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Estimating the Cost of an Adequate Education in Connecticut

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Prepared for

The Connecticut Coalition for Justice in Education Funding

June, 2005

EXECUTIVE SUMMARY

In today's world of No Child Left Behind (NCLB), increased accountability for student, school and district performance, and a steady growth in high-stakes testing, there is mounting pressure on education systems to ensure that all students leave school with the tools and skills they need to succeed in life. Such increased pressure can have a positive influence on performance, but only if policy makers and education leaders also have the capacity to answer what might appear to be a simple question: Do schools and districts have the resources they need to meet performance expectations?

Education funding is an actively debated topic in states, school districts and communities across the country. Some believe schools already have plenty of resources to fulfill their mission and point to dramatic increases in education funding that have been delivered over the past decade. Others, however, believe that schools are in need of additional funds to address uncontrollable and rapidly growing cost pressures. Still others take the position that, while some schools are in need of additional funds to successfully carry out their missions, other schools are already sufficiently funded.

What is true regardless of one's view on the current condition of school funding, is that many state education finance systems have not addressed the question of "adequate" education funding. In many states, for instance, policy makers have developed academic standards and timetables to achieve performance expectations. And they have created accountability systems with consequences for schools and districts when expectations are not met. Most often, however, these expectations and consequences are created without understanding what it costs for schools and districts to meet desired outcomes. This "funding adequacy" report is designed to help address this issue in Connecticut and to develop a supportable means for policy makers and other education leaders to estimate what it will cost for each district in the state to achieve the performance that is expected of them.

The report – prepared by Augenblick, Palaich and Associates, Inc. (APA), a Denver-based consulting firm that has worked with state policy makers on school funding issues for more than 20 years – focuses on determining two key cost elements:

- (1) A base, per-student cost; and
- (2) Additional cost "weights" (which are applied to the base cost) for students with special needs, including: children who are:
 - In special education;
 - At-risk of failing in school (based on the number of students receiving free or reduced-price lunches); and
 - English language learners (ELL).

When the base cost and added cost weights are combined, an ultimate cost of adequately educating students to meet state and federal standards can be determined. APA's experience conducting funding adequacy studies in other states, however, has revealed the importance of addressing a variety of additional factors. In Connecticut's case, APA was

particularly concerned with studying whether costs varied by grades served, by size of school district, and by specific aspects of special need student populations (including the cost impacts of having different concentrations of at-risk students and of serving students with mild, moderate, or severe special education needs). The report's analysis was therefore designed to produce results that could indicate whether such cost variances existed and, if so, the magnitude of the differences.

While the findings reported here can be used to estimate the cost of adequacy in most school districts in Connecticut, APA did not estimate the cost of adequacy in charter schools, magnet schools, vocational education centers, or in privately endowed academies. It should also be noted that the focus of this report is on current operating expenditures, and not on the cost of constructing facilities. In addition, transportation and food services have been excluded from our analysis.

In conducting its work, APA drew upon two well-established data gathering and analysis techniques: (1) a "successful school district" (SSD) approach; and (2) a "professional judgment" (PJ) approach. Under the SSD approach a base, per-student cost is determined by examining the spending of school districts that successfully meet state performance standards (35 districts in Connecticut qualified as successful districts for this study). The SSD approach offers an important view on the *present*-day spending of successful schools. It does not, however, provide information about the added cost adjustments required for special education, ELL or at-risk students.

The PJ approach relies on panels of experienced educators and education service experts to specify the resources needed for different size schools and districts to educate their students to meet state and federal performance expectations. Panelists, for instance, review current state and federal academic standards and requirements and are asked to outline the resources they believe are needed to meet those requirements in large, medium and small K-12 districts. In contrast to the successful school district analysis, the professional judgment approach is particularly useful in examining the *future* costs of districts in meeting state performance standards.

Key Findings

Comparing and integrating the findings from both the SSD and PJ approaches offers an opportunity to look through two different “lenses” to see an overall clearer picture of the resources needed for Connecticut schools and districts to succeed. By looking through these lenses, APA identified:

- 1) A “**starting**” base, per-student cost. Drawn from the SSD analysis using 2003-04 data, this cost offers Connecticut policymakers a launching point from which to begin addressing the needs of districts that currently do not receive adequate funds to meet even interim state and federal performance standards; and
- 2) The “**target**” base, per-student cost. This cost, which is drawn from the professional judgment group analysis, would need to be adjusted for inflation from 2003-04. It represents the full, base cost of educating students to reach state and federal standards and is the ultimate funding level for which policy makers should aim in order to hold all schools and districts fully accountable.

As shown in the box below, both the starting and target base costs vary with district size and the types of grades served. APA believes Connecticut policy makers should seek to reach the *target* base funding level by 2010-11 in order to assure that school districts have adequate revenues for at least three years prior to 2013-14 – the final year of No Child Left Behind.

<u>Base Per-Student Cost by Size and Grade Configuration*</u>						
Size of District	<u>Starting 2003-04 (using SSD data)**</u>			<u>Adequacy Target (using PJ data)</u>		
	K-12	K-6/8	7/9-12	K-12	K-6/8	7/9-12
100	\$7,086	\$8,823	\$7,019	\$9,447	\$9,447	\$9,445
250	\$7,067	\$8,804	\$7,012	\$9,428	\$9,428	\$9,438
500	\$7,035	\$8,772	\$7,001	\$9,396	\$9,396	\$9,427
1,000	\$6,971	\$8,709	\$6,979	\$9,333	\$9,333	\$9,405
2,000	\$6,846	\$8,583	\$6,935	\$9,207	\$9,207	\$9,361
4,000	\$7,614			\$9,999		
7,500	\$8,003			\$10,388		
10,000	\$8,003			\$10,388		
15,000	\$8,003			\$10,388		

Notes:
 *All figures must be adjusted for inflation after 2003-04.
 **This starting cost, which is applied to 2003-04, would be two years out of date if it were used to allocate state aid in 2005-06.

The base cost, however, does not address all costs that schools and districts face. First, it does not address the added costs involved with educating students in districts with “urban” characteristics. In conducting its professional judgment analysis, APA found that experts consistently identified a series of extra costs involved with operating such urban districts in Connecticut. To account for this response, APA created a separate “*urban factor*” as an added cost adjustment for some districts.

Creating an “Urban Factor”

Experts panelists assembled by APA identified a unique set of challenges facing Connecticut’s “urban” districts. To help address these challenges, APA recommends applying an added cost adjustment (equivalent to a weight of .121) to urban districts.

District Size	<u>Special Education</u>			<u>ELL</u>
	Mild	Moderate	Severe	
100	1.34	2.11	4.88	.76
250	1.34	2.11	4.88	.76
500	1.34	2.11	4.88	.76
1,000	1.34	2.11	4.88	.76
2,000	1.34	2.11	4.88	.76
4,000	1.11	1.69	4.41	.76
7,500	1.02	1.52	3.94	.76
10,000	1.06	1.49	3.71	.76
15,000	1.12	1.45	3.32	.76

Second, the base cost only addresses the price of educating those students who have no special needs. Funds therefore also must be calculated and provided to address the added cost of educating at-risk students (based on the percentage of such students in a district’s enrollment) and students in special education or ELL programs. Added cost weights for educating such students are shown in the boxes.

An analysis of these added cost weights offers some important findings for policymakers. In particular:

- As the concentration of at-risk students in a district increases, the per-student weight decreases by about half. At the same time, however, the overall cost impact – when spread across all students – more than quadruples.
- The added cost weights for special education students generally decrease as district size increases.

Concentration of At-Risk Students	Weight At-Risk Students	Impact on Cost of All Students
10%	.62	6.2%
20%	.47	9.4%
30%	.43	12.8%
40%	.38	15.3%
50%	.36	18.0%
60%	.34	20.4%
70%	.32	22.4%
80%	.30	24.0%
90%	.28	25.2%

- The added cost of educating students who are English language learners remains basically the same regardless of district size.

Having calculated base costs and added student weights, APA estimates a “starting” and “target” cost of adequacy in a district of any size and with any combination of demographic characteristics. Several hypothetical examples listed in Chapter V illustrate how these costs can be determined in any specific Connecticut district.

APA’s analysis can also, however, be used to answer a more global question: How do the projected starting point and adequacy target compare with *current overall* education spending in Connecticut? The table below shows that, in 2003-04, 93 school districts were funded insufficiently (by a total of \$509.9 million) to reach the “starting” base cost. A total of 145 districts were funded insufficiently (by \$2.07 billion) to reach the full adequacy “target.”

COMPARING THE COST OF ADEQUACY TO 2003-04 SPENDING IN CONNECTICUT		
	<i>The Starting Point</i>	<i>The Funding Target</i>
Number of districts needing revenue	93	145
Number of students in districts needing revenue	413,502	543,713
Funds needed	\$509.9 million	\$2.07 billion

These gaps between current spending and the amount needed to reach either the starting point or the ultimate funding target indicate that there is significant work to be done in modifying Connecticut’s school finance system. And yet, this work is certainly achievable. The knowledge gained through this report could be used to modify the state’s existing aid system so that it guarantees every school district has sufficient revenue to successfully meet existing performance expectations.

In closing, it is important to note that APA’s analysis focuses on the total amount of funding required to raise school districts in Connecticut to an adequate funding level. The report does not discuss where needed revenues might come from, but typically funds come from a combination of federal, state, and local revenues.

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I. INTRODUCTION

This report was prepared by Augenblick, Palaich and Associates, Inc. (APA), a Denver-based consulting firm that has worked with state policy makers on school funding issues for more than 20 years. It was prepared for the Connecticut Coalition for Justice in Education Funding (CCJEF), an organization representing communities throughout the state with an interest in state aid for elementary and secondary education. The report focuses on the “adequacy” of funding for public schools in Connecticut – where adequacy means the costs school districts face in order to fulfill state and federal resource requirements and performance expectations. Its key purpose is to help school districts, taxpayers, and policy makers understand the revenues school districts need in order to produce the student results that are expected of them. To accomplish this goal, APA’s work focuses on determining two key elements:

- (1) A base cost, per-student (including the cost of plant operation and maintenance, but excluding costs of student transportation, food services, community services, adult education, capital costs, and debt service costs); and
- (2) Additional cost “weights” for students with special needs (including at-risk students, special education students, and English language learners).

