Benjamin (Lawrence, KS: University Press of Kansas, 2000), p. 127.

extent to which the formula should fund those standards. Responses to a 2001 Office of Education Accountability survey of superintendents indicated a broad range of interpretations of the term "basic," including: "minimal"; "the minimum standards of education prescribed by state law" or based on "minimum rules and regulations"; "compared to a national average"; "adequate"; "fund all mandates"; "funds to support a functional level of total operation for a generic system"; and "just what it takes to get by."

Because the state has not determined what standards should be used to measure adequacy, it is difficult to assess whether the BEP funds an adequate education. Evaluating the adequacy of the BEP requires a measurable standard for what constitutes "access to educational resources and opportunities adequate to achieve desired educational outcomes."[37] In the section entitled "Legislative and Regulatory Performance Standards," this report outlines the various standards in law, regulation, and policy regarding performance standards for Tennessee schools and students. If test performance is the primary means of measuring schools' achievement of the state's educational goals, then what is the standard by which to gauge these performance measures to determine whether "adequacy" has been achieved? For example, how many students in a school or an LEA may fail a Gateway exam, or what percent of the schools in a system may be put on notice of probation for a system to be judged "inadequate"?

Some possible standards include:

- the percentage of students in each school reaching one or multiple performance targets;
- the percentage of students in each LEA reaching one or multiple performance targets; and
- the percentage of students in various student groups (e.g., social or economic conditions) reaching one or multiple performance targets.

Once an adequacy standard (or standards) is defined, several approaches may be used to determine the resources necessary to reach it. Education researchers have generally identified four methods of determining an adequate level of funding.[38] These are:

- **Professional judgment**—The BEP was primarily developed through this approach, and the BEP Review Committee continues to operate on this principle, though Tennessee has not linked this judgment to a specific set of outcomes. This approach relies on educators and other experts to "construct an ideal-type delivery system….

[37] Paul A. Minorini and Stephen D. Sugarman, "Educational Adequacy and the Courts: The Promise and Problem of Moving to a New Paradigm," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 176.

[38] "From Equity to Adequacy," West Ed policy brief, July 2000; John Augenblick, "Alternative Ways to Determine an Adequate Level of Support for Public Schools in a State," presentation to National Conference of State Legislatures, August 14, 2001;

The components of such a system can then be identified and costs assigned to them."[39]

- **Successful school or successful school district**—Identify those schools or LEAs performing at the desired level and the resources employed in them, taking into account non-school (e.g., socioeconomic) factors that influence performance. "The underlying assumption is that any district should be able to accomplish what some districts do accomplish."[40]

- **School reform models**—Identify components necessary to raise student performance to state standards based on pre-designed programs that have demonstrated success and fund those components.[41]

- **Statistical estimation**—Build a statistical model that reflects the many factors influencing student performance to estimate the cost of reaching performance goals in different schools.[42]

States that have implemented adequacy-driven funding programs have relied on one or more of these methods. Wyoming used the professional judgment approach; Ohio used a successful school district model. Maryland used both the professional judgment model and the successful school model. No states have used school reform models or statistical estimation as the primary method of determining an adequate level of funding, though several have used statistical estimation to determine adjustments for socioeconomic factors and to verify results from the first two methods.

Because adequacy implies helping all students reach a certain performance level regardless of student characteristics, an adequate finance system would likely focus resources or reforms on subsets of the student population. Credible studies relating financial resources to student performance broadly argue: how money is spent determines the impact that money has on outcomes.[43] For example, the recent RAND analysis of the link between NAEP[44] test scores and resources emphasizes the effectiveness of policies targeting students of low socioeconomic status (SES). An adequate finance system is

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[39] James W. Guthrie and Richard Rothstein, "Enabling 'Adequacy' to Achieve Reality: Translating Adequacy into State School Finance Distribution Arrangements," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 228.

[40] *Ibid*., p. 224, quoting from John Augenblick, *Recommendations for a Base Figure and Pupil-Weighted Adjustments to the Base Figure for Use in a New School Finance System in Ohio*, Report to the School Funding Task Force, Ohio Department of Education, 1997.

[41] WestEd Policy Brief, "School Funding: From Equity to Adequacy," July 2000; John Augenblick, "Alternative Ways to Determine an Adequate Level of Support for Public Schools in a State," Presentation to National Conference of State Legislatures, August 14, 2001.

[42] Ibid.

[43] For examples, see: Richard Rothstein and Karen Hawley Miles, *Where's the Money Gone?: Changes in the Level and Composition of Education Spending* (Washington, D.C.: Economic Policy Institute, 1995); L. V. Hedges, R. D. Laine, and R. Greenwald, "Does money matter?: A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes," *Educational Researcher*, 1994, pp. 5-14.

[44] NAEP is the National Assessment of Education Progress.

likely to provide disproportionate resources to a subset of students because test scores and other educational outcomes tend to be closely correlated with socioeconomic status and other factors. For example, over 75 percent of students in the majority of the 98 schools placed on notice in 2001-02 received free and reduced-price meals.[45]

The RAND study finds:

> The results imply that resources in public education must be allocated to specific programs and grade levels and toward specific students to be most effective and cost-effective. The cost-effectiveness of resource expenditures can change by more than a factor of 25, depending on which programs and grade levels are funded and which types of students are targeted. The analysis shows that providing all K-8 teachers additional resources, expanding pre-kindergarten in low-SES states, reducing pupil-teacher ratios in lower grades in lower-SES states to well below the national average, and reducing pupil-teacher ratio in medium-SES states to the national average are most efficient. This analysis suggests that significant gains in achievement for students in lower-SES states can be achieved through modest increases in resources. Conservative estimates show predicted score gains of 12 to 15 percentile points from additional targeted expenditures of less than $1,000 a pupil in the states with the lowest SES.[46]

The BEP does not include some components that may help achieve adequacy. These include:

- **pre-kindergarten programs;**
- **additional, targeted class-size reduction; and**
- **quality professional development.**

Pre-kindergarten programs

A recent briefing paper jointly written by the Office of Education Accountability and the Tennessee Advisory Commission on Intergovernmental Relations concluded:

> Several studies indicate that pre-kindergarten programs have a significant positive effect on children's future school performance and other life experiences, particularly those children who are "at-risk" of failure because of poverty or other circumstances.[47]

The paper cited research showing that pre-kindergarten programs appear to produce lower juvenile delinquency rates, lower incidence of special education placement, lower retention rates, short-term increases in intelligence quotients, and long-term increases in

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[45] Data are from the 2001 Report Cards for the 98 on-notice schools. The numbers for high schools tend to be lower because of the reluctance of high school students to identify themselves as needing free or reduced price lunch.

[46] David Grissmer, Ann Flanagan, Jennifer Kawata, and Stephanie Williamson, *Improving Student Achievement: What NAEP Test Scores Tell Us*, (Santa Monica, CA: RAND, 2000), pp. 100-101. "SES" stands for socioeconomic status.

[47] *Why Pre-K?: A Legislative Staff Briefing Paper*, Office of Education Accountability and Tennessee Advisory Commission on Intergovernmental Relations, March 2001, p. 2.

achievement.[48] The Southern Regional Education Board summarized the findings of pre-kindergarten program evaluations in other states over the last 40 years, concluding that high-quality pre-kindergarten programs could increase school readiness and standardized test scores and reduce students' chances of repeating grades, being referred to special education services, and dropping out of high school.[49] One study of a pre-kindergarten program followed participants and non-participants from ages three or four to age 27. Those that had received the pre-kindergarten program had higher literacy levels, higher monthly earnings, higher percentages of home ownership, higher level of schooling completed, lower percentages receiving social services, fewer arrests, and fewer births to single mothers. Analysis of the results estimated more than a sevenfold return for dollars spent on this pre-kindergarten program.[50]

The Board revised its policy for early childhood programs in 2000,[51] and Board rules governing LEAs' early childhood programs reference this policy.[52] The program guidelines set out in the Board's policy require a maximum class size of ten children per adult (eight if more than half are three-year olds), with at least one certified teacher per 20 children. The guidelines also require parent involvement and family services counselors (one per 60 children) and personnel to provide transportation, health and nutrition services, and other services for disabled children. Programs should provide at least five and one-half hours per day of developmentally appropriate class time.

In 2002, state-funded early childhood programs served about 3,000 children. Some local school systems provide additional services using a mixture of funding sources, and the federal Head Start program serves about 15,000 eligible children in Tennessee. The Department of Education estimates that another 20,000 at-risk four-year-olds in the state need access to early childhood education, at an estimated cost of $100 million.[53]

Class-size reduction

Research has demonstrated that class size reduction improves students' academic performance as well as their future socioeconomic conditions, in particular when the reduction targets early grades and at-risk populations.[54] For example, RAND estimated

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[48] *Ibid*., drawing from chapters in *The Future of Children*, Vol. 5, No. 3 (Winter 1995).

[49] David R. Denton, *Improving Children's Readiness for School: Preschool Programs Make a Difference, But Quality Counts!*, Southern Regional Education Board, 2001.

[50] L. J. Schweinhart, H. V. Barnes, and D. P. Weikart, *Significant Benefits: The High/Scope Perry Preschool Study through Age 27*, (Ypsilanti: High/Scope Press, 1993). Information taken from a summary of the study's findings at http://www.highscope.org/research/Fact%20Sheets/Perry%20fact%20sheet.pdf (accessed January 4, 2002).

[51] http://www.state.tn.us/sbe/earlychild.htm (accessed January 4, 2002). The Board's early childhood education policy was originally developed in 1991.

[52] Rule 0520-1-3-.05(5). The Board's authority with regard to pre-kindergarten programs is addressed in TCA 49-6-101.

[53] "Early Childhood Education Implementation Plan," presented to the Lottery Education Task Force, February 2003, by Jan Bushing, Tennessee Department of Education.

[54] Julie Davis Bell, "Smaller = Better?," *State Legislatures*, June 1998; Jeremy D. Finn, "Class Size and Students at Risk: What is Known? What is Next?," National Institute on the Education of At-Risk Students, Office of Educational Research and Improvement, U.S. Department of Education, April 1998; David Grissmer, "Conclusion – Class Size Effects: Assessing the Evidence, Its Policy Implications, and Future Research Agenda," *Education Evaluation and Policy Analysis*, Summer 1999; Alan B. Krueger and Diane

that a dollar invested in class-size reduction is three times as effective at improving NAEP scores for students of "low socioeconomic status" as it is for students of "medium socioeconomic status" and seven times as effective as for students of "high socioeconomic status."[55] Tennessee's Project Star and Wisconsin's SAGE project, class size experiments, both revealed significant positive benefits of class size reduction.[56]

The BEP's at-risk component funds reduced class sizes for some at-risk students, though as with other components, state law does not require that funds generated for class size reduction be used for that purpose. The BEP generally funds one teacher for every 20 students in grades K-3, but funds one teacher for every 15 students for one-third of students eligible for free and reduced-price meals in grades K-3. The cost to the state of funding that reduced class size ratio in the 2001-02 BEP model for all K-3 students eligible for free and reduced price lunches would have been $35,784,000. The cost of reducing class size ratios by 25 percent for all students receiving free and reduced-price meals in grades K-12 would have been $144,727,000 in the 2001-02 BEP model.

Professional development

Professional development needs permeate nearly every aspect of education, particularly in a changing society and educational system. Teachers in Tennessee, as in many other states, face the challenges of integrating and educating growing ELL and special education populations, addressing the needs of at-risk populations, responding to changes in education law and policy, and incorporating new and varied technologies into their classroom practices. According to the National Conference of State Legislatures:

> Educators and policymakers are realizing that the success of virtually all education reforms – the infusion of technology into the classroom, the implementation of state standards, class size reduction, etc. – hinges on the skill and knowledge of classroom teachers. And while teacher recruitment and preparation policies can help states begin training new educators, only ongoing teacher learning through professional development can make current teachers aware of changing expectations and newly-validated, effective teaching methods.[57]

Evidence collected in recent years illustrates the connection between high-quality professional development and improved student results. Authors of a 1998 Consortium for Policy Research in Education brief entitled *State Policy and Classroom Performance:*

M. Whitmore, "The Effect of Attending a Small Class in the Early Grades on College Test-Taking and Middle School Test Results: Evidence from Project Star," *The Economic Journal*, January 2001; Cecilia Elena Rouse, "School Reform in the 21st Century: The Effect of Class Size and School Vouchers on African-American and Hispanic Students," Princeton University, Industrial Relations Section, Working Paper No. 440, June 2000. For more, see *Educational Evaluation and Policy Analysis*, summer 1999.

[55] David Grissmer, Ann Flanagan, Jennifer Kawata, and Stephanie Williamson, *Improving Student Achievement: What NAEP Test Scores Tell Us*, (Santa Monica, CA: RAND, 2000).

[56] In addition to the articles listed above, see Ivor Pritchard, "Reducing Class Size: What Do We Know?," National Institute on Student Achievement, Curriculum and Assessment, Office of Educational Research and Improvement, U.S. Department of Education, March 1999.

[57] Eric Hirsch and Stephanie Hirsh, National Conference of State Legislatures, http://www.ncsl.org/programs/educ/TProDev.htm (accessed November 2, 2001).

Mathematics Report in California found that teachers who participated in mathematics professional development that was sustained and based on specific curriculum standards for students were more likely to adopt new, reform-oriented teaching practices. Students of teachers who received such professional development achieved at significantly higher levels on the state mathematics achievement test across all grades.[58]

The National Commission on Teaching and America's Future recommends that state and LEAs devote at least one percent of total expenditures "to high-quality professional development organized around standards for student learning and for accomplished teaching practice." The Commission also recommended that states provide matching funds for LEAs to increase professional development investments to as much as three percent of total expenditures.[59] The Education Commission of the States reported in 1997 that professional development expenditures averaged 1.3 percent of total state K-12 expenditures and 3.6 percent of total LEA expenditures nationwide.[60]

State expenditures for professional development in Tennessee totaled $2,431,200 in 2000-01, but most was for administrators' professional development programs. In 2001-02, the budgeted amount for professional development increased to $6,549,700, primarily targeted at schools placed "on-notice" for low performance in that year.[61] The Department's proposed budget for 2003-04, reflecting cuts requested of all departments, includes a reduction of $200,000 for professional development.[62]

The BEP does not include a professional development component. A BEP professional development component equal to one percent of the total 2001-02 BEP would generate an additional $35.3 million. Assuming such a component was in the "classroom" category, the state cost would be $26.5 million. Other possible approaches would be to: (a) define a "basic" professional development program and price it per instructional position or per student, updating the program cost periodically; or (b) define professional development costs as a percent of instructional salaries.

Possible changes outside the BEP

In addition to adding BEP components, other institutional and governance changes may help achieve adequacy. Whole-school reform models, programs targeting at-risk students, and school choice models are three possible approaches to raising at-risk students' achievement levels.

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[58] National Conference of State Legislatures, *Professional Development Policies and Practices: Frequently Asked Questions, A Primer on Professional Development for Quality Teaching,* December 2002.
[59] National Commission on Teaching & America's Future, *What Matters Most: Teaching for America's Future*, (New York: National Commission on Teaching & America's Future, 1996), p. 84.
[60] Linda Hertert and Mary Fulton, *Investing in Teacher Professional Development*, (Denver, CO: Education Commission of the States, 1997).
[61] Data provided by John Sharp, Tennessee Department of Education, November 8, 2001.
[62] Handout presented by Commissioner Lana Seviers to the Senate Education Committee, March 26. 2003.