In conjunction with individual district characteristics (such as location, district size or grade span), these elements can be used to estimate the cost of adequacy in K-6, K-8, K-12, and high school districts in Connecticut. APA did not, however, estimate the cost of adequacy in charter schools, schools operated by regional service centers, vocational-technical schools, or in privately endowed academies.

Two approaches were used to help determine the base cost and additional cost weights for students: the “professional judgment” approach and the “successful school district” approach. Each of these approaches, which have been used effectively in other states, differs in underlying philosophy and in the robustness of results produced. Since APA was particularly interested in whether costs varied by grades served, by size of school district, and by location, the analysis was designed to produce results that could indicate whether such differences existed and, if so, the magnitude of the differences. Based on the analysis, a series of formulas are produced (located in Appendix D) so that results can be applied to the characteristics of individual school districts throughout the state.

The Importance of Examining the Cost of Adequacy

For the purposes of this report, “adequate revenues,” or “adequacy,” means: sufficient funding so that school districts have a reasonable chance to meet state and federal student performance expectations. Such performance expectations are reflected in Connecticut’s state education accountability system, the state’s federally-approved plan to comply with the No Child Left Behind Act (NCLB), and other requirements associated with the Individuals with Disabilities Education Act (IDEA).

There are two primary, inter-connected reasons to determine the cost of adequacy:

- (1) To understand the cost implications associated with meeting state and federal requirements/expectations; and
- (2) To estimate needed adjustments to existing state school finance formulas.

With regard to meeting state and federal requirements, the fact is that most states (including Connecticut) and the federal government have decided that standards-based reform is the best way to improve the elementary and secondary education system in this country. Under standards-based reform, the role of the state is to: (1) set standards for students, teachers, schools, and/or school districts (in terms of both “inputs”, such as teacher qualifications, course offerings, or service requirements, and “outcomes”, such as student performance on achievement tests, attendance, or graduation rates); (2) measure how well students, teachers, schools, and/or school districts are doing (which may mean developing assessment procedures specifically tied to the standards); and (3) hold students, teachers, schools, and/or school districts accountable for their performance (sometimes associated with consequences either for meeting or not meeting standards).

At the outset of the standards-based reform movement, starting with the reform of the Kentucky education system in 1990, most states and the federal government did not attempt to estimate the costs that every school or district would incur in order to meet state/federal performance standards. Determining such costs has therefore become an essential missing piece that state policy makers need in order to understand what resources are required for schools and districts to succeed. Once these costs are determined, state policy makers also need to be able to properly incorporate them into the state’s school finance system.

Connecticut, like many states, uses a “foundation-type” formula as the basis for allocating a majority of the state’s aid to school districts (in Connecticut the procedure is embodied in the Education Cost Sharing [ECS] system). Under a foundation approach, the state typically determines a “target” amount of revenue per student (combining a fixed, base amount – the foundation level – with added amounts for students with special needs). Districts are required to make a state-calculated amount of local tax effort to help meet the foundation level. In Connecticut, that amount is based on property wealth and the relative income levels of communities. Due to differences in property values, however, the same tax effort can raise varying amounts of funds from district to district. To help level the playing field between wealthy and poor districts, the state makes up the difference between the amount of revenue generated by the property tax and the amount guaranteed as the foundation target.

In some states the foundation level is calculated based on the amount of revenue needed for a student with no special needs attending school in an average size school district. In other states, student weights, such as those used in Connecticut, are used to help reflect the added cost of serving students with special, high cost needs. Weights can also be used to reflect the added cost of providing services in districts that face

uncontrollable cost pressures – often related to a district’s size or regional cost differences. In many states – including Connecticut – however, the determination of the foundation level is based primarily on total available revenue and does not take into account the state (and federal) expectations for district and school performance. Such a method for determining the foundation does not reflect the level of resources needed to fully implement standards-based reform.

Approaches to Estimating the Cost of Adequacy

In the past few years, states have begun to develop approaches that can calculate a cost that reflects a particular level of desired student performance. These efforts are designed to create a base cost that has meaning beyond simply reflecting available state revenue. Four approaches have emerged as ways to determine such a base cost:

- (1) The successful school district approach;
- (2) The professional judgment approach;
- (3) The evidence-based approach; and
- (4) The statistical approach.

Each of these methodologies has strengths and weaknesses. They differ in their underlying philosophies, the amounts of information they require, the types of information they produce, the number of states in which they have been used, and the magnitude of the parameters that they estimate.

APA has come to believe that the successful school district approach provides a reasonable estimate of the base cost in relation to what school districts are accomplishing at present. Under this approach a “base cost” is determined by examining the basic spending of districts that meet state standards. The base cost applies to students with no special needs attending schools in districts that do not face unusual cost pressures.

We have found that the professional judgment approach provides a reasonable estimate of the base cost for a level of performance expected in the future. It also provides information about the additional costs of serving students with special needs or of serving students in districts that vary in size. The approach relies on the views of experienced educators and education service providers to specify the resources needed for schools and districts to achieve a set of specified performance objectives. Once the services have been specified (with a focus on numbers of personnel, regular school programs, extended-day and extended-year programs, professional development, and technology), costs are attached and a per pupil cost is determined.

APA has found that the statistical approach – which is based on understanding those factors that statistically explain differences in spending across school districts while controlling for student performance – cannot be used effectively in many states due to a lack of available information. In particular, there is often a lack of needed fiscal data at the school level. We have found the evidence-based approach – which seeks to

use information gleaned from research to define the resource needs of a hypothetical school district – to also be limited in its usefulness.

Drawing on our experience, APA therefore recommended – and subsequently conducted – an adequacy analysis for Connecticut based primarily upon **both** the successful school district and professional judgment approaches. The use of both is advantageous to policy makers because it allows for a more thorough examination that can better account for inherent differences among approaches.

The remaining chapters of this report are organized as follows:

- Chapter II discusses the standards and student performance expectations that exist in Connecticut.
- Chapter III describes the successful school district approach and the base, per-student cost figures it produced.
- Chapter IV describes the professional judgment approach and the results it produced including base cost figures and added costs for students with special needs.
- Chapter V explains differences in the results produced by the successful school district approach and the professional judgment approach and creates the weights and formulas needed to estimate the cost of adequacy. This chapter also:
 - Compares the cost of adequacy to comparable spending for all 166 school districts in 2003-04.
 - Includes a discussion of regional cost-of-living differences.
 - Discusses how the state might move from prior spending levels to target levels in the future.

II. CONNECTICUT'S ACADEMIC STANDARDS AND STUDENT PERFORMANCE EXPECTATIONS

For purposes of this report “adequacy” or “adequate education revenues” means the amount of funding needed so that school districts can meet state and federal student performance expectations. In order to calculate funding adequacy in Connecticut, it was therefore necessary to understand and use the state’s current academic performance standards.

In defining performance, states primarily use two measures of success:

1. Input measures focus on the types of resources and programming, the number of teachers, and the courses that should be offered to students.
2. Output measures focus on student performance – typically based on statewide tests administered in multiple subject areas at different grade levels. Minimum graduation rates, maximum dropout rates, and minimum attendance rates are also considered output measures.

To conduct the successful school district and professional judgment group studies, APA reviewed current Connecticut statutes, state board position statements and guidance, and student achievement results. From this collection of expectations and results, APA determined the cutoff scores for student achievement results that became the basis for selecting school districts for the successful school district approach. In addition, this collection helped APA develop a description of expectations and results that was ultimately used by the professional judgment panels in their deliberations about what resources are needed to help virtually all students meet state standards.

For the professional judgment panels, APA created a seven page summary of the state’s legislative requirements, state board guidance and performance expectations. This document, included in Appendix B of this report, was given to every panel member. Panelists were instructed to focus on this standard to estimate the resources that schools and districts need to be successful. As the document shows, APA found that Connecticut statutes and rules establish both input and output standards.

The input standards focus on two key elements:

- (1) Length of the school year; and
- (2) Prescribed courses of study.

Further, the state board of education offers districts guidance in a number of areas including pre-school, standards of performance and accountability and the equality of education opportunity. It is expected that local education leaders and educators strive to produce a highly educated citizenry, Connecticut’s most valuable resource.

The state's output standards focus on Connecticut's Common Core of Learning and its associated standards of performance. District performance is also measured by the state's mastery test (CMT) and academic performance test (CAPT), as well as the state's agreement with the federal government about how to measure adequate yearly progress under NCLB.

For APA's successful school district analysis, it is important to note that the state standards outlined above (which the professional judgment groups relied on to conduct their work) were scaled back. In the successful school approach, districts were selected for the analysis based only on their success in helping students meet the state's AYP output goals for 2007-08. A combination of reading and math sub-scores of the CMT and CAPT are used by the state to determine AYP (per the state's agreement with the federal government) and to measure school and district progress.

The successful schools approach focuses only on the 2003-04 average performance of school districts – specifically looking for those districts that are meeting the AYP performance standards for 2007-08. The professional judgment approach, on the other hand, focused on the resources needed for districts to meet performance targets in 2013-14, which in Connecticut are slated to rise over the intervening decade. Also, in the successful school district approach the degree to which districts and schools met the state's input requirements was assumed and not examined due to the difficulty in gathering specific resource data for every school and district selected.

These important differences between the two studies result in different answers to the question of what constitutes adequate funding for districts and schools. An explanation and reconciliation of the differences – which APA describes in Chapter V – offers policy makers an opportunity to look through two different “lenses” to see a clearer picture of the resources needed for schools and districts to succeed over time.