Reform models and at-risk programs

In addition to adding BEP components, other institutional and governance changes may help to achieve adequacy. Whole school reform models, programs targeting at-risk students, and models allowing more flexible enrollment are three possible approaches to raising at-risk students' achievement levels.

Some whole school model reforms (or comprehensive school reform), if well-implemented and adequately funded, have raised student achievement. These reform programs often involve integrated efforts among homes, schools, and communities to assist in students' personal and academic development.[63] Prior to selecting a model, schools must engage in a thorough self-study to determine the most appropriate program for their particular needs. Based on the program of choice, schools set goals and develop means to reach those goals. Further, schools must develop and emphasize a central, guiding vision that incorporates all aspects of the school environment.[64] One example is Success for All, which several Tennessee schools have implemented with mixed results.

In *Promising Practices for At-Risk Youth: Blueprints for Success,* the Morrison Institute for Public Policy enumerates several innovative programs designed to raise student achievement, particularly among at-risk populations. The Institute differentiates among rural and urban/suburban programs, holistic and targeted programs, and other measures including staff development and parental involvement improvement. For example, to assist transient students, a district in Arizona offers "welcome rooms," which help ease the transition into new schools. Other model programs run the gamut of before-, after-, and in-school services.[65]

School choice models

In recent years, some policy makers have argued that allowing parents to choose which schools their children attend would do more to promote student performance than simply increasing funding. In 2001, 11 states had statewide open enrollment policies, allowing parents to choose which public school their children attend.[66] As of September 2002, thirty-nine states and the District of Columbia had passed legislation allowing charter schools.[67] Some early research suggests that charter schools may improve academic achievement for some student groups, but many studies have produced inconclusive evidence, largely because charter schools are a recent phenomenon.[68]

Tennessee allows but does not require intradistrict open enrollment. That is, school boards can choose whether or not to consider parent and student wishes in determining

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[63] ERIC Digests, *Whole-School Reform,* ERIC Digest, Number 124, December 1998, p. 1.
[64] ERIC Digests, *Implementing Whole-School Reform,* ERIC Digest, Number 128, July 1999, pp. 1-2.
[65] Judith A. Vandegrift, Andrea Greene, and Rick Heffernon, *Promising Practices for At-Risk Youth: Blueprints for Success, Volume I: Primary Programs,* (Phoenix, Arizona: Morrison Institute for Public Policy, School of Public Affairs, Arizona State University, 1993).
[66] *Education Week*, "Quality Counts 2002 – School Climate," January 10, 2002, p. 84.
[67] Center for Education Reform. http://www.edreform.cin/pubs/chglance.htm., 10/18/02.
[68] Brian Gill, et.al., *Rhetoric vs. Reality: What We Know and What We Need to Know About Vouchers and Charter Schools*, (Santa Monica, CA: RAND, 2001) p. 203.

which schools students attend.[69] Tennessee also allows LEAs to enroll students outside district boundaries in many circumstances but does not have open enrollment.[70]

The recent reauthorization of the Elementary and Secondary Education Act (ESEA) provides a number of incentives to promote public choice models. The act included $300 million to provide "seed" money to start charter schools and $150 million for the Charter School Facility Demonstration Project to encourage state and local governments to find innovative ways of funding charter school construction and infrastructure needs.[71] ESEA requires Title I schools that have not made adequate academic progress for two consecutive years to allow students to transfer to other schools within the district beginning in fall 2002. It also requires the state to make plans for multiple forms of alternative governance beginning in fall 2003. Acceptable options for low-performing schools include:

- reopening as a charter school;
- replacing all or most relevant school staff;
- contracting with private management;
- state take over of school administration; and
- other major restructuring.[72]

Partly in response to the ESEA, Public Chapter 850 of 2002, allowed the creation of charter schools in Tennessee for the first time. The statute limits these charter schools primarily to students in schools not making "adequate yearly progress," as defined by the ESEA, and to other special-needs or at-risk populations.

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[69] TCA §49-6-3103.
[70] TCA §49-6-3104.
[71] The White House, "Fact Sheet—No Child Left Behind Act," January 2002, http://www.whitehouse.gov/news/releases/2002/01/20020108.html (accessed March 6, 2002).
[72] "No State Left Behind: The Challenges and Opportunities of ESEA 2001," Education Commission of the States, March 2002, p. 19.

Part II—An Examination of the BEP Formula

Introduction

In 2001, the Tennessee Comptroller's Office of Education Accountability (OEA) began an evaluation of the state's Basic Education Program (BEP). Adequacy refers to a funding system that gives students "access to educational resources and opportunities adequate to achieve desired educational outcomes."[73] Part I of this report, *Setting and Reaching Standards* addresses the challenges of establishing outcomes-based goals that could be used as a yardstick for measuring adequacy. It also examines some components not currently included in the BEP and institutional and governance changes that may help achieve adequacy.

In contrast to focusing on outcomes, policy makers sometimes discuss adequacy in terms of the dollars generated by the funding formula compared to some average or current cost of educational goods and services without regard to specific outcomes; or dollars generated compared to other school systems. Although an ideal funding formula would tie funding to a set level of outputs, such a formula is difficult to construct. The connections between funding levels and outputs are often difficult to determine, and inputs are generally easier to measure. Laws and rules often define standards for education inputs. Therefore, the Office of Education Accountability also evaluated the connection between these standards and the BEP formula components.

Part II of this report, *An Examination of the BEP Formula* evaluates the extent to which BEP components are funded at a level consistent with the requirements imposed by laws and rules for provision of relevant services. For components without state input standards, the Office of Education Accountability cites other standards or benchmarks based on research, professional associations, and/or expert judgment.

Methodology

The conclusions and recommendations included in Part II are based on:

- a review of relevant state laws;
- a review of relevant State Board of Education rules and policies;
- a review of the findings of a BEP Review Committee subcommittee formed in 2000 to examine many BEP components;
- interviews with state and local government officials, academic experts, and various stakeholders – different representatives of the "education community," including teachers, superintendents, school boards, state agencies, and researchers;
- a survey of Tennessee directors of schools; and
- a review of relevant publications and Internet sites.

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[73] Paul A. Minorini and Stephen D. Sugarman, "Educational Adequacy and the Courts: The Promise and Problem of Moving to a New Paradigm," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 176.

Part II of this report does not address all BEP components. Given resource and time constraints, staff chose to focus on components

- interviewees or primary literature cited as problematic; and
- for which the office could obtain information and relevant standards of measurement.

The following components of the BEP[74] were **not** mentioned by interviewees or in primary documents as problematic. Appendix 5 includes a copy of the "blue book," an annual Board of Education publication describing BEP components.

1. Benefit and Insurance Rates
2. Regular, Vocational, and Special Education Instructional Equipment
3. Regular, Vocational, and Special Education Instructional Supplies
4. Non-instructional Equipment
5. Regular, Vocational, and Special Education Travel Costs
6. Duty-Free Lunch
7. Maintenance and Operations
8. Art, Music, and Physical Education Teachers
9. Elementary and Secondary Guidance Counselors
10. Social Workers and Psychologists
11. Vocational and Special Education Supervisors
12. Special Education Assessment Personnel
13. Librarians
14. Instructional Assistants
15. Principals
16. Assistant Principals
17. System-wide Instructional Supervisors
18. School Secretaries
19. System Secretaries
20. Custodians
21. Textbooks
22. Regular, Vocational, and Special Education Travel

In addition, some interviewees considered the following components to be insufficient or otherwise in need of examination, but Office of Education Accountability staff did not analyze them, for lack of sufficient information or a relevant measurement standard:

1. Special Education Case Load[75]
2. Special Education Assistants
3. Substitute Teachers

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[74] "Components" here refers to the 42 items of the BEP model detailed in the State Board of Education's "blue book" listed in Appendix 2.

[75] The Board and the BEP Review Committee both have recently considered this issue in response to Public Chapter 374 of 2001, which directed the Board to "…establish class size standards and case load standards for instructional personnel and teachers …. In addition to case load requirements, these standards shall address class size in all classrooms that include students with disabilities and students eligible for special education services." In response to the public chapter, the Board developed a policy setting the minimum caseload and class size standard.

Background

Through the BEP, education officials attempt to determine the costs of various components of public education, such as instructional salaries, classroom equipment, school construction, and student transportation. They then add the costs of these components to compute the BEP's total cost. Each local education agency (LEA) receives a certain level of BEP funding based on the specific characteristics of that school district. For example, an LEA that buses a large number of students over great distances will receive more transportation funding; the BEP generates no transportation funding for an LEA that does not bus students. Most BEP funding is based on adjusted average daily membership (ADM), an average enrollment number weighted by the proportion of the school year each student is enrolled.

Classroom and Nonclassroom Components

The BEP groups components into two broad categories: classroom and nonclassroom components. (Appendix 5 lists BEP classroom and nonclassrom components.) On average, the state funds 75 percent of BEP-generated classroom needs and 50 percent of BEP-generated nonclassroom needs. LEAs must fund the remainder. This report and other sources often refer to these shares of the two component pieces as the "state responsibility" and "local responsibility" for the BEP. State law requires LEAs to appropriate sufficient funds to meet their local responsibility.[76]

Cost Differential Factor

Generally, the BEP assumes uniform costs across the state. However, it adjusts salary components in some LEAs through the cost differential factor (CDF), a county-level wage index.[77] It multiplies the average wage in each of a set of nongovernmental industries by the proportion of the statewide labor force employed in that industry. Counties with above-average wages according to this index receive a "bump," and counties with average or below-average wages do not. The "bump" means that BEP-generated salaries, Tennessee consolidated retirement system contributions, and FICA[78] contributions for LEAs are multiplied by the county cost differential factor. In the 2001-02 BEP, 15 school systems in nine counties[79] received additional formula dollars as a result of the cost adjustment. The adjustments ranged from a low of 0.18 percent in Hamilton County to a high of 21.35 percent in Williamson County. Thus, in general, the BEP funds salaries generated for Williamson County at a level that is 21.35 percent above the BEP-generated level that most (123) school systems receive.

Fiscal Capacity Index

Although the state funds 75 and 50 percent of the total BEP-generated classroom and nonclassroom components, respectively, the state and local shares for individual districts vary considerably. The BEP directs more state funds to LEAs in counties with less ability

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[76] TCA §49-3-356.

[77] TCA §49-3-351(a). The law only requires that the BEP include a "cost of operations adjustment" but does not define the parameters of that adjustment.

[78] This acronym stands for the Federal Insurance Contributions Act, which requires employers to pay social security and hospital insurance (Medicare) taxes.

[79] These are: Anderson, Davidson, Hamilton, Knox, Maury, Roane, Rutherford, Shelby, and Williamson.

to pay through its fiscal capacity index, a measure of county revenue-raising capacity. An LEA in a county with a high fiscal capacity has greater ability to raise revenues through local sources, such as the property tax or the local option sales tax; an LEA in a county with a low fiscal capacity has less ability to raise local revenues. Because of this, the BEP requires districts in counties with higher fiscal capacity relative to their BEP-generated funding to fund a greater portion of BEP-generated dollars. In 2001-02, Davidson County had the state's highest fiscal capacity per ADM with a local responsibility of 41 percent of classroom components and 89 percent of nonclassroom components. Hancock County had the state's lowest fiscal capacity per ADM, with local responsibilities of six percent and 10 percent, respectively. (Appendix 4 explains the fiscal capacity index in greater detail. For more information, see the Tennessee Advisory Commission on Intergovernmental Relations publication, *Fiscal Capacity for Funding K-12 Education*.[80])

Local Flexibility and Accountability

Through the 1992 Education Improvement Act, the General Assembly sought to give LEAs flexibility to use state funds to meet local needs by removing many of the stipulations that had been attached to TFP funding. In most cases the state does not require LEAs to spend money generated for individual components on those components, though it does require LEAs to spend BEP-generated classroom dollars on BEP-determined classroom needs.[81] Thus, local districts could use BEP-generated transportation funding to provide superintendent salaries (both nonclassroom components) or vice versa. They could also use dollars generated for either of these components to provide substitute teachers (a classroom component), but they could not use substitute teacher funding for transportation or maintenance and operations expenses. Other laws, however, such as class size requirements and accountability provisions indirectly cause systems to spend funds in certain ways.

In conjunction with increased funding flexibility, the EIA established new accountability measures for school performance. The act set broad performance goals for attendance, dropout rates, and standardized test scores. It also gave the Board and the Commissioner of Education the authority to place LEAs failing to meet performance standards on probation. After putting schools or systems "on notice" for one year, the commissioner may place schools or systems not making adequate yearly progress on probation. Superintendents and local board members of districts or schools that remain on probation for two consecutive years face removal by the state.[82] Since 1992, the Board and the Department have formalized performance standards and consequences for meeting those standards. In September 2001, the state placed 98 schools on notice for the first time for failing to meet state standards. Following the reauthorization of the ESEA the next January, Tennessee merged its accountability system with federal requirements. In August 2002, the Board placed 63 schools on probationary status.

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[80] Harry A. Green and Lynne Holliday, *Fiscal Capacity for Funding K-12 Education: Fiscal Year 1997-1998*, Tennessee Advisory Commission on Intergovernmental Relations, September 1997.

[81] TCA §49-3-354(b). State law does require LEAs to spend the amount generated for school nurses on health-related items, and there are additional restrictions on the use of non-salary dollars for salaries and on the use of classroom components for nonclassroom expenditures.

[82] TCA §§ 49-1-601 and 602.

Analysis and Conclusions

OEA staff examined a number of BEP components or processes based on the following:

a. How does the BEP fund them, and how does that compare to state standards for those services and/or to actual LEA spending on those components?
b. What are shortcomings of or concerns with particular components?
c. How might the components be adjusted to respond to those concerns? What models or standards for service provision may guide any such adjustments?
d. Where estimates are feasible, what are the fiscal impacts of such adjustments?

The following section addresses several components in detail: fiscal capacity, the cost differential factor, class sizes, instructional salaries, superintendents, school nurses, alternative schools, at-risk class sizes, technology and technology coordinators, transportation, and capital outlay.

Oversight and Review of the BEP

The BEP estimates and distributions need ongoing analysis and verification. *Tennessee Code Annotated.* §49-1-302(4) states that it is the State Board's duty "to develop and adopt policies, formulas, and guidelines for the fair and equitable distribution and use of public funds among public schools…and to regulate expenditures of state appropriations for public education, kindergarten(K) through grade twelve (12)…" In addition, State Rule 0520-1-2-.13(2)(d) requires the State Board of Education to approve the estimated annual BEP allocations for each school system.

Although the Comptroller's Office and others continue to regularly audit and analyze expenditures, the BEP formula itself is based on many sources of data and includes hundreds of calculations that ultimately determine allocations to school systems. In the BEP's early years, the State Board served as a check on the assumptions and calculations of the formula. However, in 1997, the State Board was reorganized, lost several positions, and no longer had a staff person to monitor the BEP. Although the board annually approves the BEP estimates, it is often on a consent calendar with little or no analysis or questioning.

Comparing BEP-generated dollars for each component to LEAs' expenditures for that component is insufficient to determine whether the component is funded at a "basic" level. Actual LEA spending on various education components varies based on local priorities, choices, and fiscal constraints. In some cases, LEAs may spend well above or below what most policymakers would consider a "basic" level. Therefore, the Office of Education Accountability (where possible) estimated the cost of reaching legislative or regulatory standards for provision of specific services. In some instances, actual LEA spending on specific items is considered, but only as one factor in assessing the sufficiency of resources.