TABLE II-1

DIFFERENCES BETWEEN THE STANDARDS USED FOR THE SSD AND THE PJ APPROACHES IN CONNECTICUT		
	SSD	PJ
Academic Standard Used	CMT and CAPT tests for reading and math, average score for the district, proficient level (2007-08 AYP targets)	CMT and CAPT tests for reading and math, average score for the district, state goal level, plus writing
Percent of Students Required to Meet Standard	Between 79% and 82% depending on the test	Approximately 95%
Sub-group Goals Included	No	Yes, at proficient level
Rules and Regulations	Assumed	Considered

III. IMPLEMENTING THE SUCCESSFUL SCHOOL DISTRICT APPROACH IN CONNECTICUT

The successful school district (SSD) approach assumes that resource needs can be determined by examining the spending of school districts that meet state performance expectations. The approach is used only to estimate a base, per-student cost of serving students with no special needs in districts with no unusual cost-related characteristics. In this regard, the approach differs from the professional judgment approach – described in Chapter IV – which examines both base per-student costs and the additional cost of serving students with special needs (including English language learners, at-risk children and those who are in special education).

To complete an SSD analysis, two tasks must be undertaken: (1) identify a set of districts that successfully meet state student performance expectations; and (2) estimate a basic spending level for successful districts in order to calculate a base cost figure. The remainder of this chapter describes how APA conducted these tasks and describes the conclusions we were able to draw from the analysis.

How Successful School Districts Were Identified

In Connecticut, students attend schools in a variety of entities, including 106 K-12 districts serving cities and towns, 45 K-6 or K-8 districts serving towns (K-6/8), seven regional K-12 districts serving several towns, eight regional 7-12 or 9-12 districts (7/9-12) that receive students from sending K-6/8 districts, six regional education service centers (RESCs), 18 charter schools (organized as pre-schools, K-8 schools, middle schools, or high schools), two privately endowed academies, and numerous vocational-technical centers (considered to be a single statewide entity). The vast majority of students, 95.8 percent, attend school in one of the 166 municipal K-12 or K-6/8 school districts or regional K-12 or high school districts. All of APA's work on the SSD analysis focused on these 166 districts.

Because we wanted to calculate a base cost figure that could be applied to all 166 school districts in the state, APA needed to select a set of districts that successfully met state student performance expectations on the basis of criteria that could be applied to every school district. The choice of the appropriate criterion for Connecticut was not as obvious as in other states.

This is because the district grade level and governance configurations in Connecticut are unique and the exact same assessments cannot be used for every district. For instance, the state has assessments in reading and math (the Connecticut Mastery Test (CMT) and Connecticut Academic Performance Test (CAPT)). The CMT measures the performance of students at grades 4, 6, and 8 in reading, writing, and math and reflects the standards of the state's Curriculum Frameworks. The CAPT is designed to measure students' ability to apply what they have learned in school to situations they may encounter in real life, but is typically only administered in grade 10. Therefore, one can examine both CMT and CAPT scores in K-12 districts. But in K-6/8 districts only CMT performance can be considered (because there is no grade 10).

Connecticut does have established performance standards – based on scale scores – for each of its tests. The performance categories include Advanced, Goal, Proficient, Basic, and Below Basic. The top two levels (Advanced and Goal) represent the state’s adopted mastery standard. The state and the federal government, however, have agreed to use the lower Proficient level for calculating Connecticut’s adequate yearly progress (AYP) under the No Child Left Behind Act. For the purposes of identifying successful schools, APA also decided to use the AYP Proficient level on the CMT and CAPT, set at the 2007-08 performance requirement.

Use of the Proficient level on Connecticut’s state tests represented a conservative student achievement objective that a reasonable number of districts could meet. Using only a single year of data, however, would mean that no attention is paid to performance changes over time. That is, students in a district might do well in one year but test scores may decrease over time (or single year scores might be an anomaly reflecting an unusual event). In order to address this concern, APA decided to add a second criterion for a district to be considered “successful” – requiring districts to meet the 2007-08 AYP Proficient level consistently *for three consecutive school years* (2001-02, 2002-03 and 2003-04). The results of applying these criteria to the 166 municipal K-12 or K-6/8 school districts are shown in Table III-1. The 35 identified districts were the only ones to meet APA’s criteria. As discussed in the next section, APA used data from these 35 districts to calculate a base, per-student cost estimate.

TABLE III-1 DISTRICTS SELECTED AS “SUCCESSFUL” USING THE 2007-08 AYP PROFICIENT LEVEL IN CONNECTICUT			
	Number of Districts	Number of Selected Districts	Names of Selected Districts
K-12	106	25	Avon, Berlin, Brookfield, Cheshire, Darien, East Lyme, Fairfield, Farmington, Glastonbury, Granby, Greenwich, Guilford, Litchfield, Madison, Monroe, New Canaan, Newtown, North Haven, Ridgefield, Simsbury, Somers, South Windsor, Weston, Westport, Wilton
Regional Districts	15	3	Regional District No. 10, Regional District No. 13, Regional District No. 15
K-6/8 Districts	45	7	Chester, Easton, Hebron, Mansfield, New Hartford, Orange, Redding

How Successful Districts Were Used to Calculate Base Cost

The total current operating cost of a school district includes the base cost, the costs associated with serving students with special needs, and the cost of transportation, food services, and community services. Base cost is defined as the cost of serving a student with *no* special needs (that is, a student not in a special education program, not at risk of failing, and not an English language learner [ELL]). While the base cost includes the cost of plant operation and maintenance, it excludes costs of student transportation, food services, community services (including adult education), capital costs, and debt service costs.

In order to calculate a base cost figure, it is necessary to use the basic spending of school districts, where basic spending excludes the items discussed above. APA asked the Connecticut Department of Education to help calculate the basic spending of every successful school district. The figures provided by the Department allowed for the separation of current operating expenditures from capital expenditures (capital outlay and debt service). They also allowed for the removal of spending for transportation, food services, and other community services. In addition, the figures provided allowed APA to remove federal and state spending for special education, at-risk students, and ELL students. (Since spending for special needs students is not tracked by school districts, however, APA may not have been able to remove completely all local or district revenues used to support those services.)

It should be noted that every state with which we are familiar has some difficulty in calculating a basic expenditure figure because accounting systems are not designed to track spending by type of student being served or by type of service being delivered. In both Illinois and Maryland, APA actually undertook a detailed review of accounts, at additional expense, to obtain a better estimate of basic expenditures. Based on a comparison between the statewide averages of such figures, we do have faith in the base cost figures created here for Connecticut.

As shown in Table III-2 below, the 2003-04 weighted average expenditures of the 25 K-12 and 3 regional districts selected as being successful was **\$7,716**. The weighted average expenditures of the 7 successful K-6/8 districts was **\$8,635**.

TABLE III-2 WEIGHTED AVERAGE EXPENDITURE PER PUPIL OF DISTRICTS SELECTED BY THE SUCCESSFUL SCHOOL DISTRICT APPROACH USING THE 2007-08 AYP PROFICIENT LEVEL IN CONNECTICUT			
	Number of Districts	Number of Selected Districts	Weighted Average Expenditure per Pupil
K-12 and Regional Districts	121	28	\$7,716
K-6/8 Districts	45	7	\$8,635

IV. IMPLEMENTING THE PROFESSIONAL JUDGMENT APPROACH IN CONNECTICUT

The professional judgment approach relies on the assumptions that experienced educators can specify the resources hypothetical schools need in order to meet state standards, and that the costs of such resources can be determined based on a set of prices specific to those resources. Identified resources are typically divided into two groups:

- (1) Those associated with a “base cost” that applies to all students; and
- (2) Those associated with students who have special needs.

For example, thinking about the base cost, a professional judgment panel of experienced educators might find that, for a hypothetical school with 200 students, ten teachers would be needed so that students can meet state academic standards. If the statewide average salary and benefits of a teacher were \$40,000, then the cost per student based on the professional judgment panel’s input would be \$2,000 (10 teachers times \$40,000/teacher divided by 200 students). Based on the panel’s judgments, other costs might also need to be incurred such as those associated with teacher aides, school principals, supplies and materials, and so on. Together, these costs could be added to determine the total “base” cost of providing an adequate education. In the case of this study, APA also examined whether base costs should vary by school district configuration (based on the grades the schools serve), school district size, and regional cost-of-living and whether the weights for students with special needs should vary by district size and regional cost-of-living.

Professional judgment panels are also asked to separately estimate the resources needed to serve students with special needs. Students with special needs include:

- Those in special education programs (for which students require individual education plans [IEPs]);
- Those with language difficulties (whom we refer to as English language learners [ELL students] but who might include students in bilingual programs, limited-English proficient students [LEP students], or students in English as a second language [ESL] programs);
- Those who are at risk of failing in school (the count for which we estimate based on a proxy measure – which is eligibility for free or reduced-price lunch – rather than on a direct measure of student performance).

Using the professional judgment approach, the additional cost of serving students with such special needs can be expressed through student “weights” relative to the base cost.¹

¹ Pupil weights are factors used to express the added cost of serving students with special needs. Every student, regardless of special needs, is counted as 1.00 student. In order to determine the base cost of a district, the number of students enrolled in the district is multiplied by 1.00 and that product is then multiplied by the base cost figure. If the *added* cost of serving a student with a special need were

The ability to identify resources for such special needs students distinguishes the professional judgment approach from the successful school district approach discussed in Chapter III of this report. This is because the successful school district approach only allows for an examination of base, per-student costs.

Creating Hypothetical Schools

Hypothetical schools are ones designed to reflect statewide average characteristics or the average characteristics of sub-groups of school districts. To the extent that all of the schools within a state would be reasonably well represented by a single set of hypothetical schools, a single professional judgment panel would be sufficient to estimate funding adequacy. Due to the existing variations among Connecticut school districts, however, APA needed to use multiple professional judgment panels, each focused on hypothetical schools and/or districts of different configuration and size.

As shown in Tables IV-1A and IV-1B, nearly 573,000 students attended public schools in Connecticut in 2002-03, based on data available from the U.S. Department of Education's National Center for Education Statistics. Those students attended schools in 191 entities, including 106 K-12 districts serving cities and towns, 45 K-6 or K-8 districts serving towns (K-6/8), seven regional K-12 districts serving several towns, eight regional 7-12 or 9-12 districts (7/9-12), schools operated by the six RESCs, 16 charter schools (organized as preschools, K-8 schools, middle schools, or high schools), two privately endowed academies, and numerous vocational-technical schools (considered to be a single statewide entity). The vast majority of students, 95.8 percent, attend school in one of the 166 municipal K-12 or K-6/8 school districts or regional K-12 or high school districts (which exclude RESCs). All of our work, including estimates of the cost of adequacy, focused on those districts. Additional work would need to be done to understand the costs incurred by other entities (charter schools, RESCs, and privately-endowed academies) in order to determine whether their costs are similar to those of regular school districts and whether the weights and size adjustment formulas would apply in the same way.

Among the 166 school districts that were the focus of our work, size and student demography vary significantly: 45 school districts have fewer than 1,000 students, 85 districts have between 1,000 and 5,000 students, 29 districts have between 5,000 and 10,000 students, and seven districts have over 10,000 students. The 159 districts with fewer than 10,000 students have very different demographic characteristics compared to the seven large districts. The smaller districts enroll 78.1 percent of all students in the 166 districts and, of their total students, 14.5 percent are at-risk students, 12.6 percent are in special education programs, and 2.0 percent are ELL students. The seven large districts enroll 21.9 percent of all students in the 166 districts but, of their

determined to be 60 percent of the base cost, then the weight applied to such a student would be .60 (for a total weight of 1.60). Additional weighting might be applied to all students in a district to account for certain district characteristics (such as size) that can impact per student costs.

total students, 62.6 percent are at-risk (low-income), 14.8 percent receive special education services, and 11.0 percent are English language learners.

Based on these variations, we divided Connecticut's 166 school districts into two groups, K-12 districts and K-6/8 districts, and then further subdivided the K-12 districts based on size (we did not subdivide the K-6/8 districts since none of them has more than 1,600 students). For the K-12 districts, we created three subgroups: (1) "small"; (2) "moderate"; and (3) "large". Our assumption was that we could develop a base cost for the regional high school districts based on the high school and district costs of K-12 districts.

APA then determined the average characteristics of each subgroup and developed a set of hypothetical schools and districts to represent the schools and districts in each subgroup. The characteristics of the subgroups are shown in Table IV-2. For example, the moderate K-12 hypothetical district had 4,970 students who attended six elementary schools with 420 students each, two middle schools with 525 students each, and one high school with 1,400 students.

To address the added cost of students with special needs in hypothetical schools, APA did the following:

- In order to obtain cost information for special education at three levels of severity (mild, moderate, and severe), we assumed statewide average proportions of students across all hypothetical schools (7.3 percent of all students had mild needs, such as learning disability, 3.6 percent had moderate needs, such as emotional disturbance, and 1.2 percent had severe needs, such as deaf-blind or autistic). Definitions were taken from the State's Strategic Profiles.
- In order to investigate whether the concentration of at-risk students had an impact on cost, we examined various levels of concentration in different hypothetical settings based on actual concentrations for districts of different type and size (for instance, we only looked at concentrations of 10 and 20 percent in K-6/8 districts while we looked at concentrations of 20, 40, 60, and 80 percent in large K-12 districts).
- In order to create a weight for ELL students, we assumed that 6.2 percent of elementary students were ELL and that 3.0 percent of middle and high school students were ELL.

Although any levels could be used to estimate cost, by approaching cost evaluation for special needs students in this way, APA's analysis gains several advantages. First, the numbers more closely resemble those found in actual schools across Connecticut. Second, the use of more realistic numbers means that the professional judgment panelists will be better able to relate to the hypothetical schools and districts that they were attempting to create.

Professional Judgment Panel Design

Based on APA's experience using the professional judgment approach in other states, we felt that it was best to use multiple levels of professional judgment panels. There are two reasons to use multiple panels: (1) it allows for the separation of school-level resources (which include such things as teachers, supplies, materials, and professional development) from district-level resources (which include such things as facility maintenance and operation, insurance, and school board activities); and (2) APA believes strongly in the importance of having each panel's work reviewed by another panel. Ultimately, a single overview panel reviewed all of the work. The panels were set up as follows:

- (1) School-level panels. Two panels addressed the school-level needs in different district configurations.
- (2) District-level panels. Three panels handled different size K-12 districts. The school-level panel addressing K-8 schools also handled K-8 district-level resource needs since these districts were so small.
- (3) Overview panel. The overview panel reviewed the work of all other panels.

Each panel had 6-8 people, including a combination of classroom teachers, principals, personnel who provide services to students with special needs, superintendents, and school business officials. Multiple panels were used to deal with schools and districts of varying sizes so that APA could determine whether size had an impact on cost.

School-level panels "built" hypothetical elementary, middle, and high schools designed to accomplish a specific set of performance objectives and standards (which are described in the next section on "Professional Judgment Panel Procedures"). District-level panels reexamined the work of the school-level panels and added personnel and other costs that tend not to be school-based (such as costs for district business staff or for an alternative school). The overview panel reviewed the work of the district panels, discussed resource prices, examined preliminary cost figures and attempted to resolve some of the inconsistencies that arose across panels.

Panel members were selected by Dr. Dianne Kaplan deVries, an education research consultant and CCJEF's project director. In order to set the panels, APA provided Dr. deVries a list of the job titles we were looking for as well as selection criteria in terms of experience, knowledge, and expertise. APA also specified that most panel members be selected from districts identified as being successful (based on our use of the successful school district approach as discussed in Chapter III) in order to assure that panel participants were basing their recommendations on experiences in school districts that were doing well. Geographic representation was encouraged.

The panels met in Hartford at the following times: the school-level panels met for two days in January 2005; the district-level panels met for two days in February 2005;

and the overview panel met for a day in February, 2005. Panel participants are identified in Appendix A.

Professional Judgment Panel Procedures

The panels followed a specific procedure in doing their work. Panelists first met jointly with APA staff to review background materials and instructions. These background materials were prepared by APA. In particular, panelists were instructed that their task was to identify what constitutes an “adequate” level of resources for hypothetical schools and districts. In order to calculate funding adequacy in Connecticut, it was therefore necessary for panelists to understand the state’s academic performance standards. These standards are described in Chapter II. Panelists were instructed to focus on this standard to estimate the resources that schools and districts need to be successful.

Individual panels examined the following types of resources:

- 1) Personnel, including classroom teachers, other teachers, psychologists, counselors, librarians, teacher aides, administrators, clerks, etc.
- 2) Supplies and materials, including textbooks, furniture replacement, and consumables.
- 3) Non-traditional programs and services, including before-school, after-school, pre-school, and summer-school programs.
- 4) Technology, including hardware, software, and licensing fees.
- 5) Other personnel costs, including the use of substitute teachers and time for professional development.
- 6) Other costs, including security, extra-curricular programs, insurance, facilities operation and maintenance, etc.

In the case of several categories of personnel (teachers, principals, instructional leaders, teacher tutors), APA provided panelists with starting resource levels that reflect research results that other analyses have used in estimating adequacy.² These figures were used to stimulate discussion and could be accepted, modified, or rejected by panel members.

It is important to note that capital, transportation, food services, adult education, and community services were *excluded* from consideration. For a variety of reasons, these elements pose data gathering difficulties and are generally too cost-specific to the characteristics of an individual district to be usefully included in a professional judgment adequacy analysis.

For each panel, the figures recorded by APA represented a consensus agreement among members. At the time of the meetings, no participant (either panel members or APA staff) had a precise idea of the costs of the resources that were being identified. Instead, APA costed the resources at a later date. This is, however,

² See, for example: “A State-of-the-Art Approach to School Finance Adequacy in Kentucky,” Odden, Fermanich and Picus, February 2003 for the Kentucky Department of Education.

not to say that panel members were unaware that higher levels of resources would produce higher base cost figures or weights. But without specific price information and knowledge of how other panels were proceeding, it would have been impossible for any individual, or panel, to suggest resource levels that would have led to a specific base cost figure or weight, much less a cost that was relatively higher or lower than another.

Once the panels completed their work, APA gathered salary data to cost out the personnel component of resources. To calculate these costs, we used statewide average salaries, adjusted by comparing Connecticut to neighboring states, and a statewide average benefit rate. Later we examined an intrastate cost-of-living factor that might be used to adjust costs in light of regional cost of living differences or variations in the cost of attracting and retaining personnel.

Professional Judgment Results

This section reviews the results produced by the professional judgment groups in Connecticut including some of the “raw” resources they identified, the prices that were attached to those resources, and the costs that were produced by combining resource quantities and resource prices. Specifically the section:

1. Discusses the resource needs identified by the professional judgment groups for hypothetical schools and school districts to meet state academic standards.
2. Identifies associated prices for the identified resources.
3. Applies the prices to the identified resources to generate a series of school-level, district-level, and total base costs and added costs for students with special needs.

It should be noted that the resources identified by the professional judgment panels here are examples of how funds might be used to organize programs and services in hypothetical situations. APA cannot emphasize strongly enough that the resources identified are not the only way to organize programs and services to meet state standards.

Notes Concerning the Professional Judgment Approach

1. The purpose of the study was to estimate the cost of adequacy, not to determine the best way to organize schools and school districts.
2. Figures are in full-time equivalent personnel terms and assume that schools can employ people on a part-time basis.
3. APA asked panels to distinguish the extra resources that students with special needs require. This posed some difficulty since many students with special needs are not treated separately in district funding streams.
4. We asked panels to be as precise as they could, but panel members sometimes found it difficult to precisely link resources to performance expectations.
5. Some activities are covered by specified resources without being addressed separately.
6. APA treated each group of students with special needs as if they were independent while, in reality, there may be cross-over among groups that leads to some double counting of resources (for example, some ESL students might also be eligible for free/reduced-price lunch).
7. Some resources were treated differently by different panels.
8. Some resources do not appear at the school level because they are accounted for at the district level.
9. The cost estimates do not include transportation, food services, adult education or capital outlay and debt service related to facilities. Some panelists noted that existing facilities might not be able to accommodate the programs they designed for hypothetical schools.