Fiscal Capacity Index

The fiscal capacity index is the primary equalization instrument in the BEP. It is a statistical estimate of a county's relative revenue-raising ability.

The fiscal capacity index estimates county-level fiscal capacity while the BEP allocates funds at the LEA level, resulting in funding inequities among LEAs within multi-LEA counties. Among LEAs within the same county, the ability to raise local revenue through property and sales taxes may vary considerably. The Tennessee Advisory Commission on Intergovernmental Relations (TACIR) estimates fiscal capacity only at the county level, masking these variations. As a result, some LEAs receive a disproportionately high level of state support, and others receive a disproportionately low level. More LEA-level data are now available, and it may be possible to develop an LEA-level fiscal capacity index using the same methodology and similar variables. Implementing an LEA-level index would not affect the BEP's total cost, nor would the state cost change. However, an LEA-level index would cause a redistribution of state dollars and local shares of the BEP either among LEAs within a multi-LEA county or among all LEAs statewide. TACIR has examined various ways to determine fiscal capacity at the LEA level and is refining a prototype LEA-level fiscal capacity model.

The fiscal capacity index may at least partially "double-count" the effects of differing educational service burdens borne by counties. One factor in the BEP's statistical estimation of fiscal capacity is the number of students per capita in the county. Taxpayers in counties with relatively high numbers of students must spend more on educational services than those in counties with relatively low numbers of students. This factor was included in the model to represent differences in educational service burdens. However, the BEP accounts in other ways for differences in the education services school systems must provide. The formula generates dollars for most components based on the number of students in a system, and some components (K-3 at risk, ELL, special education) provide additional dollars based on the number of students with particular needs. Thus, it may be redundant to include the number of students in the county as part of the fiscal capacity estimation. Removing the students per capita variable from the statistical estimation of fiscal capacity would tend to shift local responsibility for the BEP away from the larger LEAs.

The fiscal capacity index does not account for differing non-education service burdens of local governments. Education is only one service provided by local governments. Some economists have argued that certain local governments, usually large municipalities, must provide a disproportionate level of public services, such as safety, health, and transportation. These service demands may result from a number of factors, including population density, crime rates, poverty, and nonresident labor and commerce. These factors create a "municipal overburden," for which the local government must pay, leaving less revenue to fund local schools, even though the municipality may have greater revenue-raising capacity than other local governments. For example, a local government with a high crime rate likely must spend more for police than one with less crime.

Although municipal overburden is intuitively appealing, alternative arguments about rural service costs, as well as the effects of other state and federal support to stressed urban

areas, raise questions about the validity of the municipal overburden argument.[83] However, general local service burdens may need to be addressed in the measure of local fiscal capacity.

Two factors, one technical and the other political, complicate any reformulation of the fiscal capacity index to account for municipal overburden. First, data are limited. Particularly at the sub-county (i.e., LEA) level, developing a database that accurately reflects a local entity's ability to raise revenue and demands for school and nonschool services is at best difficult. Second, any changes to the model will result in a redistribution of local BEP responsibility.

Cost Differential Factor

The cost differential factor (CDF) is an adjustment for above-average personnel costs in a county.

The purpose of the cost differential factor is not clearly defined or understood, hampering evaluation of its appropriateness. TCA §49-3-351(a) states: "The formula shall also include increased funding for inclusion of a capital outlay component and cost of operations adjustments." However, state law does not define either the purpose or the means of calculating the cost differential factor. An analysis of the BEP by the Center for Business and Economic Research at the University of Tennessee, Knoxville, which calculates the cost differential factor each year, noted:

> Evaluation of the methodology is complicated by the fact that there appears to be uncertainty over what the CDF is intended to accomplish. One argument is that the CDF is intended to provide additional funding to assist LEAs that confront above-average wages in their local markets. Another argument is that the CDF is expected to account for municipal overburden, which is additional, non-education expenditure demands that urban areas bear.[84]

A specific definition of the purpose of the CDF might affect the structure of the existing wage index or lead to a different (i.e., non-wage) measure altogether. For example, the Tennessee Advisory Commission on Intergovernmental Relations outlined a number of alternative cost measures in at least two of its publications.[85] In addition to wages, other measures may be based on the prices of various goods and services that schools purchase,

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[83] For more information, see Harvey E. Brazer and Therese A. McCarty, "Municipal Overburden: A Fact in School Finance Litigation?" *Journal of Law & Education*, Fall 1989; Harvey E. Brazer and Therese A. McCarty, "Municipal Overburden: an Empirical Analysis," *Economics of Education Review*, 1986.
[84] William F. Fox, Matthew N. Murray, and Patricia A. Price, *Analysis of the Basic Education Formula: Evaluation of Its Stability, Equity, and Adequacy* (February 1997), p. 8.
[85] Tennessee Advisory Commission on Intergovernmental Relations, *Cost-of-Living Differentials in Tennessee*, Information Report, February 1991; Tennessee Advisory Commission on Intergovernmental Relations, *The True Cost of Education in Tennessee: Alternative Geographic Cost Adjustment Measures*, Staff Working Paper, March 1999.

as well as those that all consumers purchase, on housing costs, or on a variety of environmental factors that affect the cost of services schools provide.[86]

An industry paying exceptionally high or low wages in a particular county may have a significant unanticipated impact on a county's cost differential factor. The Center for Business and Economic Research alluded to this problem in its 1997 report, concluding, "some LEAs are unexpectedly qualifying for the CDF, and counties with heavy concentrations in certain industries feel they are being treated unfairly."[87]

The CDF does not directly affect BEP-generated wages for counties below the state averages, limiting its ability to address labor market conditions in high-wage counties. A final concern with the CDF is its treatment of counties with below-average wages. The BEP calculates the combined share of the formula for which all LEAs are collectively responsible and then divides that combined share among the LEAs according to fiscal capacity. By treating all counties with below-average wage indices as if they were at the average, the formula reduces the relative importance of the cost adjustment for the above-average counties. Assuming the CDF accurately measures prevailing wages in a county, it results in BEP-generated salaries that are comparable to other industries in high-wage counties and BEP-generated salaries that are *higher* than those found in other industries in low-wage counties. If the purpose of the CDF is to help LEAs in high-wage counties attract and retain qualified personnel, the CDF's structure undermines that purpose by reducing the incentive to remain an educator in a high-wage county versus a low-wage county.

Class Sizes

The BEP funding level for grades 10-12 instructional positions is higher than that required by law, but overall, most school systems employ more instructional positions than the BEP funds. TCA § 49-1-104(a) prescribes the average and maximum class sizes for every public school and pupil-teacher ratios as illustrated in Exhibit 2.[88]

Exhibit 2: TCA § 49-1-104(a), Average and Maximum Class Sizes

Grade Level	Average	Maximum
K-3	20	25
4-6	25	30
7-12	30	35
Vocational Education	20	25

The BEP funds these mandated average class sizes at the system level, with an adjustment in grades 10-12 for class-size demands beyond the statutory requirements and

[86] For example, see Jay Chambers and William J. Fowler, *Public School Teacher Cost Differences Across the United States: Introduction to the Teacher Cost Index (TCI)*, (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 1996).
[87] William F. Fox, Matthew N. Murray, and Patricia A. Price, *Analysis of the Basic Education Formula: Evaluation of Its Stability, Equity, and Adequacy* (February 1997), p. 8.
[88] TCA § 49-1-104(a).

another adjustment in grades 7-12 to provide a duty-free planning period.[89] Examples of class-size demands in the upper grades are science laboratories and advanced placement classes. In addition, high schools must provide a wide variety of subjects, increasing the overall number of teachers needed.

Estimates of the number of students are divided by the mandated averages and rounded to the nearest half to generate instructional positions. A rationale for funding at the system level was to encourage efficiency within the system.

Vocational class sizes are funded at the statutorily mandated ratio with an adjustment for the duty-free planning period.[90] This is based on the assumption that vocational education takes place in a shop or laboratory setting, where smaller class sizes are necessary. However, some vocational courses are academic, such as mathematics. Vocational class sizes do not reflect the portion of the average vocational student's day spent in such classes.

All but six of the 138 LEAs employ more instructional positions than the BEP funds, and nearly half the LEAs employ at least ten percent more instructional positions than the BEP funds. In 2001-02, LEAs employed 5,507 more local positions[91] than the BEP funded. [92]

In the 2001-02 BEP, the state cost of reducing the BEP-funded class sizes by one student in all categories would have been $43,583,000; by five students, $265,420,000.[93] Conversely, if vocational class sizes were increased to account for vocational/academic classes, raising the number by one student would save the state $2,929,000.[94]

The decision to change the class size component of the BEP is, to a large degree, a policy determination of the definition of what constitutes a "basic" education. However, to the extent that the difference between funded and actual class size results from lack of students at that grade level in the school or LEA, the problem is one of incomplete funding of existing class size standards rather than definition of "basic."

Instructional Salaries

All LEAs pay higher instructional salaries than those funded by the BEP. Local supplements in 2001-02 ranged from 11 to 63 percent of the BEP-generated salary. The BEP allocates instructional and other certificated positions (referred to as "instructional positions" in this section) based on student counts. Instructional positions include all

[89] The BEP funds grades 10-12 at a base class size ratio of 26.5:1, and grades 7-12 are adjusted by a factor of five-sixths to reflect the duty-free planning period provided to teachers in those grades. Therefore, the funded class-size ratio for grades 7-9 is reduced from 30:1 to 25:1, and the funding level for grades 10-12 is reduced from 26.5:1 to 22.08:1.
[90] With the adjustment, the funded ratio is 16.67:1 for vocational positions.
[91] "Local" positions exclude those that were federally funded.
[92] 2001-02 BEP Model and December 1, 2001 Instructional Salary file, Department of Education.
[93] Reducing class sizes by one student means changing K-3 class size to 19:1, 4-6 class size to 24:1, 7-9 class size to 29:1, and 10-12 class size to 25.5:1.
[94] Raising vocational class sizes by one student means changing the class size to 21:1.

regular, vocational, and special education teachers, as well as translators, social workers, psychologists, principals, assistant principals, and librarians.[95] The model then generates dollars associated with those positions by multiplying each BEP instructional position by the school system's BEP instructional salary. This salary is based on the state salary schedule, but varies from district to district based on the average levels of training (education) and experience within each system. In 2001-02, BEP-generated instructional salaries ranged from $26,949 to $30,281.

In addition to the BEP salary component, the state uses the BEP's fiscal capacity equalization framework to generate additional "salary equity" dollars for 50 school systems that were determined to pay below-minimum salaries and benefits in the 1993-94 school year.[96] The state distributes $11.8 million to the 50 systems, requiring a combined local match of $1.7 million, which is allocated to systems based on their relative fiscal capacities. Governor Phil Bredesen has proposed an additional $26.7 million for adjustment of teachers' salaries for the 2003-04 fiscal year as a first step in proposing a long-term solution to the Supreme Court's ruling.

The state salary schedule establishes minimum instructional salaries in Tennessee. However, all LEAs pay more than the schedule requires, and thus more than the salaries generated by the BEP. The average actual salary paid to instructional positions statewide in 2001-02 was $40,072 compared to the average state-mandated minimum salary of $28,301. Individual school systems' average salaries ranged from $32,677 in Cannon County to $49,288 in Oak Ridge. The average local supplement above the state's mandated minimum in school systems ranged from $3,117 per position in Fentress County to $18,295 in Oak Ridge.[97] The difference between these local supplements and the combined BEP-generated instructional salary (including the cost adjustment) and salary equity dollars was $873 million in 2001-02. Appendix 6 lists the average state-mandated minimum salaries, average local supplements, and average instructional salary for Tennessee school districts.

In 1999, Tennessee Small School Systems filed a motion in the Davidson County Chancery Court, arguing that the state had not implemented the Tennessee Supreme Court's ruling in *Small Schools II*. Chancellor Carol McCoy ruled in favor of the state in August 2001.[98] On October 8, 2002, the Supreme Court of Tennessee ruled that the salary equity plan incorporated into the BEP "contains no mechanism for cost determination or

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[95] The instructional salary is also applied to nurses and technology coordinators, even though those are not instructional positions.

[96] TCA § 49-3-366; "salary equity" funding applies to 50 systems in which the combined average salary and average employer paid health insurance in the 1993-94 fiscal year was below $28,094.

[97] These amounts exclude career ladder and extended contract supplements, but the average total salary figures include those supplements. Data are from personnel reports filed by LEAs with the Department of Education on December 1, 2001. Appendix 6 lists the average local salary supplement for all Tennessee local education agencies.

[98] 894 S.W.2d 734m Tenn, 1995; Plaintiff's Petition for Order Requiring Equalization of Teachers' Salaries, No. 88-1812-II (Davidson Chancery, filed May 21, 1999); Memorandum and Order, No. 88-1812-II (Davidson Chancery, filed July 13, 2000).

annual cost review of teachers' salaries," and therefore fails to fulfill the state's obligation to provide "a substantially equal educational opportunity to all students."[99]

The BEP could be modified to address these concerns, such as salary benchmarks and restructuring state-local sharing proportions. If the state chose to benchmark Tennessee's instructional salaries to regional, national, or other standards, there are many issues that merit consideration. For example, state or regional average salaries generally ignore differences in the cost of living, training and experience levels, contracts, retirement patterns, benefits, and state or local priorities for quality of services.[100] Moreover, there are various potential sources of salary data, with varying time lags, reporting standards, and inflationary and other adjustments. Cost estimates for the various legislative and other teacher salary proposals have ranged roughly from approximately $50 million to over $400 million.

Superintendents

BEP funding of superintendent salaries is based on an estimate of actual cost, but at the county, rather than the district level. Superintendents are a nonclassroom component of the BEP, so the state is responsible for 50 percent of the cost. The formula generates one superintendent position per county, with salary and benefits, as well as the cost adjustment for qualifying counties. In counties with multiple LEAs, the dollars generated are divided among those LEAs according to the proportion of students in each LEA.

The original BEP in the 1992-93 school year funded superintendent salaries at $63,000 per county based on the Southeastern average superintendent salary.[101] Since that time, the salary within the superintendent component of the BEP has grown through raises funded by the General Assembly. In 2001-02, the BEP generated $82,200 per county for superintendents' salaries. With additional funding through the CDF, the BEP actually generated an average *county* superintendent salary of $82,905, almost identical to the actual average *district* salary in 2001-02 of $82,946.[102]

For counties with multiple LEAs, the BEP divides superintendent funding among the LEAs based on ADM counts. In Gibson County, for example, which has five LEAs totaling 8,342 students, BEP superintendent funding in 2001-02 ranged from $6,282 for Bradford Special School District to $24,897 for Gibson County Special School District. The five districts in Gibson County, however, spent a combined $391,009 on superintendent salaries, 376 percent higher than the $82,200 generated by the BEP for the county. Every LEA in counties with multiple LEAs spent more on superintendent salaries than the amount generated by the BEP.[103]

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[99] Tennessee Small School Systems v. McWherter, 2002 WL 31237076 (Tenn. 2002), decided October 8, 2002.
[100] Gale Gaines, *Focus on Teacher Salaries: What Teacher Salary Averages Don't Show*, Southern Regional Education Board, October, 2000.
[101] Department of Education, "Calculation of Superintendent's Salary" spreadsheet.
[102] Department of Education, 2001-02 Annual Financial Report and 2001-02 BEP model.
[103] Office of Education Accountability analysis of 2001-02 Annual Financial Report and 2001-02 BEP model.