In fact, *There is no one best way to provide services and no member of our panels would suggest that resources be deployed precisely in the way the panels did for the purpose of estimating cost in each individual school district. The purpose of the exercise is to estimate the cost of adequacy, not to determine the best way to organize schools and districts.* This is particularly true when the circumstances in an actual district differ from those associated with the hypothetical ones. With this in mind, the box above offers a series of caveats for the reader to consider when reviewing this chapter.

Resource Needs Identified by the Professional Judgment Panels

The figures shown in Tables IV-3A, 3B, 3C, 3D, 3E, and 3F indicate the personnel needs of hypothetical elementary schools, middle schools, K-8 schools, and high schools in different size school districts based on the work of the professional judgment panels.

For example, looking at Table IV-3C (the moderate size K-12 district), the panel felt that 24 classroom teachers were needed for 420 elementary students (a ratio of one teacher to 17.5 students) and that five other teachers were also needed (to cover topics such as art, music, or language while providing classroom teachers with planning time). In addition, other personnel were needed to serve students with special needs (for example, two teachers with special education training and two instructional aides to serve 31 students with mild special education needs and two teachers, two aides, and four tutors to provide assistance if the concentration of at-risk students were 40 percent of all students [168 students]).

It should be noted that APA standardized the work of the panels and combined personnel into categories that may have differed slightly from the specific titles the panels used. In fact, because the tables are simply meant to be illustrative of the types of resources identified by the panelists, certain personnel may have been excluded because they could not be renamed or combined easily. While they do not appear in the tables, however, APA did include these positions into its calculations for overall personnel costs.

In order to make it easier to compare the resource needs of different size schools/districts, we took some of the information shown in the Table IV-3 series of tables and “normed” them so that figures could be shown in terms of “personnel per 1,000 students.” For example, in Tables IV-4A, 4B, and 4C the number of teachers, counselors, librarians, and principals (among others) are shown in such terms. Standardizing the personnel data in this way facilitates a better understanding of the relationship between personnel needs and district/school size.

In some cases, the ratios identified by the professional judgment panels work in ways that we expect based on our experience in other states. For example, as the size of a high school increases, the number of personnel per 1,000 students is expected to decrease (e.g., one principal for 500 students = 2.0 principals per 1,000 students; while one principal for 1,200 students = 0.8 principals per 1,000 students). In fact, according to the professional judgment groups, the ratio does decrease for principals in high schools (see Table IV-4C).

But this was not always the case for teachers or other personnel. Instead, the panels found the number of teachers required per 1,000 students in schools in large K-12 districts was similar to *or higher than* the ratios in small or moderate school districts. Our interpretation of this phenomenon is that the panels dealing with large districts were identifying what we will refer to later in this report as an “urban factor” that impacts the staffing needs of many large schools in Connecticut. This urban factor includes a wide variety of personnel and services that the panelists believed must be provided to all students in urban districts that have characteristics not captured solely by high concentrations of at-risk students.

A simple way to evaluate the staffing pattern suggested by the professional judgment panels in Connecticut is to compare their recommendations – specified as ratios of personnel per 1,000 students – to those suggested by similar panels in other states. In the table below, ratios of personnel for students without special needs in elementary schools in moderate size districts are shown (definitions of size obviously vary somewhat from state to state) for some of the states in which APA has used the professional judgment approach.

One thing to keep in mind in looking at these figures is that state accountability systems, and the expectations associated with them, are difficult to compare across states and may vary considerably. This variation makes the kinds of comparisons implicit in the table somewhat less meaningful than they appear to be. For instance, variances in state and federal performance expectations – such as those expressed in the No Child Left Behind Act (NCLB) – can dictate higher or lower staffing ratios from state to state. The importance of NCLB, however, has greatly increased since APA studies in other states were completed. (In fact, NCLB did not even exist when the work in Maryland, and Nebraska was undertaken.)

Viewed in this light, the figures shown in the table below suggest that the personnel needs identified for Connecticut are reasonable. They are in line with those of other states, (in fact only Oklahoma and Maryland’s identified overall personnel needs are lower than Connecticut) and, while the number of teachers desired in Connecticut is higher than it is in several other states, the number of desired other personnel is somewhat lower. What makes the resource needs identified by the Connecticut professional groups appear even more reasonable is that the panels did not specify unusually high personnel numbers despite having to meet the expectations associated with NCLB.

**How Do Connecticut's Personnel Needs Per 1000 Students
Stack Up With Other States?**

	<u>CT</u>	<u>MO</u>	<u>CO</u>	<u>KS</u>	<u>MD</u>	<u>OK</u>	<u>NE</u>
<u>Teaching Staff</u>							
Clssrm. Tchrs.	57.1	66.6	61.3	55.0	54.0	52.9	51.4
Other Teachers	11.9	11.1	10.0	12.5	8.0	14.8	12.9
<i>Total Teachers</i>	<i>69.0</i>	<i>77.7</i>	<i>71.3</i>	<i>67.5</i>	<i>62.0</i>	<i>67.7</i>	<i>64.3</i>
<u>Student/ Teacher Support</u>							
Teacher Aides	4.8	9.9	5.0	6.5	–	2.9	25.7
Guidance Couns.	0.5	2.5	2.5	5.0	–	2.9	1.4
<u>Other Staff</u>							
Lib./Media Spec.	2.4	2.5	2.5	5.0	2.0	2.1	2.9
<u>Administration</u>							
Principal	2.9	2.5	2.5	5.0	2.0	2.9	2.9
Asst. Principal	--	2.5	1.3	–	–	–	-
Cler./Data	4.8	6.2	2.5	5.0	8.0	4.2	2.9
Total Personnel	83.9	103.8	91.3	98.2	80.0	82.7	102.9

Note: This table is based on selected studies conducted by APA in other states and examines elementary schools in moderate size districts.

Aside from personnel needs, the figures in Tables IV-5A, 5B, 5C, and 5D show other resources needed in schools, including those associated with professional development, instructional supplies and materials, equipment, assessment, student activities, and safety/security. Many of these costs were standardized by the overview panel after reviewing the various approaches different panels had taken to develop their estimates.

One item which is shown separately is professional development. The attention to this particular cost area reflects the strong opinion of most panels that one of the most important contributors to the future success of schools is the assurance that teachers have time to: become familiar with their students, form strong working relationships with their colleagues, participate in enrichment programs, visit other schools, take part in training sessions, and improve their knowledge of curriculum, technology, and research. APA's experience is that, as standards-based reform has become the approach most states have embraced to improve schools, educators and

policy makers have concluded that teachers, and other school personnel, need many more opportunities, and much more time, to engage in serious professional development – perhaps even beyond that expected in other professions – and that such opportunities need to go well beyond what has traditionally been provided.

The panels also agreed that significant funds needed to be provided to support student activities, which they said could improve student attendance and academic performance. Such funds, the panels found, needed to be substantially higher in upper grades.

Tables IV-6A, 6B, and 6C indicate the other kinds of services the panels felt were needed to assure that schools could meet state performance expectations. Many of these programs are designed with the belief that investments made early, even before kindergarten, would alleviate the need for some services later on. Other programs are designed to supplement services in higher grades, particularly for at-risk students, or to comply with service requirements for special education students.

The technology needs of elementary, middle, and high schools are shown in Tables IV-7A, 7B, and 7C. In order to develop the technology needs, panels were given a standard list of equipment, based on recommendations of the Education Commission of the States (an interstate consortium of states to which Connecticut belongs). The panels modified this list as necessary. In most cases, panelists wanted to see an extensive array of technology available in classrooms, computer labs, media centers, and for teachers and administrative staff.

Resource Prices

The primary prices needed to cost out the resources specified above are the *salaries and benefits of personnel* and the prices assigned to different kinds of *technology equipment* (see Table IV-8). For personnel salaries, we used statewide average salaries for different personnel categories. A benefit rate of 29 percent was applied to all salaries to account for the costs associated with local contributions to the state retirement program as well as local contributions to locally operated health insurance programs (state contributions to education employee retirement accounts are excluded since they do not represent a cost to school districts; individual contributions are excluded since they are made out of salaries already included). In determining technology costs, we used 25 percent of the costs shown in Table IV-8 based on our assumption that equipment would be replaced every four years.

In other states where APA has conducted studies, we have sometimes adjusted the statewide average salaries used to estimate costs. This is done usually when we find that a state's average salaries are not competitive with other states and it therefore makes sense to raise salaries to help assure that qualified personnel can be hired. However, no such adjustment was made in this report because we found that Connecticut's salaries, on average, are slightly higher than the average of seven nearby states (Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island,

and Vermont). This was true even after APA adjusted salary data to take into account inter-state cost of living differences and differences in teacher characteristics (including education level and experience).

As shown in Table IV-9, we estimated how much education (having more than a B.A. degree) and each year of experience was worth in each state, adjusted by cost of living differences. Then we determined what the average salary would be in each neighboring state assuming a teacher had the same level of education and experience as Connecticut. We used 2001-02, 1999-2000, and 2000 figures because they were the most reliable information we could obtain (the actual Connecticut cost estimates use 2003-04 data).

With regard to teacher salaries, APA found that:

1. Starting salary: Connecticut's average starting salary was lower than that of one nearby state, comparable to that of one other nearby state, and higher than the remaining five nearby states.
2. Average salary (unadjusted): Connecticut's average, unadjusted salary was higher than all of the nearby states.
3. Average salary (adjusted): Connecticut's adjusted average salary was higher than that of four nearby states, comparable to that of one nearby state, and lower than that of two nearby states. However, Connecticut's adjusted salary was higher than the average of the seven nearby states, indicating to us that there was no need to modify the actual, 2003-04, salaries used to estimate the cost of adequacy.

School and District-Level Costs

School Level Costs

Tables IV-10A, 10B, 10C, and 10D show the school-level costs that result from applying the prices discussed above to the resources specified by the professional judgment panels for a K-8 district and three different size K-12 districts. Per student figures were calculated for regular students and for students with special needs by multiplying numbers of resources (such as personnel or technology equipment) by prices and dividing either by the number of students in each hypothetical school or by the number of students with a particular special need.