Some academic research has projected that consolidating smaller school districts can produce significant savings in administrative costs (including superintendent salary) and therefore increase overall efficiency.[104] By funding superintendent salaries at the county level, the BEP creates a small financial incentive for multiple LEAs within the same county to consolidate and achieve administrative savings. Although it is difficult to determine whether school districts are too large or too small, some recent research has estimated the optimal school system size to be between 4,800 and 6,500 students.[105]

BEP-generated funding of superintendent salaries and local spending on superintendent salaries vary considerably. Excluding Carroll County (which consists only of a single alternative school), Etowah City School System received the lowest BEP superintendent funding at $4,103 in 2002. Davidson County received the highest at $98,610, the $82,200 base amount increased by 20 percent because of the CDF.[106] Actual spending on superintendent salaries ranged from $30,400 in Bells City to $216,445 in Memphis City.[107]

BEP-generated funding for superintendent salaries does not correlate with actual spending on superintendent salaries at the district level. The BEP generated an average superintendent salary of $57,073 per LEA in 2001-02. During that year, the actual average salary was $82,946.[108] Thus, school systems spent 45 percent more in total on superintendent salaries than the amount generated by the BEP. Exhibit 3 shows BEP funding of superintendent salaries and actual LEA spending on superintendent salaries for the same year. The 43 LEAs to the left of the diagonal line spent less on superintendent salaries than the amount generated by the BEP. The 95 LEAs to the right of the line spent more than the amount generated by the BEP.

The most significant statistical predictor of superintendent salaries is ADM, but LEAs with a higher fiscal capacity and CDF also have higher superintendent salaries. The presence of multiple LEAs within the same county is not a significant predictor of LEA spending on superintendent salaries. That is, all other things being equal, county districts that are the only LEA within their counties generally pay approximately the same superintendent salaries as LEAs within counties with multiple LEAs.[109] Taken as a whole, county districts with low ADM and no other LEAs within the county consistently

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[104] William Duncombe, Jerry Miner, and John Ruggiero, "Potential Cost Savings from School District Consolidation: A Case Study of New York," *Economics of Education Review*, vol. 14, no. 3, pp. 265-284, 1995.

[105] Matthew Andrews, William Duncombe,and John Yinger, *Revisiting Economies of Size in American Education: Are We Any Closer to a Consensus?* Syracuse University Center for Policy Studies.

[106] Department of Education, 2001-02 BEP model.

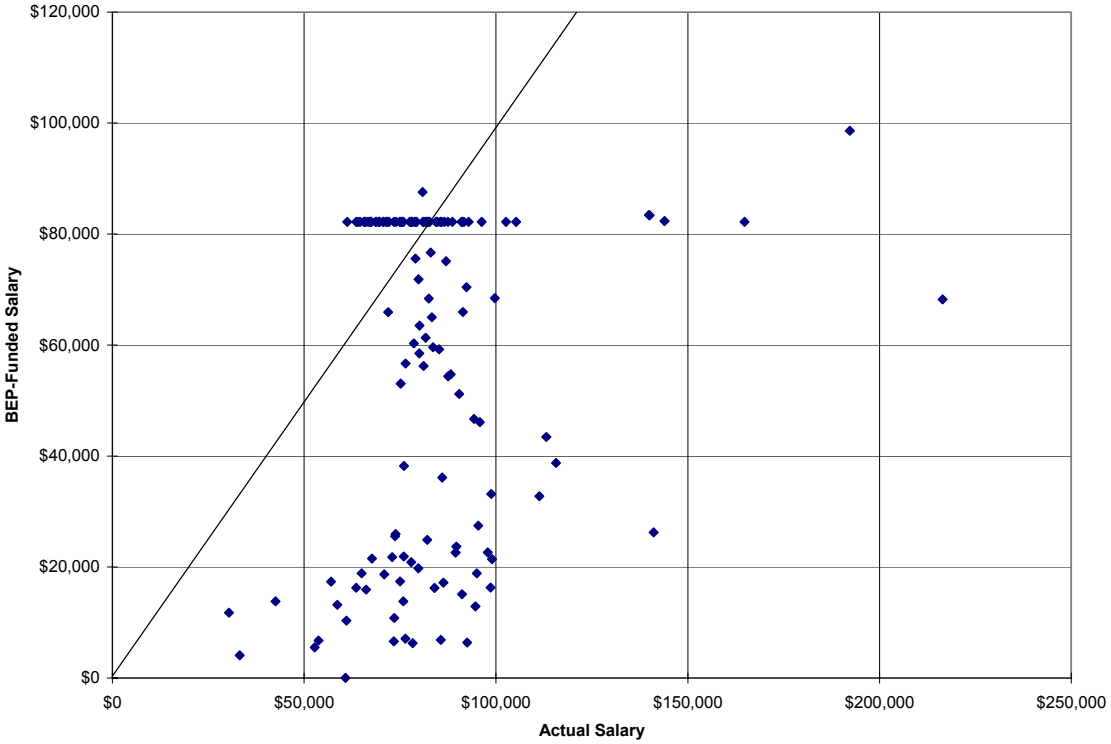
[107] Department of Education, 2001-02 Annual Financial Report.

[108] Department of Education, 2001-02 Annual Financial Report and 2001-02 BEP model.

[109] Office of Education Accountability analysis of Department of Education and Tennessee Advisory Commission on Intergovernmental Relations (TACIR) data. Dependent variable was LEA spending on superintendent salary in 2001-02; independent variables were LEA fiscal capacity per ADM from experimental 2002-03 TACIR subcounty fiscal capacity index, total ADM from the 2001-02 BEP model, cost differential factor (CDF) from the 2001-02 BEP model, and whether or not the LEA was the only LEA in its county in 2001-02.

spend *less* on superintendent salaries than the BEP generates while LEAs in counties with multiple LEAs consistently spend *more* than the amounts generated by the BEP.

Exhibit 3: Superintendent Salaries for the 2001-02 School Year



Source: Department of Education, 2001-02 Annual Financial Report and 2001-02 BEP model.

School Nurses

School health needs in Tennessee have changed considerably over the past decade, increasing the demand for nurses and other school health services. From 1992 to 2001, the percentage of students in Tennessee public schools classified as "health impaired" or "physically impaired" more than doubled.[110] Nationwide, the percent of children ages 5 to 17 with a limitation resulting from a chronic condition (including asthma, hearing impairments, diabetes, and others) increased from 6.1 percent to 7.3 percent from 1990 to 1998, and the percent of children below poverty with such limitations increased from 7.9 percent to 11.1 percent.[111] Tennessee school health officials indicate the rise in asthma, diabetes, and attention deficit hyperactivity disorder have created the need for more school nurses.[112] In 1996, the General Assembly passed

[110] These percentages represent health impaired or physically impaired per adjusted ADM, as calculated by Office of Education Accountability staff from: Department of Education, *Annual Statistical Report*, 1991-92 and 2000-01 School Year and an internal analysis of school system data.
[111] Interagency Forum on Child and Family Statistics, *America's Children: Key Indicators of Well-Being 2001*, Table H2, p. 88, http://www.childstats.gov/ac2001/ac01.asp (accessed January 17, 2002).
[112] Telephone interview with Ken Nye, Executive Director of School Health Programs, Department of Education, December 14, 2001; telephone interview with Lynn Jackson, Director of School Health, Department of Health, December 13, 2001.

legislation requiring that most medications received by students at school be administered by licensed medical personnel.[113] As prescription drug use has increased among students, more nurses are needed to administer these drugs.[114] Changing inclusion requirements of the Individuals with Disabilities in Education Act (IDEA) may also affect needs for school health services.

BEP school nurse standards are well below those recommended by national school health groups. The BEP funds one school nurse per 3,000 students, with a minimum of one per district. The BEP funded nurse salaries at an average of $28,291 in 2001-02, plus benefits and the cost differential factor. In 2001-02, the BEP generated $8,785,000 in state funding for 330.5 school nurse positions. The nurse component is unique among BEP components in that state law requires districts to use funds generated for school nurses on school health programs or file a report with the Commissioner of Education as to how the health needs of their students are being met.[115]

In comparison to the BEP-generated positions, LEAs employed 633.6 school nurses and other health personnel in 2000-01, a ratio of approximately 1,450 students per position.[116] However, these figures underrepresent the actual number of health personnel used by Tennessee school systems because many, including the largest ones, contract with county health departments or other providers for some or all health services. The contracted positions do not generally appear in school staffing reports. Total reported school system expenditures on health personnel in 2000-01 were $9,150,166, and total reported expenditures on all health services were $17,136,183, nearly twice the BEP-generated amount.

The National Association of School Nurses advocates a ratio of one school nurse for every 750 students in the general population, for every 225 students in the "mainstreamed" population,[117] and for every 125 students in the severely chronically ill or developmentally disabled population.[118] The American School Health Association also endorses these ratios.[119]

Nurses could be funded as a nonclassroom component. Although health services are necessary for a functioning school, few health-related activities take place in the classroom.[120] The BEP generated $11,713,000 for school nurses in 2001-02, $8,785,000

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[113] TCA §49-5-415.
[114] Telephone interview with Ken Nye, Executive Director of School Health Programs, Department of Education, December 14, 2001; telephone interview with Lynn Jackson, Director of School Health, Department of Health, December 13, 2001.
[115] TCA §49-3-359(c)(1).
[116] Department of Education, *Annual Statistical Report*, 2000-01 School Year.
[117] Mainstreamed students are those with disabilities or other special needs who are placed in regular classrooms.
[118] National Association of School Nurses, "Position Statement: Caseload Assignments," June 1995, http://www.nasn.org/positions/caseload.htm, (accessed January 4, 2002).
[119] American School Health Association, "Resolutions: A Professional Certified Registered Nurse in All Schools," 1997, http://www.ashaweb.org/resolutions2.html#schoolnursing, (accessed January 4, 2002).
[120] The same conclusion may apply to social workers, psychologists, and other positions not working in the classroom. This report did not examine those components.

(75 percent) in state funding. Changing school nurses to a nonclassroom component would shift $2,928,500 from state to local funding. Exhibit 4 shows the net change in the amount of state funding generated by the BEP based on combinations of various potential changes to the school nurse component of the BEP. These potential changes are:

- Changing school nurses to a nonclassroom component:
- Lowering the student/nurse ratio used to generate school nurses in the BEP; and
- Increasing the salary used to generate funding for school nurses to the Southeastern average salary.

Exhibit 4: Estimated Change in State BEP Responsibility Resulting from Various Nurse Component Changes, 2001-02

Student:Nurse Ratio	BEP-generated Salary	As Classroom Component	Difference in Cost to State if Non-Classroom Component
3000:1 (current)	Current	–	($2,928,500)
3000:1 (current)	Southeast average	$853,000	$2,367,500
1450:1	Current	$8,104,000	$2,472,500
1450:1	Southeast average	$9,716,000	$3,549,500
750:1*	Current	$23,289,000	$12,598,000
750:1*	Southeast average	$26,368,000	$14,646,500

- Note: Adjusting the BEP to fit the National Association of School Nurses standards for mainstreamed disabled and severely ill students would require additional information on these student populations in Tennessee.

English Language Learners (ELL)

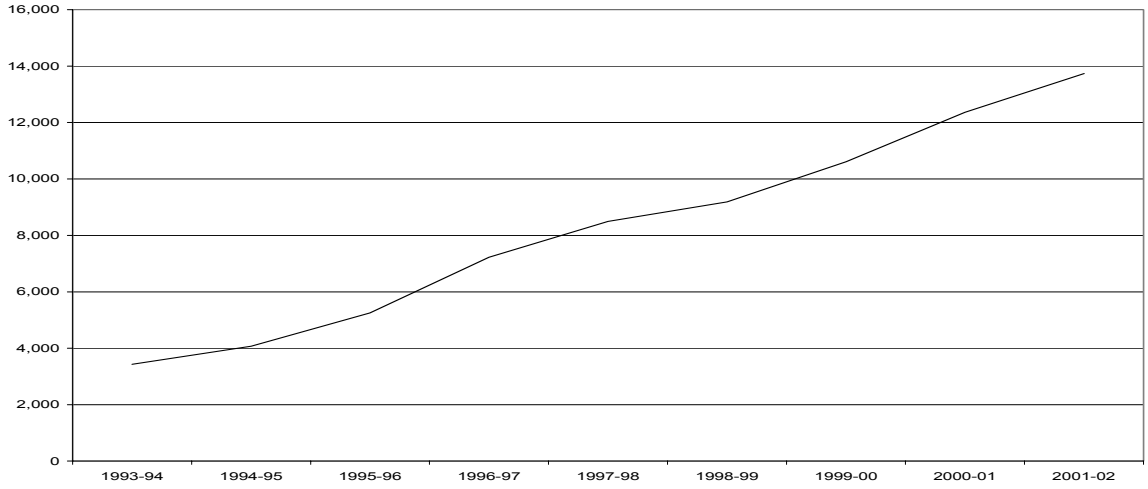
Although components for ELL instructors and translators were added to the BEP in 2001, anecdotal information indicates that educators continue to be concerned about schools' ability to provide adequate instruction and assistance to help these students become proficient in English. The new federal No Child Left Behind require ELL students to achieve as well as their English proficient peers.

An English Language Learner (ELL) is defined as "one whose native language is not English and whose difficulty in listening, speaking, reading, or writing English is an obstacle to successful learning in a classroom where English is the language of instruction."[121] The number of ELL students has increased significantly in Tennessee since 1993-94, when 65 of the then-139 systems, or 47 percent of the systems, reported a total of 3,430 ELL students.[122] In 2001-02, 108 (78 percent) of the 138 school systems reported serving 13,737 ELL students. (See Exhibit 5.)

While most of these students are concentrated in urban areas of the state, many rural systems also serve ELL students. Metro-Davidson County has the largest number of ELL students and Memphis City has the second largest number.

[121] *A Summary of Tennessee's Public School Systems: Report Card*, November 1999, p. 25.
[122] Telephone interview with Carol Irwin, ESL consultant, Tennessee Department of Education, December 17, 2001.

Exhibit 5: Growth in ELL Population in Tennessee's Public School Systems



Source: 1994 through 2002 Report Cards, Department of Education

According to the U.S. Department of Education, Tennessee is one of nine states where the ELL population grew by more than 50 percent between school years 1992-93 and 1995-96.[123] Metro-Nashville serves students from about 80 different language groups and about 110 countries. Some ELL students arrive in the state with little or no experience attending school but must be served in an age-appropriate environment. For example, a 14-year old student from another country may never have attended school and may not speak English but must be placed in a grade level appropriate for his or her age group. Also, students who attended school in other countries may have difficulty with certain classes, such as American history. Educators must address all these needs.[124]

Alternative Schools

Alternative schools are designed to provide specialized attention to students who have difficulty functioning in a traditional school environment because of disciplinary or other reasons. State law requires that each LEA establish at least one alternative school, either alone or jointly with other LEAs, for grades 7-12.[125] Statute also requires that alternative schools be run according to Board rules and that the Board "shall provide a curriculum for alternative schools to ensure students receive specialized attention needed to effectively reform students to prevent them from being repeat offenders."[126] The BEP funds alternative schools as a classroom component.

In Tennessee, systems incorporate a wide variety of alternative programs. The Northwest Regional Educational Laboratory stated that alternative schools' programs vary drastically; however, each program is different from the schools that the majority of

[123] The other states were Alabama, Alaska, Idaho, Nebraska, Nevada, North Carolina, Oregon, and Virginia.
[124] Office of Education Accountability, "Federal requirements for LEP programs," a briefing paper, 2000.
[125] TCA 49-6-3402(a).
[126] TCA 49-6-3402(b) and (f).

students attend.[127] Alternative school funding needs and allocations also vary, depending on whether it is classified as a program or a school. If classified as a school, the program is treated like a regular education school. Moreover, changing policies, particularly the implementation and revisions of "zero tolerance," have substantially increased the need for alternative school programs. Although the types of alternative programs vary greatly across the state, the consensus among alternative educators is that an adequate program should provide, among other things, a low pupil-teacher ratio (the State Board recommends a pupil/teacher ratio of 12/1) and an opportunity to meet state curriculum performance standards.

Additional data are necessary to determine how BEP-generated funding for alternative schools compares to actual spending. In 2001-02, the BEP generated $2.55 per student, and an additional $21.44 per student in grades 7-12 and vocational education. In 2001-02, the BEP generated a total of $10,403,370 for alternative schools. Funding has increased at 2.25 percent per year, on average, since 1993.[128] Inflation factors are used instead of actual expenditures because, until this year, the Department was unable to provide actual cost estimates for alternative schools.

The Department added a separate category for alternative schools to the financial reports in 2001-02. That year, 63 LEAs recorded $18,963,323 in expenditures for alternative schools.[129] However, this data provides little guidance in estimating the cost of alternative schools because so many LEAs did not report alternative school expenditures separately. Once LEAs account for alternative school expenditures in a uniform fashion, expenditures per student in alternative schools can be compared to comparable expenditures per student in traditional schools to determine the additional costs of instructing a student in an alternative environment.

In a 1998 survey, the Office of Education Accountability found that the operating expenditures for alternative programs varied widely, from $1,428 to $10,000 per full-time equivalent student, averaging $5,600 per full-time equivalent student per year in the 134 LEAs responding to the survey. At that time, these estimates suggested that LEAs' operating expenditures (i.e., excluding capital costs) were approximately 135 percent more than what the BEP generated.[130]

However, these differences do not necessarily mean that LEAs were spending 135 percent more than they received from the state for alternative programs. Particularly in

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[127] Northwest Regional Educational Laboratory, "Alternative Schools: Approaches for Students At Risk," *By Request*, September 1997, p. 2.

[128] The Center for Business and Economic Research presents the Department with three inflation theories. The Department uses the non-compensation government price deflator to inflate the alternative school component. Between the 2000-01 and 2001-02 school years, the inflation rate applied to the alternative schools component was 1.1 percent. It should be further noted that the inflation rates fluctuate annually. For example, the same quarter can have different figures, depending on the year that the BEP model is reviewed.

[129] Department of Education, *Annual Financial Report*, 2001-02, budget code 71150000.

[130] Total reported costs for 1997-98, excluding building costs, was around $22 million. In 1997-98, the BEP generated $9,356,956 for alterative schools.

larger LEAs, alternative programs have relatively high turnover. The regular classrooms in those LEAs need not maintain a desk for every student that is temporarily remanded to an alternative program. As a result, the cost of alternative programs are partly funded by the dollars generated for and provided to other school programs.

Directors of two alternative schools that Department officials claim meet Board guidelines indicate that current spending varies greatly, depending on the local entities' needs and choices. Specifically, in 2000-01, it cost approximately $10,080 per full-time equivalent student, or $604,799, to operate the Williamson County Alternative Learning Center, while the BEP generated $235,991 for alternative programs in Williamson County.[131] The 2001-02 BEP generated $74,949 for alternative programs in Jefferson County. However, the Jefferson County Alternative Learning Center costs approximately $335,000 annually to operate. The district funds the difference through local revenues, general BEP funding, and federal grants.[132]

On average, many school systems appear to meet the Board's alternative program class-size standard. In April 2000, the Board released the *Alternative School Program Standards*, developed by a broad-based committee to help LEAs develop alternative schools' curricula.[133] The Board's standards recommend a 1:12 adult-student ratio for alternative school programs. The Department maintains data on pupil/teacher ratios for all Tennessee schools. OEA staff cross-referenced pupil/teacher ratio data with a list of stand-alone alternative schools provided by the Department. All 25 schools on both lists met this standard in the 2001-02 school year.[134] However, the Department does not maintain separate pupil-teacher ratio data for alternative programs within other schools. Therefore, OEA staff could not determine if all alternative programs in the state meet Board standards.

At-Risk Class Size Component

Although the BEP generates additional funding for K-3 at-risk class size reduction, the formula generates additional funds based on only one-third of the K-3 at-risk population. None are generated for the at-risk population in grades 4-12. In 2001, more than half the students in 43 Tennessee school systems received free or reduced price lunch; in 14 systems, at least two-thirds of students received free and reduced price lunch.[135] At-risk students tend to come into the school system with lower skill levels and content knowledge, and they have a weaker support system to help them perform.[136] In a

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[131] Email correspondence from Gale Colvert, Director of Williamson County Alternative Learning Center, on December 18, 2001. The school has spaces for 60 students and serves from 200-250 students per year, each for an average of one to two months.
[132] Telephone interview with Vicki Forgety, Director of Jefferson County Alternative Learning Center, on December 7, 2001.
[133] Tennessee State Board of Education, *Alternative School Program Standards*, http://www.state.tn.us/sbe/alternativeschool.htm (accessed November 26, 2001).
[134] OEA staff analysis of alternative school data from the Department of Education web site (http://www.k-12.state.tn.us/sde/Searches/SearchSchool.asp) and pupil/teacher ratio data provided by Donnie Jordan,
[135] Tennessee uses free and reduced price lunch as a proxy for "at-risk."
[136] Education Commission of the States, "At Risk: Quick Facts," http://www.ecs.org/ecsmain.asp?page=/html/issues.asp?am=1 (accessed April 8, 2002).

1991 analysis of the proposed BEP formula, staff from the Comptroller's office and from the Tennessee Advisory Commission on Intergovernmental Relations concluded: "Other than the at-risk special initiative for grades K-3…, no provisions are made within the BEP for the higher demand on resources made by children from low and very low income families for a basic education program."[137] This component is based on research showing that class-size reduction is most effective for at-risk populations and in the first few years of school.[138] However, that rationale does not recognize the additional cost of serving at-risk students in later grades.

The "K-3 at-risk class size reduction" component in the BEP model generates additional funding equivalent to one teaching position (consisting of salary, benefits, and cost differential factor adjustment) for every 45 students on free and reduced price lunch in grades K-3. It does so by calculating additional teaching positions at a 15:1 student-teacher ratio for one-third of the K-3 students (measured by ADM) on free and reduced price lunch. Unlike regular education class-size ratios in the BEP, this 15:1 ratio is not tied to any requirement for class-size reduction, although it appears that the intent of the component was to reduce class size in the early grades.[139] Rather, it is used only as a funding mechanism. In 2001-02, this classroom component generated funding equivalent to 674 instructional positions, totaling $23,451,069 statewide.

Broadening the BEP at-risk class-size reduction component is one approach to funding services for at-risk students.

- In 2001-02, expanding the component from one-third of eligible K-3 students to all eligible K-3 students would have cost the state $36,916,000.
- Expanding the component to all eligible K-3 students as well as funding grades 4-6 at-risk students at a reduced (20:1) ratio would have cost $61,589,000.
- Expanding the component through 9th grade, funding eligible students in grades 7-9 at a reduced (25:1) ratio would have cost $77,299,000 in state funding, and extending the at-risk component to all students at these ratios (with a 21½:1 ratio for eligible students in grades 10-12) would have cost $94,371,000.[140]

Technology and Technology Coordinators

The BEP generates $20 million for technology, a classroom component, and distributes it proportionally among LEAs based on student counts. In 2000-01, this amount translated to $22.30 per student statewide. Because LEAs do not report technology separately, it is impossible to determine the total funds that all LEAs spend on technology. The $20

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[137] Memorandum regarding the Education Improvement Act of 1991, to Senators Ray Albright and Andy Womack and Representatives Eugene Davidson and William Purcell, from John G. Morgan, Ethel Detch, Wynetta Lee, Harry A. Green, and Virginia Gregory, April 12, 1991, p. 22.

[138] David Grissmer, Ann Flanagan, Jennifer Kawata, and Stephanie Williamson, *Improving Student Achievement: What NAEP Test Scores Tell Us*, (Santa Monica, CA: RAND, 2000), pp. 30-33. This section provides a summary of the literature on class-size reduction.

[139] Memorandum regarding the Education Improvement Act of 1991, to Senators Ray Albright and Andy Womack and Representatives Eugene Davidson and William Purcell, from John G. Morgan, Ethel Detch, Wynetta Lea, Harry A. Green, and Virginia Gregory, April 12, 1991, p. 9.

[140] These calculations are from the Tennessee Department of Education, requested by and presented to the BEP Review Committee on November 6, 2001.

million for technology in the BEP, however, has not changed since the formula's inception in 1992. A study by the Education Commission of the States found that in 1996-97, approximately 1.2 percent of total school expenditures were for technology, expected to rise to 1.5 percent by 1997-98.[141] (For comparison, 1.5 percent of the total 2001-02 BEP is approximately $53 million.)

In addition to BEP funding for technology, the state, federal, and local governments support the ConnecTEN program, which is designed to provide Internet access to all schools. The federal government matches funding through the E-Rate program. In 2000-01, the federal government allocated approximately $12 million to the state ConnecTEN program and approximately $35 million directly to LEAs through the E-Rate program. Additionally, the state provided 75 percent of the $5,873,000 cost of ConnecTEN, Internet connectivity, e-mail, and Internet content filtering, requiring LEAs to fund only the remaining 25 percent.[142]

The state also receives funding through the federal Technology Literacy Challenge Fund. In 2000-01, the state received $7,011,388 from the federal grant.[143] However, 2001-02 was the last year the grant was funded.[144] The state will continue to receive funding but likely less than the current amount. Local entities may also apply directly for various federal technology grants.

According to Department staff, a "basic" technology program must include hardware and software, high speed Internet connectivity, and technological professional development.[145]
In 1999-2000, the Southern Regional Education Board (SREB) developed a technology model for a well-equipped school. The model included:

- Local area networks (LANs) in every school district connected to a state-level wide area network (WAN) for Internet connections and instructional and administrative support;
- At least two networked computers in every school with a CD-ROM, printer, and projection device;
- At least one late-model computer for every five students in each school; and
- Adequate training and technical support.[146]

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[141] Linda Hertert and Mary Fulton, *Investing in Teacher Professional Development*, (Denver, CO: Education Commission of the States, 1997).
[142] Telephone interviews and subsequent email correspondence with Tom Bayersdorfer, Director of Information Technology, Tennessee Department of Education, November 21, 2001 and January 18, 2002; Memorandum from Jim Jones, Assistant Commissioner for Business Administration, Tennessee Department of Education, May 23, 2003.
[143] *Ibid.*
[144] *Ibid.*
[145] Interviews with Tom Bayersdorfer, Director of Information Technology, Tennessee Department of Education, November 21 and November 27, 2001.
[146] Lou Parker and William R. Thomas, "Guidelines for Technology Equipment Selection and Use: An SREB Model for Schools and Campuses," *Southern Regional Education Board,* June 1999, http://www.sreb.org/programs/EdTech/pubs/techselectguidelines/EdTechGuidelines.pdf (accessed November 1, 2001).

Tennessee does not meet student-to-computer ratios recommended by the Southern Regional Education Board. The SREB recommends one late-model computer for every five students in a school.[147] *Education Week* reported that Tennessee schools average 5.4 students per instructional computer, above the national average of 4.9.[148] To bring Tennessee public schools to a ratio of five students per computer, Tennessee needs an additional 13,317 computers. At a cost of $800 per computer, this would cost $10.65 million. Department staff stated that approximately 90 percent of Tennessee schools meet SREB student-to-computer ratios, but only an estimated 65 percent of Tennessee's computers are recent models.[149]

Not enough information is available to determine if Tennessee provides adequate training and technical support for public schools. In its 1999 report, *Guidelines for Technology Equipment Selection and Use: An SREB Model for Schools and Campuses*, the SREB stated that "successful educational computing and networking relies on the availability of training and technical support."[150] While the report does not provide explicit recommendations, it suggests that schools and systems should have access to consulting and "trouble-shooting" services that are familiar with the educational environment.

The BEP generates funding for one technology coordinator per 6,400 students with a minimum of one per system. In 2001-02, the BEP funded 223 technology coordinator positions at a total BEP cost of $7,814,792, which includes salary, benefits, and cost adjustment. The Department's web site indicates that the state has approximately 160 technology coordinators.[151]

The Board developed strategies to meet technological goals in its *Master Plan*; however, these goals would require additional state funding. In its 2001 *Master Plan*, Key Result Area 4, the Board addresses the current status of technology in Tennessee:

> Tennessee has made a major commitment to implement networked technologies to provide teachers and students easy access to appropriate materials. With a network that has over 100,000 computers online with reliable and secure Internet access, the recent focus has been for teachers to develop performance competency in using technology. This effort also includes identifying resources and having

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[147] Ibid.
[148] "Technology Counts, 2001," *Education Week,* May 10, 2001, pp. 70-105. The information contained in the *Education Week* survey was compiled by Tom Bayersdorfer, who explained that the data came from an accumulation of data he has received in the last five years through the ConnecTEN program.
[149] Telephone interviews with Tom Bayersdorfer, Director of Information Technology, Tennessee Department of Education, November 21, 2001 and January 18, 2002.
[150] Lou Parker and William R. Thomas, "Guidelines for Technology Equipment Selection and Use: An SREB Model for Schools and Campuses," Southern Regional Education Board, June 1999, http://www.sreb.org/programs/EdTech/pubs/techselectguidelines/EdTechGuidelines.pdf (accessed November 1, 2001).
[151] Tennessee Department of Education, Directory of Technology Coordinators, http://www.state.tn.us/education/tclst.htm (accessed January 11, 2002).

them accessible to teachers in a timely and cost-effective manner to meet student learning needs.[152]

Specifically, the Board outlines several technology strategies:

1. Implement an education information system that efficiently interfaces data requirements of local school systems to those of state and federal reporting requirements. Expand bandwidth capacity for school systems.
2. Focus technology resources to improve student learning.
3. Provide all students with access to networked computers in the classroom.
4. Advance student learning in using technology to assure all students are prepared for high skilled, high wage jobs and to support lifelong learning.
5. Increase the development and use of web-based resources.
6. Support opportunities for teachers and administrators to develop competence in using technology to meet instructional goals.
7. Obtain or develop on-line instruction to meet individual student and teacher learning needs and course requirements.

The Board estimated that implementing the strategies presented in the *Master Plan* would cost an additional $5 million.[153] The 2001-02 budget included a $5 million improvement item for "digital enhancement" to provide Internet access to advanced placement courses for school systems that could not afford to offer them.[154] However, the General Assembly did not fund this improvement item, and it was not included in the 2002-03 budget.

Transportation

The BEP underestimates transportation costs and, as a result, underfunds transportation. The BEP funds transportation needs for LEAs based on the estimated cost of the transportation services the LEA provides.[155] The BEP bases these estimates on district reports of actual transportation expenditures across the state in past years. However, Office of Education Accountability staff found that some school systems report transportation expenditures in categories that are excluded from the BEP model.