In looking at the tables, we have divided the information into two categories: (1) figures related to base, per-student spending; and (2) figures related to spending for students with special needs. Within the first category, we divided figures for regular programs (services available to all students, the costs of which include personnel, annually consumed supplies and materials, and ancillary school-based costs such as professional development), technology, and pre-school programs. For all figures we

show school-level costs and then combine costs across levels to calculate a district-wide figure based on an assumed distribution of students (46.1 percent in elementary schools, 23.1 percent in middle schools, and 30.8 percent in high schools).

Certain costs, such as preschool costs, can be misinterpreted because of the way they are expressed in the tables. Such costs are shown spread across *all* students, not just the students who participate in the preschool program. For example, the \$650 per-student cost for preschool shown in table IV-10B is the cost spread over all 2,065 students in the district – this produces \$1.3 million for preschool in a district of that size.

For example, looking at moderate size K-12 districts (Table IV-10C), we found that the basic school-level cost per student (all 4,970 students in the district) would include: (1) \$8,000 for basic instruction, support, and administration; (2) \$132 for technology; and (3) \$813 for pre-school. These elements produce a total of \$8,945 at the school level for every student (adding these elements together but not shown in the table). In addition, the added costs per student for students with particular special needs would be: (1) \$7,625 for students with mild special education needs; (2) \$13,371 for students with moderate special education needs; (3) \$40,824 for students with severe special education needs; (4) \$4,301 per at-risk student if the concentration of at-risk students were 10 percent of total enrollment; (5) \$3,551 per at-risk student if the concentration of at-risk students were 20 percent of total enrollment; (6) \$3,657 per at-risk student if the concentration of at-risk students were 40 percent programs; and (7) \$6,522 for ELL students.

One should be careful in drawing conclusions based on school level costs since such costs exclude district level costs and different panels included different costs at the school and district levels. It is really the combination of school and district costs that reflect the true, total cost of providing services and that permit the most appropriate comparison across school districts of different size.

District Level Costs

Complete cost figures for school districts of different size are shown in Table IV-11. District costs are for central services, some of which affect all students – such as administration and facilities maintenance and operation (M&O). Other costs affect only students with special needs. The figures in Table IV-11 indicate that district-level administration costs are between about \$299 and \$590 per student. Some of the administrative cost in the large K-12 district reflects personnel that may be required in urban districts. Other costs (\$1,065 to \$1,359 per student) include such items as insurance, legal expenditures, textbooks purchased centrally, facilities M&O, software licenses, and so on.

There are some district costs associated with students with special needs, that may reflect a specialized facility, such as an alternative school (which would be attributable to the costs for at-risk students), central services for special education

(including diagnostic services or services that are shared across schools), and the cost of language interpreters (attributable to the cost of ELL students). In the case of special education, it was impossible to distinguish which district-level costs were associated with mild, moderate, or severe levels of special education.

In the end, district-level costs attributable to all students are between 15-20 percent of school-level costs. Large districts have a higher cost, at least some of which is associated with higher facilities M&O expenditures caused by older buildings in urban districts.

Table IV-11 also shows total spending after combining school and district spending. For example, in moderate size K-12 districts, combined school-level and district-level base costs are \$10,388 per student. In addition, students with mild special education needs add \$10,248, students with moderate special education needs add \$15,994, and students with severe special education need add \$43,447. At-risk students have added costs that decline as the proportion of such students increases, from \$5,198 when the concentration of at-risk students is 20 percent of all students, to \$3,999 when the concentration of at-risk students is 40 percent of all students, to \$3,956 when the concentration of at-risk students is 60 percent of all students. ELL students cost an additional \$7,014 per student.

While this is the basic information produced by the professional judgment analysis, it is impossible to use this information in the form in which it has been presented to estimate the cost of an adequate education in districts that have different characteristics from the hypothetical districts shown in this chapter. The purpose of the next chapter is to explain how the information gained from both the professional judgment and successful school district approaches can be used to estimate costs in Connecticut school districts of any size and with any proportion of special education students, at-risk students, and ELL students.

TABLE IV-1A

NUMBER AND SIZE DISTRIBUTION OF ENTITIES THAT PROVIDE ELEMENTARY AND SECONDARY EDUCATION SERVICES IN CONNECTICUT

	Number of Districts	Distribution of Districts by Enrollment				Number of Students
		Less than 1,000	1,000 to 5,000	5,000 to 10,000	Greater than 10,000	
K-12 Districts Operated by Cities and Towns	106	3	67	29	7	502,295
K-6/8 Districts Operated by Towns	45	38	7	0	0	24,169
K-12 Regional Districts	7	0	7	0	0	13,020
7/9-12 Regional Districts	8	4	4	0	0	8,982
Regional Service Centers	6	4	2	0	0	5,871
Charter Schools	16	15	1	0	0	4,043
Privately Endowed Academies	2	0	2	0	0	3,313
State Vocational – Technical Schools	1	0	0	0	1	11,130
Totals	191	64	90	29	8	572,823

Source: National Center for Education Statistics, U.S. Department of Education (data from School Year 2002-03)

TABLE IV-1B

**CHARACTERISTICS OF STUDENTS IN
DISTRICTS OPERATED BY CITIES/TOWNS AND
IN REGIONAL DISTRICTS IN CONNECTICUT**

		Percentage of All Students		
	Number of Students	Special Education	At-Risk	English Language Learners
K-12 Districts				
Less than 10,000 Students	428,522	12.6%	14.5%	2.0%
Greater than 10,000 Students	119,944	14.8%	62.6%	11.0%
K-6/8 Districts	24,169	14.0%	7.3%	0.4%
K-12 Regional Districts	13,020	11.6%	4.1%	0.2%
7/9-12 Regional Districts	8,982	13.0%	3.3%	0.4%

TABLE IV-2

**CHARACTERISTICS OF HYPOTHETICAL DISTRICTS AND SCHOOLS
USED IN THE PROFESSIONAL JUDGEMENT ANALYSIS
IN CONNECTICUT**

	Hypothetical Districts			
	K-8 District	K-12 Districts		
		Small	Moderate	Large
Total Enrollment	360	2,065	4,970	14,160
Number of Schools				
Elementary	-	2	6	16
Middle	-	1	2	4
High	-	1	1	3
K-8	1	-	-	-
Size of School				
Elementary (K-5)	-	420	420	420
Middle (6-8)	-	525	525	810
High (9-12)	-	700	1,400	1,400
K-8 School	360	-	-	-
Proportion of Special Needs Students				
Special Education				
Mild	7.3%	7.3%	7.3%	7.3%
Moderate	3.6%	3.6%	3.6%	3.6%
Severe	1.2%	1.2%	1.2%	1.2%
At-Risk				
10%	X	X		
20%	X	X	X	X
30%		X		
40%			X	X
60%			X	X
80%				X
English Language Learners				
Elementary	6.2%	6.2%	6.2%	6.2%
Middle / High School	3.0%	3.0%	3.0%	3.0%

TABLE IV-3A
PERSONNEL NEEDED BY ELEMENTARY
SCHOOLS IN K-8 DISTRICTS TO MEET
ACCOUNTABILITY STANDARDS IN CONNECTICUT

K-8 District

<u>Specified Characteristics</u>	<u>Characteristics/Personnel</u> <u>Elementary</u>
Enrollment	360
Number of Students in Special Education	
- <i>Mild</i>	26
- <i>Moderate</i>	13
- <i>Severe</i>	4
Number of At-Risk Students	
- <i>at 10% concentration</i>	36
- <i>at 20% concentration</i>	72
Number of ELL Students	22
<u>Personnel</u>	
(1) <u>Teaching Staff</u>	
<i>Regular Students</i>	
Classroom Teacher	18.5
Other Teacher	5
Aide	5
<i>Special Education Students</i>	
- <i>Mild</i>	
Classroom Teacher	1.5
Other Teacher	-
Aide	1
- <i>Moderate</i>	
Classroom Teacher	1.5
Other Teacher	-
Aide	2

TABLE IV-3A (Continued)

	<u>Characteristics/Personnel</u> <u>Elementary</u>
<i>-Severe</i>	
Classroom Teacher	1
Other Teacher	-
Aide	3
<i>At-Risk Students</i>	
<i>- 10% concentration</i>	
Classroom Teacher	-
Other Teacher	0.5
Aide	-
<i>- 20% concentration</i>	
Classroom Teacher	-
Other Teacher	1
Aide	-
<i>ESL Students</i>	
Classroom Teacher	1
Other Teacher	-
Aide	1
(2) <u>Pupil Support Staff</u>	
<i>Regular Students</i>	
Counselor	0.6
Nurse	0.8
Psychologist	-
<i>Special Education Students</i>	
<i>- Mild</i>	
Counselor	0.1
Nurse	-
Psychologist	0.1
Speech	0.7
OT/PT	0.25
<i>- Moderate</i>	
Counselor	0.1
Nurse	0.1
Psychologist	0.1
OT/PT	0.25

TABLE IV-3A (Continued)

	<u>Characteristics/Personnel</u> <u>Elementary</u>
- <i>Severe</i>	
Counselor	0.2
Nurse	0.1
Psychologist	0.2
OT/PT	0.5
<i>At-Risk Students</i>	
- <i>10% concentration</i>	
Counselor	-
Nurse	-
Psychologist	-
Social Worker	0.25
- <i>20% concentration</i>	
Counselor	-
Nurse	-
Psychologist	-
Social Worker	0.4
<i>ESL Students</i>	
Developmental Counselor	-
Nurse	-
Psychologist	-
(3) <u>Other Staff</u>	
<i>All Students</i>	
Librarian/Media Specialist	1
Technology Specialist	0.5
Substitutes (\$75/day)	165 days
(4) <u>Administration</u>	
<i>All Students</i>	
Principal	1
Assistant Principal	0.5
Clerical/Data	1.5

TABLE IV-3B

**PERSONNEL NEEDED BY ELEMENTARY AND HIGH
SCHOOLS IN SMALL K-12 DISTRICTS TO MEET
ACCOUNTABILITY STANDARDS IN CONNECTICUT**