An informal survey of six LEAs found that four report school bus purchases under the "transportation expenditures" account ,[156] which is the account code included in the

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[152] State Board of Education, *Master Plan for Tennessee Schools: Preparing for the 21st Century,* 2002, p. 11.
[153] Ibid.
[154] State of Tennessee, *The Budget: 2001-2002,* p. B-82.
[155] The BEP uses a statistical model (regression) to estimate the impacts of four different factors on each LEA's transportation spending over three years prior to the BEP-funding year. Those four factors are: (1) students transported per ADM; (2) special education students transported per ADM; (3) miles driven per ADM; and (4) whether the district is a county, city, or special school district. The first three factors are based on three-year averages. The model estimates the average, statewide effects (coefficients) of these factors on transportation expenditures and multiplies those estimated effects by each LEA's respective factors to calculate the estimated cost to the LEA of providing transportation services in past years. The BEP then adjusts these amounts by an inflation measure to calculate the actual dollar amount of transportation spending generated for each LEA.
[156] This is account code 72710. The other two account codes discussed in this section are 91300-729 (capital projects – transportation equipment) and 91300-177 (capital projects – special projects).

calculation of the BEP transportation component. Another LEA reports school bus purchases as "capital projects – transportation equipment." The sixth LEA recently reported new buses as "capital projects – special projects"; prior to that, school bus purchases for the LEA were financed through capital outlay notes provided by the county.

Because some LEAs report school bus purchases outside the account used by the Department to calculate transportation expenditures, the BEP underestimates the cost of providing transportation services. The BEP model does not fund school bus purchases reported outside that account. However, the Department at one time directed school districts to code school bus purchases as "capital projects – transportation equipment" to promote uniformity and data comparability, but that account is not included in the calculation of transportation expenditures. Including the "capital projects – transportation equipment" account in the 2001-02 BEP model would increase state spending by $2,664,000 and would be a more accurate representation of LEA transportation costs.

The Department recently recognized these flaws in the BEP transportation component. Rather than including "capital projects – transportation expenditures" account code in the BEP, last year the Department directed LEAs to report all school bus purchases within the Transportation category under the "transportation equipment" object code.[157] If LEAs comply, this will remedy the situation. However, BEP funding will not begin to adjust to include these purchases until the 2004-05 school year and will not fully adjust until the 2006-07 school year. Also, because bus purchases can fluctuate from year to year, this approach will increase the instability of the transportation expenditures category and lead to artificially high estimates of per-pupil operating expenditures. Other flaws in transportation-related financial reporting, such as inclusion of school buses in the "capital projects – special projects" account code and purchase of buses by counties through capital outlay notes, require additional directions to LEAs.

Capital Outlay

The BEP school construction component does not reflect school construction costs borne by LEAs. Capital outlay is a nonclassroom component of the BEP. Construction, equipment, architects' fees, and financing determine school building costs. The formula generates total funding per student based on these costs, divided by the expected life of a school building. In 2001-02, the BEP generated $363,431,802 for the capital outlay component. Funding is based on the following assumptions:

- a 40-year usable life of school buildings;
- 20-year financing;
- six percent interest rate;
- 10 percent equipment costs;
- five percent architect fees; and
- square foot per student and cost per square foot standards.

[157] Email correspondence from Melissa Hinton, Director, Office of Local Finance, Tennessee Department of Education, on May 16, 2002; Memorandum from Jim Jones, Assistant Commissioner for Business Administration, Tennessee Department of Education, May 23, 2003.

The amounts generated by the BEP are significantly below actual spending. In 2000-01, LEAs reported spending $743,051,026 on capital projects,[158] compared to the BEP capital outlay component that generated $342,836,862 for that year (46 percent of total capital spending). Whether this difference indicates that some districts are choosing to add "bells and whistles" or that BEP funding is inadequate depends largely on how "basic" is defined with respect to school buildings. However, several assumptions within the BEP model do not appear to reflect actual "market" conditions faced by LEAs.

Square footage standards appear to underestimate actual space needs of new schools. The Education Improvement Act[159] imposed class-size standards that increased the number of classrooms. More classrooms result in more capital costs. Furthermore, to maintain flexibility to incorporate new technology and instructional techniques (and thus ensure building longevity), new classrooms are not significantly smaller than those built prior to statutory class-size limits. Greater policy focus on art, music, multimedia resources, special education, and pre-kindergarten programs creates additional school space needs. The result has been a net increase in the square footage needed to serve each student.

Based on contract information for 13 recently constructed schools in Tennessee, the Office of Education Accountability found that three K-8 schools fell between BEP space-per-student assumptions for elementary and middle schools. The other ten[160] ranged from two percent to 46 percent larger than the BEP assumptions.[161] Tennessee's BEP assumptions, shown in Exhibit 6, are also well below national averages for new construction. In 1995, the U.S. Department of Education analyzed size and design capacity for schools opening that year. The median elementary school had 120 square feet per student; the median middle school had 142 square feet per student; the median high school had 178 square feet per student.[162]

Exhibit 6: BEP-Funded Capital Outlay Assumptions

Grade level	Square feet per student	Cost per square foot	Adjusted cost per square foot[163]
Elementary school	100	$69	$75.90
Middle school	110	$78	$85.80
High school	130	$74	$81.40

[158] Tennessee Department of Education, *Annual Financial Report for the Scholastic Year ending June 30, 2001*, budget codes 76100000 and 91300000.
[159] Public Chapter 535, Section 37, 1992.
[160] Seven K-5 schools, two K-6 schools, and one 6-8 school.
[161] These 13 schools were located in the following LEAs: Marshall County, Marion County, Murfreesboro City, Rutherford County, and Williamson County.
[162] John B. Lyons, "K-12 School Construction Facts," U.S. Department of Education, May 1999, http://www.ed.gov/inits/construction/k12-facts.html (accessed January 7, 2001).
[163] These amounts are based on the actual BEP-funded cost per square foot, multiplied by 110% to include BEP-funded school construction equipment costs.

OEA staff contacted K-12 capital finance specialists in all other states to determine which states had established space standards for new construction. Four states have established minimum square feet per-pupil standards for new construction. (See Exhibit 7.) Six have established school space per student standards that are not binding. (See Exhibit 8.) These standards are either state recommendations or serve as the basis of state funding.[164]

Exhibit 7: Square Feet per Student Minimums

State	Arizona	California	Minnesota*	Ohio*
Elementary	90	59	110	119.4
Middle	100	80	160	141
High	125	92	180	167

* Assuming school populations in line with BEP standards: 500 for elementary, 750 for middle, and 1,000 for high school.
Source: Office of Education Accountability survey of state K-12 capital finance personnel.

Exhibit 8: Square Feet per Student Standards[165]

State	Delaware	Kentucky*	Maine	Maryland*	New Jersey	West Virginia*	Average
Elementary	86.6	123	125	115	125	85	110
Middle	123.7	127	135	135	134	125	130
High	145	140	160	160	151	160	153

* Assuming school populations in line with BEP standards: 500 for elementary, 750 for middle, and 1,000 for high school.
Source: Office of Education Accountability survey of state K-12 capital finance personnel.

The BEP model separates building construction costs from costs of equipment that are built into the school. These include bleachers, lab and kitchen equipment, lockers, and a number of other features. Contractors usually include these in their construction costs, so for purposes of comparison the BEP base numbers should be increased by 10 percent.

Architects, contractors, and construction managers interviewed felt the adjusted costs in Exhibit 6 were a reasonable approximation of the actual cost to build a basic school, with some exceptions. Specifically, most felt the BEP's high school base number is too low and the middle school cost per square foot too high. Since these deviations generally offset one another, they only affect those with a disproportionate share of middle or high school students.

[164] Many other states have minimum or recommended standards for the size of individual school components, such as classes, cafeterias, offices, and gymnasiums. Because of time and logistical constraints, the Office of Education Accountability did not attempt to develop a prototype school and derive gross square foot per student standards for these states.

[165] Pennsylvania has placed into state law standards of 58 square feet per student for elementary schools and 78 square feet per student for secondary schools. However, districts can receive state funding for projects that exceed these limits if they justify the additional space to the state Department of Education. Department officials would not comment on what percent of projects exceed these guidelines. Because it appears likely that projects regularly exceed state standards and still receive state funding, Pennsylvania's standards were not included in the calculation of the average square feet per student standard.

The BEP does not include funding for site acquisition and site work. Although the adjusted square foot cost numbers approximate the cost of actual building construction, they do not include a number of associated expenses borne by local districts. Most notably, the BEP does not include funding for site acquisition and site work. Schools must be built "where the students are," generally in close proximity to areas of significant development. School sites must have access to sufficient transportation infrastructure as well. These factors tend to raise land prices for new schools. Land prices can vary considerably within districts, but the most pronounced difference in land prices is found when comparing rural districts to urban and suburban districts. According to an annual survey by *American School & University* magazine, site purchase was an average of 3.1 percent of school construction cost nationwide in 2000.[166]

Site work can also add to the cost of new construction. Site work includes earth work, storm drainage, retention ponds, parking lots, grading, paving, and water, sewer, gas and electricity hookups. These costs vary considerably. Sites that do not drain well may require extensive earth work. Several superintendents and construction managers indicated that most available sites remaining in urban and suburban districts will require extensive site work because "all the good sites are already taken." On the other hand, a school in a rural district without access to a sewer system may require a package sewer system that will cost $250,000 to $500,000. An architect specializing in elementary and secondary schools placed site work at five to eight percent of total project costs. One construction manager estimated site work adds an additional $7.50 per square foot to the cost of building a school. Another stated it is not uncommon for a new school's site work to cost between $300,000 and $400,000. A third construction manager placed the combined cost of site acquisition and site work from $500,000 to $1,000,000. The *American Schools & University* survey found that site development averages 5.2 percent of construction costs.[167]

The BEP does not fund many fees and other associated expenses inherent in new construction. Most interviewees considered the BEP's five percent architect's fee reasonable. Many districts choose to build identical schools simultaneously or to purchase designs for schools already built in other districts. These strategies can lower architect fees to about 3.5 percent. However, many interviewees also believed additional outside costs should be included in BEP funding. Among these are civil engineering, site design, construction materials testing, geologic testing, land surveys, a construction manager, and a site selection consultant. These expenses could total another six to seven percent of project cost. The *American Schools & Universities* survey found that these fees were 6.4 percent of construction cost for projects completed nationwide in 2000. As increasing numbers of districts use construction management firms to ensure quality and to lower construction costs, this percentage appears likely to increase.

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[166] Joe Argon, "Building for the Boom," *American School and University*, May 2001, p. 34.
[167] *Ibid*.

The following table presents potential state costs for capital outlay component changes to the BEP.[168]

Exhibit 9: Estimated Change in State BEP Responsibility Resulting from Various Capital Outlay Component Changes, 2001-02

Component	Under Current Square Foot Standards	With Updated Square Foot Standards
No Improvements	-	$55,414,000
Site Acquisition (3.1 percent)	$5,384,000	$7,113,000
Site Work (5.2 percent)	$9,034,000	$11,309,000
Comprehensive Fees (6.4 percent)	$2,426,000	$3,707,000
All Above Changes	$16,855,000	$75,742,000

BEP assumptions for finance costs appear reasonable based on available data. Because of the complexity and variety of finance methods employed by local school districts, testing the appropriateness of the financing assumptions within the BEP is difficult. The Tennessee Department of the Treasury annually estimates the effective interest rates faced by local governments for long-term financing for the BEP. Since 1997, the BEP has assumed a six percent interest rate every year. Local governments in Tennessee issued over $3.6 billion in debt from 1997 to 2001. The average effective interest rate on this debt was 5.6 percent.[169] On the surface, this appears to indicate the BEP overfunds school construction. However, long-term interest rates have been low in recent years relative to historical levels, and inexpensive variable rate financing is available to many districts. If short-term and long-term interest rates rise to historical levels in the coming years, districts will face higher finance costs. Furthermore, the BEP does not account for the additional cost of issuing debt, including underwriting, printing, rating, and credit enhancement fees. From 1997 to 2001, local governments spent over $47 million to cover these additional school construction costs.[170]

The BEP's capital funding structure does not fully reimburse districts for the costs of new construction caused by enrollment growth. Because the BEP assumes a 40-year life for school buildings, it is an effective method of providing capital aid to districts with stable enrollments but less so for districts with relatively high enrollment growth. In real terms, future payments are not as valuable as current payments. A dollar received today can earn interest and be worth more at the end of the year; a dollar received at the end of the year will earn no interest. Economists "time discount" future payments by the interest rate to determine today's values.

High-growth districts may bear a disproportionate share of capital expenses because they must pay off capital expenses over a shorter period of time (usually 20 years) than they receive payments from the state to reimburse these expenses. Assuming a six percent interest rate, high growth districts break even when construction inflation (and thus the

[168] Costs of these components were calculated as a percent of equipment-inclusive construction costs. Costs of Comprehensive Fees include savings from removing current architects' fees assumption (five percent of equipment-exclusive construction costs).
[169] Data provided by the Comptroller of the Treasury, Division of Local Finance.
[170] Ibid.

annual increase in state aid) is 3.05 percent. If the increase in annual BEP school construction funding is below that level, time discounted BEP payments do not fund the actual cost of building new schools. From 1992 to 2001, inflation in two national indices measuring construction costs has averaged 2.5 percent and 2.8 percent.[171] The average of these numbers is 2.65 percent. Assuming this rate, the state underfunds construction costs for student population growth by 6.3 percent annually over the assumed building life of 40 years. Providing additional state BEP capital funding to fund school construction for the 6,273 students enrolled in districts with net enrollment growth in 2001 would generate an additional state cost of approximately $3 million in the 2001-02 BEP. Providing this funding if all changes on Exhibit 9 are made as well would generate an additional state cost of approximately $4.3 million.

[171] These two indices are the "Historical Cost Index" from RS Means, *Square Foot Costs 2001*, p. 451 and the *Engineering News Record* "Construction Cost Index," January 2002, http://www.enr.com/cost/costcci.asp (accessed January 22, 2002).

Alternatives-Parts I and II

Legislative Alternatives

The General Assembly may wish to establish desired outcomes for the state's K-12 education system and the state's responsibilities for public education in light of those outcomes. Adequacy refers to a funding system that gives students "access to educational resources and opportunities adequate to achieve desired educational outcomes,"[172] and the Tennessee Supreme Court has stated that the General Assembly must ensure "substantially equal educational opportunity to all students."[173] Legislatively established outcome goals could serve as a basis for establishing performance standards for Tennessee students, schools, and LEAs and for defining the state's responsibilities for public education.

The General Assembly may wish to amend TCA §49-1-302 (a)(4) to require the BEP Review Committee to review the formula's components and report annually to the General Assembly. This report identifies a number of components meriting review, as well as suggestions for linking funding to outcomes. Specifying the frequency of that review and requiring a formal report on its findings would keep the General Assembly apprised of state education finance successes and shortcomings.