Small K-12 District

<u>Specified Characteristics</u>	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
Enrollment	420	525	700
Number of Students in Special Education			
- <i>Mild</i>	31	38	51
- <i>Moderate</i>	15	19	25
- <i>Severe</i>	26	6	8
Number of At-Risk Students			
- <i>10% concentration</i>	42	53	70
- <i>20% concentration</i>	84	105	140
- <i>30% concentration</i>	126	158	210
Number of ESL Students	26	16	21
<u>Personnel</u>			
(1) <u>Teaching Staff</u>			
<i>Regular Students</i>			
Classroom Teacher	21	25	48.6
Other Teacher	3.8	12	-
Aide	6	7	1
<i>Special Education Students</i>			
- <i>Mild</i>			
Classroom Teacher	1	3	2
Other Teacher	-	-	-
Aide	2	3	2
- <i>Moderate</i>			
Classroom Teacher	1	2	2
Other Teacher	-	-	-
Aide	2	2	2

TABLE IV-3B (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
- <i>Severe</i>			
Classroom Teacher	1	1	1
Other Teacher	-	-	-
Aide	3	3	4
<i>At-Risk Students</i>			
- <i>10% concentration</i>			
Instructional Facilitator	1	-	-
Aide	-	-	-
Tutor	-	-	2.4
- <i>20% concentration</i>			
Instructional Facilitator	2	-	-
Aide	-	-	-
Tutor	-	-	4.8
- <i>30% concentration</i>			
Instructional Facilitator	3	-	-
Aide	-	-	-
Tutor	-	-	7.2
<i>ESL Students</i>			
Classroom Teacher	1	1	0.5
Other Teacher	-	-	-
Aide	1	1	-
(2) <u>Pupil Support Staff</u>			
<i>Regular Students</i>			
Guidance Counselor	0.6	0.5	1.5
Nurse	0.7	1	1
Social Worker	-	-	0.5
Psychologist	-	-	-
<i>Special Education Students</i>			
- <i>Mild</i>			
Guidance Counselor	0.1	0.1	0.5
Social Worker	-	0.1	0.33
Nurse	0.1	-	-
Psychologist	0.1	0.1	0.67
Speech	1	0.5	0.67

TABLE IV-3B (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
<i>- Moderate</i>			
Guidance Counselor	0.1	0.1	0.5
Social Worker	-	0.2	0.33
Nurse	0.1	-	-
Psychologist	0.1	0.25	0.33
OT/PT	0.25	0.25	0.66
<i>-Severe</i>			
Guidance Counselor	0.2	0.1	-
Social Worker	-	0.2	0.33
Nurse	0.1	-	-
Psychologist	0.1	0.25	0.33
OT/PT	-	-	1
<i>At-Risk Students</i>			
<i>- 10% concentration</i>			
Guidance Counselor	-	0.2	0.8
Social Worker	-	0.5	0.4
Nurse	-	-	-
Psychologist	-	-	-
<i>- 20% concentration</i>			
Guidance Counselor	-	0.4	1.2
Social Worker	-	1	0.8
Nurse	-	-	-
Psychologist	-	-	-
<i>- 30% concentration</i>			
Guidance Counselor	-	0.6	1.6
Social Worker	-	1.5	1.2
Nurse	-	-	-
Psychologist	-	-	-
<i>ESL Students</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	-

TABLE IV-3B (Continued)

		<u>Characteristics/Personnel</u>		
		<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
(3)	<u>Other Staff</u>			
	<i>All Students</i>			
	Librarian/ Media Specialist	1	1	1
	Technology Specialist	0.5	1	1
	Substitutes (Intern or \$75/day)	200 days	1.6	415 days
(4)	<u>Administration</u>			
	<i>All Students</i>			
	Principal	1	1	1
	Assistant Principal	-	1	1
	Clerical/Data	1.5	3	3

TABLE IV-3C

PERSONNEL NEEDED BY ELEMENTARY, MIDDLE AND HIGH SCHOOLS IN MODERATE K-12 DISTRICTS TO MEET ACCOUNTABILITY STANDARDS IN CONNECTICUT

Moderate K-12 District

<u>Specified Characteristics</u>	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
Enrollment	420	525	1,400
Number of Students in Special Education			
- <i>Mild</i>	31	38	102
- <i>Moderate</i>	15	19	50
- <i>Severe</i>	5	6	17
Number of At-Risk Students			
- <i>20% concentration</i>	84	105	280
- <i>40% concentration</i>	168	210	560
- <i>60% concentration</i>	252	315	840
Number of ESL Students	26	16	42
<u>Personnel</u>			
(1) <u>Teaching Staff</u>			
<i>Regular Students</i>			
Classroom Teacher	24	25	90
Other Teacher	5	15	-
Aide	2	3	-
Tutor	-	3	4
<i>Special Education Students</i>			
- <i>Mild</i>			
Classroom Teacher	2	3	5
Other Teacher	-	-	-
Aide	2	3	2
- <i>Moderate</i>			
Classroom Teacher	1	2	4
Other Teacher	-	-	-
Aide	2	2	4

TABLE IV-3C (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
Other Teacher	-	-	-
Aide	2	3	9
<i>At-Risk Students</i>			
<i>- 20% concentration</i>			
Classroom Teacher	2	-	1
Other Teacher	-	-	-
Aide	1	-	-
Tutor	-	6	-
<i>- 40% concentration</i>			
Classroom Teacher	2	-	2
Other Teacher	-	-	-
Aide	2	-	-
Tutor	4	6	-
<i>- 60% concentration</i>			
Classroom Teacher	2	-	10
Other Teacher	-	-	-
Aide	3	-	-
Tutor	4	6	-
<i>ESL Students</i>			
Classroom Teacher	1	0.5	2
Other Teacher	-	-	-
Aide	-	0.5	2
Tutor	-	0.5	-
(2) <u>Pupil Support Staff</u>			
<i>Regular Students</i>			
Guidance Counselor	0.2	2	8
Nurse	1	1	2
Psychologist	0.3	0.5	1
Social Worker	-	-	1
<i>Special Education Students</i>			
<i>- Mild</i>			
Guidance Counselor	0.1	-	-
Nurse	-	-	-
Psychologist	0.2	0.25	0.5
Social Worker	0.1	-	-

TABLE IV-3C (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
<i>- Mild (Cont'd)</i>			
Speech Therapist	0.2	0.2	0.3
OT/PT	-	-	-
<i>- Moderate</i>			
Guidance Counselor	0.1	-	-
Nurse	-	-	-
Psychologist	0.4	0.5	0.25
Social Worker	-	-	-
Speech Therapist	0.2	0.2	0.4
OT/PT	0.1	0.25	0.1
<i>- Severe</i>			
Guidance Counselor	0.1	-	-
Nurse	-	-	1
Psychologist	0.1	0.25	0.25
Social Worker	-	-	-
Speech Therapist	0.1	0.1	0.3
OT/PT	0.1	0.25	0.2
<i>At-Risk Students</i>			
<i>- 20% concentration</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	-
Social Worker	-	0.5	-
<i>- 40% concentration</i>			
Guidance Counselor	-	0.5	1
Nurse	-	-	-
Psychologist	-	-	0.5
Social Worker	-	0.5	0.5
<i>- 60% concentration</i>			
Guidance Counselor	-	1	2
Nurse	-	-	-
Psychologist	-	-	1
Social Worker	1	1	0.5
<i>ESL Students</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	-

TABLE IV-3C (Continued)

		<u>Characteristics/Personnel</u>		
		<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
(3)	<u>Other Staff</u>			
	<i>All Students</i>			
	Librarian/Media Specialist	1	1	2
	Technology Specialist	-	1	1
	Substitutes (\$55/day)	7 days per teacher	7 days per teacher	10 days per teacher
(4)	<u>Administration</u>			
	<i>All Students</i>			
	Principal	1	1	1
	Assistant Principal	-	1	3
	Clerical/Data	2	4	9

TABLE IV-3D

**PERSONNEL NEEDED BY ELEMENTARY, MIDDLE AND HIGH
SCHOOLS IN LARGE K-12 DISTRICTS TO MEET
ACCOUNTABILITY STANDARDS IN CONNECTICUT**

Large K-12 District

<u>Specified Characteristics</u>	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
Enrollment	420	810	1,400
Number of Students in Special Education			
- <i>Mild</i>	31	59	102
- <i>Moderate</i>	15	29	50
- <i>Severe</i>	5	10	17
Number of At-Risk Students			
- <i>20% concentration</i>	84	162	280
- <i>40% concentration</i>	168	324	560
- <i>60% concentration</i>	252	486	840
- <i>80% concentration</i>	336	648	1,120
Number of ESL Students	26	24	42
<u>Personnel</u>			
(1) <u>Teaching Staff</u>			
<i>Regular Students</i>			
Classroom Teacher	25.5	52	100
Other Teacher	5	3.5	5
Aide	2	5.5	7
Tutor	-	-	-
<i>Special Education Students</i>			
- <i>Mild</i>			
Classroom Teacher	2	3	3
Other Teacher	-	-	0.33
Aide	1	2	1
- <i>Moderate</i>			
Classroom Teacher	1	3	4
Other Teacher	-	-	0.33
Aide	1	1	3

TABLE IV-3D (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
- <i>Severe</i>			
Classroom Teacher	1	2	2
Other Teacher	-	-	0.33
Aide	3	6	9
<i>At-Risk Students</i>			
- <i>20% concentration</i>			
Classroom Teacher	-	3	2
Other Teacher	1	-	-
Aide	-	-	-
Tutor	4	-	-
- <i>40% concentration</i>			
Classroom Teacher	3.5	6	4
Other Teacher	1	-	-
Aide	-	-	-
Tutor	4	-	-
- <i>60% concentration</i>			
Classroom Teacher	3.5	8	6
Other Teacher	1	-	-
Aide	-	-	-
Tutor	4	-	-
- <i>80% concentration</i>			
Classroom Teacher	3.5	10	8
Other Teacher	1	-	-
Aide	-	-	-
Tutor	4	-	-
<i>ESL Students</i>			
Classroom Teacher	3	3	2.5
Other Teacher	-	-	-
Aide	-	-	2
Tutor	-	-	-
(2) <u>Pupil Support Staff</u>			
<i>Regular Students</i>			
Guidance Counselor	1	3	6
Nurse	1	1.5	1.5
Psychologist	0.2	1	1
Social Worker	1	2	4