The General Assembly may wish to seek recommendations from the BEP Review Committee or others to modify the following aspects of the BEP formula:

- Fiscal capacity index – Consider changing to a district-level fiscal capacity measure. Consider removing the measure of students per capita from the fiscal capacity estimation. Consider including an indicator of non-educational service burdens on local governments.
- Cost differential factor – Clarify the purpose of the cost adjustment. Consider changing the cost measure depending on the purpose of the adjustment. For example, the measure could include regional housing costs.
- Class size – Consider decreasing BEP-generated class sizes in response to student dispersion within an LEA and instructional demands of specialized classes (e.g., laboratories), and consider increasing vocational class in cases where instruction is similar to regular classes (e.g., mathematics).
- Instructional salaries – Consider changing BEP-generated instructional salaries in response to the October 2002 state Supreme Court decision.
- Superintendents – Consider adjusting the BEP-generated superintendent salary for county and/or LEA size.
- School nurses – Consider decreasing the ratio of school nurses per-pupil by at least 50 percent. Consider changing the school nurse component to a nonclassroom component.

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[172] Paul A. Minorini and Stephen D. Sugarman, "Educational Adequacy and the Courts: The Promise and Problem of Moving to a New Paradigm," in Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen (editors), *Equity and Adequacy in Education Finance: Issues and Perspectives* (Washington, D.C.: National Academy Press, 1999), p. 176.

[173] Tennessee Small School Systems, et al. v. Ned Ray McWherter, et al., No. M2001-01957-SC-R3-CV, Filed October 8, 2002.

- Alternative schools – Consider increasing the BEP alternative schools component to more accurately reflect the cost of providing alternative programs.
- At-risk class size – Consider increasing the BEP at-risk component to include all at-risk students, or consider changing the approach to fund the additional cost of serving at-risk students.
- Technology and technology coordinators – Consider linking the BEP technology components to a set of educational technology standards.
- Capital outlay – Consider incorporating costs associated with school construction that are not currently included in the BEP. These may include: larger square feet per student standards, site acquisition and development costs, and various fees. Consider an amortization structure that fully reimburses districts for the cost of enrollment growth.

Administrative Alternatives

The State Board of Education should define a set of "adequate" performance standards based on outcomes established by the General Assembly. If the General Assembly establishes outcome goals for Tennessee's K-12 education system, the State Board of Education should then define a set of "adequate" performance standards based on those outcomes. These may include both the test performance of a percent of students in a school or LEA, for example, and other standards that reflect non-academic goals such as socialization, citizenship, and familiarity with technology. In addition, the State Board should propose programs and costs required to reach those performance standards.

The State Board of Education should propose any necessary modifications to the BEP formula to more explicitly address desired outcomes and standards established by the General Assembly and the Board. Both the Tennessee Supreme Court and education policymakers in Tennessee have shown a preference for including any changes in state K-12 education spending within the BEP. Once the General Assembly and the State Board have established desired outcomes and standards to measure the attainment of those outcomes, the Board should propose any necessary modifications to the BEP formula to more explicitly address those standards.

The State Board of Education should analyze and verify BEP estimates and distributions on an ongoing basis. State law and rule require the board to establish the BEP formula and approve BEP allocations. In the BEP's early years, the State Board served as a check on the complex assumptions and calculations of the BEP formula. However, in 1997, the State Board was reorganized, lost several positions, and no longer had a staff person to monitor the BEP. Although the board annually approves the BEP estimates, it is often on a consent calendar with little or no analysis or questioning. Enhanced analysis and verification by the board would provide greater assurance that the methodologies used in calculating BEP funding are appropriate.

The Tennessee Department of Education should incorporate all transportation-related expenditures into the model that generates the BEP transportation component. The Department's calculation of transportation costs excludes some relevant expenditures, and some LEAs continue to ignore Department accounting guidelines,

further decreasing the transportation component. Ongoing research and fiscal accountability needs would benefit from maintaining separate transportation account codes for school bus purchases and other transportation expenditures.

Management Responses

The Department of Education concurred with all findings and recommendations in this report. (See Appendix 8.)

The State Board of Education did not respond to a draft copy of this report.

Appendices

Appendix 1: Higher education entrance standards

Exhibit 10: Grade Point Average (GPA) and ACT Standards for Tennessee Four-Year Public Universities

Institution	*Minimum GPA (4.0 scale)*	*Minimum ACT (maximum of 36)*
Austin Peay State University[174]	2.75	19
East Tennessee State University[175]	2.30	19
Middle Tennessee State University[176]	2.8	20
Tennessee State University	2.25	19
Tennessee Technological University[177]	2.35	19
University of Memphis	2.00	19
University of Tennessee, Chattanooga	2.75 / 2.00	16 / 21
University of Tennessee, Knoxville[178]	N/A	N/A
University of Tennessee, Martin	2.60 / 2.25	16 / 19

Sources/Notes: Data for this table came from the various campus web sites, from conversations with campus admissions offices, and from student application packets. In the cases of the University of Tennessee campuses at Chattanooga and Martin, the two sets of numbers indicate alternative entrance criteria. For example, a student may be accepted to Martin with an ACT score of 16 if that student's GPA is at least 2.60, or the student may have a lower GPA but an ACT score of 19.

[174] Austin Peay State University also admits students with an SAT score of 900.
[175] East Tennessee State University also admits students with an SAT score "equivalent" to the ACT score.
[176] Middle Tennessee State University admits students meeting either the GPA or the ACT requirement.
[177] Tennessee Technological University also admits students with an SAT score of 900.
[178] University of Tennessee, Knoxville does not have minimum entrance requirements, but considers applicants individually.

Appendix 2: Tennessee Department of Education on-notice criteria, 2001-03[179]

Grades K-8, criteria used to place schools on notice

- Achievement criteria – School-wide, 3-year achievement averages in reading, language arts, and mathematics less than 40 NCE (normal curve equivalent).

S*chools identified as "on notice" have a three-year achievement pattern of 48-73% of their student population in the below average group.*

- Growth factors (adequate yearly progress):
  1. School-wide cumulative 3-year Value Added of 100% in reading, language arts, and mathematics;
  2. Closing the achievement gap by a reduction in the number/percentage of students in the below average group in reading, language arts, mathematics, and writing.

Schools identified as "on notice" failed to meet one or both of the growth factors.

Grades 9-12, criteria used to place schools on notice

- Achievement criteria – achievement levels in Algebra I End of Course, 11th grade writing, and ACT composite

Schools identified as "on notice" had below average achievement in two or more of these areas.

- Growth factors:
  1. Positive Value Added (meeting predicted targets);
  2. Closing the achievement gap by a reduction in the number/percentage of students in below average group;
  3. Positive trend in reducing dropout rate.

Schools identified as "on notice" failed to meet one or more of the growth factors.

[179] State Board of Education, Action Item IV.D, August 23, 2002.

Appendix 3: Tennessee ACT data

Exhibit 11a: ACT Score by Race/Ethnicity, 2002

Race	Students	Mean ACT
African-American/Black	7,676	16.4
Am Indian/Alaskan Native	176	18.9
Caucasian/White	32,773	20.9
Mexican American/Chicano	326	18.8
Asian-Amer/Pacific Islander	772	20.6
Puerto Rican/Hispanic	256	18.8
Other	419	18.0
Multiracial	398	20.6
Prefer not to Respond	1,039	20.9
No Response	472	19.9

Exhibit 11b: ACT Score by Income, 2002

Estimated Family Income	Students	Mean ACT
Less than $18,000	4,529	17.2
$18,000-$24,000	3,842	18.0
$24,000-$30,000	3,331	18.8
$30,000-$36,000	3,183	19.2
$36,000-$42,000	3,346	19.7
$42,000-$50,000	3,618	20.1
$50,000-$60,000	3,892	20.8
$60,000-$80,000	5,086	21.6
$80,000-$100,000	3,005	22.1
More than $100,000	3,521	22.8
No Response	6,954	20.1

Exhibit 11c: ACT Score by Quartile, 2002

High School Rank	Students	Mean ACT Comp
Top Quarter	13,960	23.3
Second Quarter	15,555	19.2
Third Quarter	9,396	17.2
Fourth Quarter	1,433	16.1
No Response	3,963	19.8

Exhibit 11d: ACT Score Frequencies, 2002

ACT Score	Frequency
36	5
35	31
34	106
33	165
32	297
31	435
30	595
29	751
28	1,055
27	1,170
26	1,655
25	1,930
24	2,081
23	2,509
22	2,858
21	3,292
20	3,500
19	3,641
18	3,486
17	3,350
16	3,110
15	2,770
14	2,310
13	1,731
12	991
11	400
10	69
9	7
8	6
7	1
6	0

Source: Tennessee Higher Education Commission.

Exhibit 11e: State Average ACT Scores, 2002

State	% Taking ACT	Average Score
Michigan	68	21.3
Missouri	68	21.5
Wisconsin	68	22.2
Oklahoma	69	20.5
Alabama	71	20.1
South Dakota	71	21.4
Arkansas	72	20.2
Kentucky	72	20.0
Nebraska	72	21.7
Kansas	76	21.6
North Dakota	78	21.2
Louisiana	79	19.6
Tennessee	79	20.0
Mississippi	84	18.6
Colorado	99	20.1
Illinois	99	20.1
Average	**n/a**	**20.8**

Source: ACT, http://www.act.org/news/data/02/states.html.

Appendix 4: Fiscal Capacity Index

The fiscal capacity index estimates a county's local revenue-raising ability as a basis for calculating the local responsibility for the BEP. An LEA in a county with a low fiscal capacity receives relatively more state BEP dollars than an LEA in a county with a high fiscal capacity.

A statistical model (regression) estimates the impacts of five different factors on each county's three-year average per-pupil own-source revenue. Those five factors are: (1) three-year average per-pupil sales tax base; (2) three-year average per-pupil property tax base; (3) three-year average per-capita personal income; (4) ratio of residential and farm property assessment to total assessment (high levels of commercial and industrial property allow a county to "export" its tax burden to other places); and (5) ratio of ADM to total population.[180]

The model estimates the average, statewide effects of these factors on own-source revenue and multiplies them by each county's respective factors to calculate a dollar amount that reflects the estimated revenue-raising capacity for each county. That dollar amount represents the county's share of the estimated statewide fiscal capacity. The county's fiscal capacity share is divided by its share of the total BEP to get a fiscal capacity index with a statewide average of one. This index is multiplied by 25 percent for classroom components and 50 percent for nonclassroom components. The resulting numbers represent the percentage of total BEP-generated dollars for which each LEA is responsible. In 2001-02, these percentages ranged from six to 41 percent in the classroom category and from ten to 89 percent in the nonclassroom category.

[180] For an explanation of the rationale behind each factor (or variable), see Harry A. Green and Lynne Holliday, *Fiscal Capacity for Funding K-12 Education*, Tennessee Advisory Commission on Intergovernmental Relations, Technical Report, September 1997.

Appendix 5: Components of the BEP, as Shown in the State Board of Education's "Blue Book"

CLASSROOM COMPONENTS
(STATE SHARE = 75%)

COMPONENT	FUNDING LEVEL
REGULAR EDUCATION	1 per 20 ADM K-3 1 per 25 ADM 4-6 1 per 30 ADM 7-9 1 per 26.5 ADM 10-12
VOCATIONAL EDUCATION	1 per 20 vocational education FTEADM
SPECIAL EDUCATION (number of students identified and served = I & S)	(Caseload Allocations)

Option 1	91	Option 6	2
Option 2	73	Option 7	10
Option 3	46	Option 8	6
Option 4	25	Option 9	0
Option 5	15	Option 10	10

ELEMENTARY GUIDANCE	1 per 500 ADM K-6*
SECONDARY GUIDANCE	1 per 350 ADM 7-12 (including voc ed)*
ELEMENTARY ART	1 per 525 ADM K-6
ELEMENTARY MUSIC	1 per 525 ADM K-6
ELEMENTARY PHYSICAL EDUCATION	1 per 350 ADM K-4 1 per 265 ADM 5-6
ELEMENTARY LIBRARIANS (K-8)	.5 per school < 265 1 per school 265-439 1 per school 440-659 (+.5 assistant) 1 per school > 660 (+1 assistant)
SECONDARY LIBRARIANS (9-12)	.5 per school < 300 1 per school 300-999 2 per school 1,000-1,499 2 per school > 1,500 (+1 per add'l 750)

SUBSTITUTE TEACHERS	$35.00 per total ADM
INSTRUCTIONAL ASSISTANTS	1 per 75 ADM K-6
SPECIAL EDUCATION ASSISTANTS	1 per 60 special education I & S in Options 5,7,8
PRINCIPALS	.5 per school < 225** 1 per school > 225
ASSISTANT PRINCIPALS ELEMENTARY	.5 per school 660-879 1 per school 880-1,099 1.5 per school 1,100-1,319 2 per school > 1,320
ASSISTANT PRINCIPALS SECONDARY	.5 per school 300-649 1 per school 650-999 1.5 per school 1,000-1,249 2 per school > 1,250 (+ 1 per add'l 250)
SYSTEM-WIDE INSTRUCTIONAL SUPERVISORS	1 per < 500 total ADM 2 per 500-999 total ADM 3 per 1,000-1,999 total ADM 3 per > 2,000 total ADM (+ 1 per add'l 1,000)
SPECIAL EDUCATION SUPERVISORS	1 per 750 special education I & S
VOCATIONAL EDUCATION SUPERVISORS	1 per 1,000 vocational education FTEADM
SPECIAL EDUCATION ASSESSMENT PERSONNEL	1 per 600 special education I & S
SOCIAL WORKERS	1 per 2,000 total ADM*
PSYCHOLOGISTS	1 per 2,500 total ADM*
NURSES	1 per 3,000 total ADM (min. + 1 per system)
ALTERNATIVE SCHOOLS	$ 2.52 per total ADM K-12 plus $21.20 per ADM 7-12 (including voc ed)
K-3 AT-RISK CLASS SIZE REDUCTION	Systems are allocated additional teachers to reduce pupil-teacher ratio to 15:1 for 1/3 of students on free and reduced lunch
DUTY-FREE LUNCH	$7.72 per total ADM
SPECIAL EDUCATION EARLY INTERVENTION	Early intervention services for 3-year-old children with disabilities. Now allocated through count of special education I & S
STAFF BENEFITS AND INSURANCE	$2,271.85 per BEP position for insurance; plus 7.65% of BEP salary for FICA. Add 3.72% of BEP salary per licensed position OR 4.71% of BEP salary per classified position for TCRS
TEXTBOOKS	$59.00 per total ADM
CLASSROOM MATERIALS & SUPPLIES (includes fee waiver)	$47.00 per regular ADM $100.00 per vocational education FTEADM $24.00 per special education I & S $21.00 per Academic exit exam (12th grade) $18.00 per Technical exit exam (1/4 voc ed)
INSTRUCTIONAL EQUIPMENT	$49.00 per regular ADM $82.00 per vocational education FTEADM $12.00 per special education I & S

CLASSROOM RELATED TRAVEL	$ 3.00 per regular ADM $14.00 per vocational education FTEADM $ 9.00 per special education I & S
VOCATIONAL CENTER TRANSPORTATION	For participating systems to transport students to vocational center attended part of the day
TECHNOLOGY	$22.30 per total ADM $20 M distributed on ADM basis

NON-CLASSROOM COMPONENTS
(STATE SHARE = 50%)

COMPONENT	FUNDING LEVEL
SUPERINTENDENT	1 per county***
SYSTEM SECRETARIAL SUPPORT	1 per system < 500 2 per system 500-1,250 3 per system 1,251-1,999
TECHNOLOGY COORDINATORS	1 per system with one additional for each 6,400 ADM
SCHOOL SECRETARIES	.5 per school < 225 1 per school 225-374 1 per 375 per school > 375
MAINTENANCE & OPERATIONS	100 square feet per total K-4 ADM 110 square feet per total 5-8 ADM 130 square feet per total 9-12 ADM Total sq ft x $2.36/sq ft**** 1 custodian per 21,833 calculated sq ft
NON-INSTRUCTIONAL EQUIPMENT	$13.00 per total ADM
PUPIL TRANSPORTATION	Allocated to systems that provide transportation. Formula established by Commissioner of Education. Based on number of pupils transported, miles transported, and density of pupils per route mile
STAFF BENEFITS AND INSURANCE	$2,271.85 per BEP position for insurance; plus 7.65% of BEP salary for FICA. Add 3.72% of BEP salary per Superintendent and technology coordinator OR 4.71% of BEP salary per classified position for TCRS
CAPITAL OUTLAY	100 sq ft per total K-4 ADM x $66/sq ft 110 sq ft per total 5-8 ADM x $74/sq ft 130 sq ft per total 9-12 ADM x $69/sq ft Add equipment (10% of sq ft cost) Add architect's fee (5% of sq ft cost) Add debt service (20 yr. @ 6.00%) Divide total by 40 yr. = annual amount

SALARIES USED IN BEP CALCULATIONS

Teachers and Other Licensed Personnel

The BEP allocation for salaries for each school system is based on:

- The number of each type of position generated by the cost components
- The current average salary for licensed personnel in that school system, based on the state salary schedule (including Training and Experience factor).
- Average annual superintendent salary = $80,200 per county

Other Personnel

Average annual library/instructional assistant salary = $14,200
Average annual custodian salary = $14,700
Average annual school secretary salary = $20,600
Average annual system secretary salary = $25,500

FOOTNOTES

*If a system within a county having more than one system does not have enough pupils to qualify for a position, the relevant county totals are used and each system receives a pro rata share based on its proportion of total relevant enrollment. If county totals are not sufficient to generate a position, the county is allocated one position and each system is allocated a pro rata share of the position based on its proportion of the relevant enrollment.

**Elementary schools < 100 are not allocated a principal.

***One superintendent is allocated for each county. If there is more than one school system in a county, each system receives a pro rata share based on its proportion of total county ADM.

****For purposes of calculating benefits and insurance: for maintenance add 60% of sq. ft. cost to salary allocation; for pupil transportation add 45% of amount to salary allocation. Apply calculated rate (ins, FICA, TCRS) for classified personnel as specified to 50% or 45% of allocation, respectively.

Appendix 6: Local Salary Supplements

As of December 1, 2001

School System	Average State-Mandated Minimum Salary	Average Voluntary Local Supplement	Average Annual Salary
Anderson County	$28,506	$10,022	$39,466
Clinton City	$29,123	$13,941	$45,001
Oak Ridge City	$29,163	$18,295	$49,288
Bedford County	$27,803	$6,869	$35,913
Benton County	$28,436	$6,395	$35,781
Bledsoe County	$27,855	$4,246	$33,178
Blount County	$28,841	$12,065	$42,007
Alcoa City	$29,510	$17,517	$49,149
Maryville City	$29,320	$16,946	$47,377
Bradley County	$28,155	$9,669	$38,999
Cleveland City	$28,255	$10,671	$40,149
Campbell County	$28,809	$5,206	$34,969
Cannon County	$27,197	$4,893	$32,677
Carroll County	$28,177	$5,393	$35,170
H Rock-Bruceton SSD	$28,393	$3,609	$33,110
Huntingdon SSD	$28,552	$5,356	$35,088
McKenzie SSD	$28,561	$5,491	$35,231
South Carroll SSD	$27,786	$5,255	$34,424
West Carroll SSD	$27,855	$5,268	$34,165
Carter County	$27,932	$3,928	$33,342
Elizabethton City	$28,282	$8,820	$39,017
Cheatham County	$27,419	$6,288	$34,509
Chester County	$27,979	$5,540	$34,526
Claiborne County	$28,551	$6,441	$36,154
Clay County	$28,059	$4,100	$33,294
Cocke County	$28,248	$5,372	$34,660
Newport City	$30,508	$7,736	$40,302
Coffee County	$28,207	$8,272	$37,540
Manchester City	$28,584	$11,122	$41,342
Tullahoma City	$28,487	$12,413	$42,129
Crockett County	$27,303	$5,178	$33,275
Alamo City	$27,221	$4,758	$32,747
Bells City	$27,042	$5,635	$33,608

Note: First and second columns do not add to third because of federal funding and career ladder funding.
Source: Department of Education, December 1, 2001 Instructional Salary data.

School System	Average State-Mandated Minimum Salary	Average Voluntary Local Supplement	Average Annual Salary
Cumberland County	$28,375	$6,576	$36,118
Davidson County	$28,510	$15,025	$44,484
Decatur County	$28,526	$5,555	$35,145
DeKalb County	$27,928	$4,542	$33,578
Dickson County	$28,038	$7,575	$36,745
Dyer County	$28,241	$10,129	$39,790
Dyersburg City	$28,856	$13,206	$43,341
Fayette County	$27,711	$5,078	$33,403
Fentress County	$28,665	$3,117	$33,125
Franklin County	$28,377	$7,046	$36,218
Humboldt City	$27,837	$6,391	$35,110
Milan SSD	$28,039	$6,089	$35,533
Trenton SSD	$28,229	$7,375	$36,597
Bradford SSD	$28,628	$5,614	$36,535
Gibson County SSD	$27,693	$6,198	$35,243
Giles County	$28,798	$5,931	$35,827
Grainger County	$28,213	$5,047	$34,128
Greene County	$28,022	$5,931	$34,887
Greeneville City	$28,689	$13,467	$43,121
Grundy County	$27,983	$3,950	$32,912
Hamblen County	$28,601	$8,028	$37,695
Hamilton County	$28,197	$13,137	$42,468
Hancock County	$28,893	$4,444	$34,335
Hardeman County	$27,603	$5,340	$33,988
Hardin County	$28,568	$6,159	$35,823
Hawkins County	$28,149	$4,618	$33,599
Rogersville City	$28,080	$7,142	$36,483
Haywood County	$27,917	$6,365	$35,074
Henderson County	$28,183	$5,432	$34,597
Lexington City	$28,360	$7,440	$37,659
Henry County	$28,399	$7,400	$37,380
Paris SSD	$28,548	$7,791	$37,436
Hickman County	$27,362	$4,712	$32,764
Houston County	$27,960	$5,275	$34,249
Humphreys County	$28,023	$6,995	$36,081
Jackson County	$28,474	$4,747	$34,278

Note: First and second columns do not add to third because of federal funding and career ladder funding.
Source: Department of Education, December 1, 2001 Instructional Salary data.

School System	Average State-Mandated Minimum Salary	Average Voluntary Local Supplement	Average Annual Salary
Jefferson County	$28,376	$6,614	$36,034
Johnson County	$28,288	$4,746	$34,232
Knox County	$28,356	$11,076	$40,726
Lake County	$27,622	$6,202	$35,233
Lauderdale County	$27,567	$7,688	$36,605
Lawrence County	$28,804	$4,817	$34,704
Lewis County	$27,806	$5,719	$34,486
Lincoln County	$28,434	$5,518	$35,119
Fayetteville City	$28,764	$7,680	$37,875
Loudon County	$28,761	$8,371	$38,636
Lenoir City	$29,033	$10,662	$41,012
McMinn County	$28,835	$9,259	$39,050
Athens City	$29,079	$13,258	$43,896
Etowah City	$28,236	$5,707	$34,633
McNairy County	$27,936	$6,125	$35,041
Macon County	$28,067	$6,761	$35,698
Madison County	$28,807	$12,796	$42,784
Marion County	$28,412	$6,006	$35,465
Richard City SSD	$27,103	$5,977	$34,009
Marshall County	$28,070	$10,136	$39,207
Maury County	$28,376	$10,268	$39,955
Meigs County	$27,737	$6,855	$35,908
Monroe County	$28,045	$6,260	$35,054
Sweetwater City	$28,150	$8,462	$37,587
Montgomery Co	$27,818	$10,030	$38,746
Moore County	$28,708	$6,983	$36,574
Morgan County	$28,062	$4,176	$33,587
Obion County	$28,356	$8,079	$37,694
Union City	$29,190	$10,312	$41,468
Overton County	$28,494	$4,492	$34,271
Perry County	$28,019	$6,025	$35,263
Pickett County	$29,169	$4,514	$34,620
Polk County	$28,452	$7,132	$36,535
Putnam County	$28,530	$6,643	$36,414
Rhea County	$27,774	$3,998	$32,898
Dayton City	$27,603	$5,989	$34,272

Note: First and second columns do not add to third because of federal funding and career ladder funding.
Source: Department of Education, December 1, 2001 Instructional Salary data.

School System	Average State-Mandated Minimum Salary	Average Voluntary Local Supplement	Average Annual Salary
Roane County	$28,939	$9,627	$39,805
Harriman City	$29,248	$7,940	$38,532
Robertson County	$28,014	$8,426	$37,281
Rutherford County	$28,035	$10,793	$39,671
Murfreesboro City	$28,424	$11,802	$41,092
Scott County	$28,201	$5,669	$34,756
Oneida SSD	$28,503	$7,144	$36,517
Sequatchie County	$27,531	$4,992	$33,488
Sevier County	$28,905	$9,385	$39,447
Shelby County	$28,384	$15,934	$45,128
Memphis City	$28,211	$16,895	$46,189
Smith County	$27,861	$5,550	$34,560
Stewart County	$27,879	$6,023	$34,878
Sullivan County	$28,809	$8,591	$38,586
Bristol City	$28,539	$14,934	$44,522
Kingsport City	$28,890	$16,101	$46,399
Sumner County	$28,158	$9,419	$38,670
Tipton County	$27,611	$8,488	$36,921
Covington City	$27,587	$7,745	$35,985
Trousdale County	$28,243	$5,057	$34,429
Unicoi County	$28,553	$5,175	$34,677
Union County	$27,749	$4,922	$33,517
Van Buren County	$27,674	$4,508	$33,203
Warren County	$28,404	$6,751	$36,525
Washington County	$28,506	$8,235	$37,950
Johnson City	$28,609	$12,359	$42,089
Wayne County	$29,065	$4,064	$34,746
Weakley County	$28,237	$6,475	$35,819
White County	$28,423	$4,471	$34,470
Williamson County	$28,067	$12,882	$41,889
Franklin SSD	$28,485	$15,825	$45,274
Wilson County	$27,871	$7,775	$36,527
Lebanon SSD	$27,789	$9,205	$38,025
STATEWIDE	**$28,301**	**$10,692**	**$40,072**

Note: First and second columns do not add to third because of federal funding and career ladder funding.
Source: Department of Education, December 1, 2001 Instructional Salary data.

Appendix 7: Organizations/People Contacted

Bedford County Schools
Robert Daniel, Controller

Center for Business and Economic Research, University of Tennessee, Knoxville
Patricia Price, Senior Research Associate

Cleveland City Schools
Brenda Jones, Receptionist, Business Department

Dickson County Alternative Learning Center
John Gunn, Principal

Economic Policy Institute
Richard Rothstein, Research Associate

Franklin Special School District
Chris Henson, Director of Finance

Hardeman County Schools
Helen Kaufman, Head Bookkeeper

Hart, Freeland, Roberts Architecture
Stephen Griffin, Sr. Vice President

Heery International
Dale Randels, Vice President

Henderson County Schools
David Johnson, Director of Technology

Jefferson County Alternative Learning Center
Vicki Forgety, Principal

Johnson and Bailey Architects
Jim Bailey, Sr. Vice President

Lauderdale County Schools
Phillip Jackson, Director of Schools

National Conference of State Legislatures
Stephen Smith, Policy Specialist

NCS Learn, Nova Net
Julia McCombs, Account Representative

Orion Building Corporation
Jeff Penix, Project Manager

Peabody Center for Education Policy, Vanderbilt University
Jim Guthrie, Professor of Public Policy and Education

STH and Associates; Marion County School Board
Scott Hawkins, Vice Chairman

Tennessee Advisory Commission on Intergovernmental Relations
Harry Green, Executive Director
Cliff Lippard, Director of Fiscal Affairs
Lynnisse Roehrich-Patrick, Director of Special Projects

Tennessee Attorney General and Reporter
Kate Eyler, Deputy Attorney General

Tennessee Comptroller of the Treasury
Art Alexander, Assistant Director, Division of County Audit
Greg Worley, Audit Review Manager, Division of County Audit
Bill Case, Local Government Manager, Division of Municipal Audit
Diana Jones, Performance Audit Manager, Division of State Audit

Tennessee Department of Education
Tom Bayersdorfer, Director of Information Technology
Jerry Bates, Director of Applied Technology
Lisa Cothron, Executive Director, Office of Technology
Mike Herrmann, Director, Tennessee School Safety Center
Melissa Brown, Director of Research
Melissa Hinton, Director of Local Finance
Jim Jones, Executive Director, Office of Local Finance and Auxiliary Services
Ken Nye, Executive Director, School Health Programs
Jeff Roberts, Deputy Commissioner
Kathy Zamata, Education Consultant, Tennessee School Safety Center

Tennessee Department of Health
Lynn Jackson, Director of School Health

Tennessee Education Association
Graham Greeson, Director of Research

Tennessee General Assembly
Rep. Harry Tindell
Rick Nicholson, Research Analyst, Senate Education Committee
Jessica Peccolo, Research Analyst, House Education Committee

Tennessee Organization of School Superintendents
Tony Lancaster; Executive Director
26 respondents to superintendents survey

Tennessee School Board Association
George Nerren, Consultant
Deborah Noe, Staff Attorney
Stephen Smith, Director of Government Relations

Tennessee State Board of Education
Douglas Wood, Executive Director
Mary Jo Howland, Senior Research Associate
Karen Weeks, Senior Research Associate

Williamson County Alternative Learning Center
Gale Colvert, Director

Appendix 8: Response from the Department of Education

STATE OF TENNESSEE
DEPARTMENT OF EDUCATION
6TH FLOOR, ANDREW JOHNSON TOWER
710 JAMES ROBERTSON PARKWAY
NASHVILLE, TN 37243-0375

PHIL BREDESEN
GOVERNOR

LANA C. SEIVERS, Ed.D.
COMMISSIONER

July 1, 2003

Ms. Ethel Detch
State of Tennessee
Comptroller of the Treasury
Office of Education Accountability
505 Deaderick Street, Suite 1700
Nashville, Tennessee 37243-1268

Dear Ms. Detch:

The Department of Education has reviewed the BEP Report prepared by the Office of Education Accountability and concurs with the recommendations and conclusions.

We look forward to working with you in the future.

Sincerely,

Lana C. Seivers, Ed.D.
Commissioner

LCS:cs

Offices of Research and Education Accountability Staff

Director
◆Ethel Detch

Assistant Director (Research)
Douglas Wright

Assistant Director (Education Accountability)
◆Jason Walton

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◆Richard Gurley
Margaret Rose
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◆Emily Wilson

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Bonnie Adamson
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Russell Moore
Alisa Palmisano
Melissa Jo Smith

Legislative Research Interns
Bintou Njie
Amanda Spears

Executive Secretary
◆Sherrill Murrell

◆indicates staff who assisted with this project

Former Principal Legislative Research Analyst Dan Cohen-Vogel served as lead researcher for the initial stages of this report.