TABLE IV-3D (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
<i>Special Education Students</i>			
<i>- Mild</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	0.5
Social Worker	-	-	-
Speech Therapist	1	1	1
OT/PT	-	-	-
<i>- Moderate</i>			
Guidance Counselor	0.5	-	-
Nurse	-	-	-
Psychologist	0.3	-	0.25
Social Worker	-	-	-
Speech Therapist	-	-	-
OT/PT	-	-	-
<i>- Severe</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	0.25
Social Worker	-	-	-
Speech Therapist	-	-	-
OT/PT	-	-	-
<i>At-Risk Students</i>			
<i>- 20% concentration</i>			
Guidance Counselor	-	-	-
Nurse	-	-	-
Psychologist	-	-	-
Social Worker	-	0.33	2
<i>- 40% concentration</i>			
Guidance Counselor	1	-	-
Nurse	-	-	-
Psychologist	-	-	-
Social Worker	1	0.66	2.5
<i>- 60% concentration</i>			
Guidance Counselor	2	-	-
Nurse	-	-	-
Psychologist	-	-	-
Social Worker	1.5	1	4

TABLE IV-3D (Continued)

	<u>Characteristics/Personnel</u>		
	<u>Elementary</u>	<u>Middle</u>	<u>High School</u>
<i>- 80% concentration</i>			
Guidance Counselor	3	-	-
Nurse	-	-	-
Psychologist	-	-	-
Social Worker	2	1.33	4
<i>ESL Students</i>			
Guidance Counselor	0.5	0.5	-
Nurse	-	-	-
Psychologist	-	-	-
(3) <u>Other Staff</u>			
<i>All Students</i>			
Librarian/Media Specialist	1	2	2
Technology Specialist	1	1	1
Substitutes (\$55/day)	7 days per teacher	7 days per teacher	7 days per teacher
(4) <u>Administration</u>			
<i>All Students</i>			
Principal	1	1	1
Assistant Principal	1	2	3
Clerical/Data	2	5	7

TABLE IV-4A

**PERSONNEL PER 1,000 REGULAR PROGRAM STUDENTS
IN HYPOTHETICAL ELEMENTARY SCHOOLS
BASED ON THE WORK OF THE CONNECTICUT
PROFESSIONAL JUDGMENT PANELS**

Elementary School

Size of School District
K-12

		<u>K-8</u>	<u>Small</u>	<u>Mod.</u>	<u>Large</u>
(1)	<u>Teaching Staff</u>				
	Classroom Teacher	51.4	50.0	57.1	60.7
	Other Teacher	13.9	10.6	11.9	11.9
	Aide	13.9	14.3	4.8	4.8
(2)	<u>Pupil Support Staff</u>				
	Guidance Counselor	1.7	1.4	0.5	2.4
	Nurse	2.2	1.7	2.4	2.4
(3)	<u>Other Staff</u>				
	Librarian/Media Spec.	2.8	2.4	2.4	2.4
	Technology Spec.	1.4	1.2	-	2.4
(4)	<u>Administration</u>				
	Principal	2.8	2.4	2.4	2.4
	Asst. Principal	1.4	-	-	2.4
	Clerical	4.2	3.6	4.8	4.8

TABLE IV-4B

**PERSONNEL PER 1,000 REGULAR PROGRAM STUDENTS
IN HYPOTHETICAL MIDDLE SCHOOLS
BASED ON THE WORK OF THE CONNECTICUT
PROFESSIONAL JUDGMENT PANELS**

	Size of School District		
	<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1) <u>Teaching Staff</u>			
Classroom Teacher	47.6	47.6	64.2
Other Teacher	22.9	28.6	4.3
Aide	13.3	5.7	6.8
(2) <u>Pupil Support Staff</u>			
Guidance Counselor	1	3.8	3.7
Nurse	1.9	1.9	1.9
(3) <u>Other Staff</u>			
Librarian/Media Spec.	1.9	1.9	2.5
Technology Spec.	1.9	1.9	1.2
(4) <u>Administration</u>			
Principal	1.9	1.9	1.2
Asst. Principal	1.9	1.9	2.5
Clerical	5.7	7.6	6.2

TABLE IV-4C

**PERSONNEL PER 1,000 REGULAR PROGRAM STUDENTS
IN HYPOTHETICAL HIGH SCHOOLS
BASED ON THE WORK OF THE CONNECTICUT
PROFESSIONAL JUDGMENT PANELS**

High School

		Size of School District K-12		
		<u>Small</u>	<u>Mod.</u>	<u>Large</u>
(1)	<u>Teaching Staff</u>			
	Classroom Teacher	69.4	64.3	71.4
	Other Teacher	-	-	3.6
	Aide	1.4	-	5.0
(2)	<u>Pupil Support Staff</u>			
	Guidance Counselor	2.1	5.7	4.3
	Nurse	1.4	1.4	1.1
(3)	<u>Other Staff</u>			
	Librarian/Media Spec.	1.4	1.4	1.4
	Technology Spec.	1.4	0.7	0.7
(4)	<u>Administration</u>			
	Principal	1.4	0.7	0.7
	Asst. Principal	1.4	2.1	2.1
	Clerical	4.3	6.4	5.0

TABLE IV-5A

**NON-PERSONNEL COSTS NEEDED FOR HYPOTHETICAL
ELEMENTARY SCHOOLS IN K-8 AND K-12 DISTRICTS OF
DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

Elementary School

	<u>Size of School District</u>			
	<u>K-8</u>	<u>Small</u>	<u>K-12</u> <u>Mod.</u>	<u>Large</u>
(1) Instructional Supplies/Materials*	\$108	\$100	\$100	\$100
(2) Equipment	\$83	\$75	\$75	\$75
(3) Assessment	\$50	\$50	\$12	\$12
(4) Student Activities	\$28	\$14	\$40	\$40
(5) Professional Development	\$121	\$120	\$233	\$245

*all figures per pupil

TABLE IV-5B

**NON-PERSONNEL COSTS NEEDED FOR HYPOTHETICAL
MIDDLE SCHOOLS IN K-12 DISTRICTS OF
DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

Middle School

	<u>Size of School District</u>		
	<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1) Instructional Supplies/Materials*	\$125	\$125	\$125
(2) Equipment	\$100	\$100	\$100
(3) Assessment	\$50	\$10	\$12
(4) Student Activities	\$45	\$100	\$125
(5) Professional Development	\$120	\$258	\$217

*all figures per pupil

TABLE IV-5C

**NON-PERSONNEL COSTS NEEDED FOR HYPOTHETICAL HIGH
SCHOOLS IN K-12 DISTRICTS OF
DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

High School

	<u>Size of School District</u>		
	<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1) Instructional Supplies/Materials*	\$150	\$150	\$150
(2) Equipment	\$125	\$125	\$125
(3) Assessment	\$50	\$11	\$18
(4) Student Activities	\$500	\$450	\$300
(5) Professional Development	\$120	\$217	\$241

*all figures per pupil

TABLE IV-6A

**OTHER PROGRAMS NEEDED IN HYPOTHETICAL
ELEMENTARY SCHOOLS IN K-8 AND K-12 DISTRICTS
OF DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

Elementary School

		Size of School District			
		<u>K-8</u>	<u>Small</u>	<u>K-12</u> <u>Mod.</u>	<u>Large</u>
(1)	<i>Pre-School</i>				
	All Students	X	X	X	X
	At-Risk Students				
	Special Education				
	ESL				
(2)	<i>Before/After School</i>				
	All Students				
	At-Risk Students	X	X	X	X
	Special Education		X		
	ESL		X	X	X
(3)	<i>Summer School</i>				
	All Students				
	At-Risk Students	X	X	X	X
	Special Education	X			
	ESL		X	X	X
(4)	<i>Extended School Year</i>				
	All Students				
	At-Risk Students				
	Special Education	X	X	X	X
	ESL				
(5)	<i>Additional Technology in Classroom</i>				
	All Students				
	At-Risk Students				X
	Special Education				
	ESL				

TABLE IV-6B

**OTHER PROGRAMS NEEDED IN HYPOTHETICAL
MIDDLE SCHOOLS IN K-12 DISTRICTS OF
DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

Middle School

		<u>Size of School District</u>		
		<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1)	<i>Before/After School</i>			
	All Students			
	At-Risk Students	X	X	X
	Special Education	X		
	ESL	X	X	X
(2)	<i>Summer School</i>			
	All Students			
	At-Risk Students	X	X	X
	Special Education	X		
	ESL		X	X
(3)	<i>Additional Technology in Classroom</i>			
	All Students			
	At-Risk Students			X
	Special Education			
	ESL			
(4)	<i>Detention</i>			
	All Students			X
	At-Risk Students			
	Special Education			
	ESL			

TABLE IV-6C

**OTHER PROGRAMS NEEDED IN HYPOTHETICAL
HIGH SCHOOLS IN K-12 DISTRICTS OF
DIFFERENT SIZE BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

High School

		<u>Size of School District</u>		
		<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1)	<i>Before/After School</i>			
	All Students			
	At-Risk Students	X	X	X
	Special Education			
	ESL		X	X
(2)	<i>Summer School</i>			
	All Students			
	At-Risk Students	X	X	X
	Special Education			
	ESL		X	X
(3)	<i>Extended School Year</i>			
	All Students			
	At-Risk Students			
	Special Education	X	X	X
	ESL			
(4)	<i>Alternative School</i>			
	All Students			X
	At-Risk Students			
	Special Education			
	ESL			
(5)	<i>Technology</i>			
	All Students			
	At-Risk Students			X
	Special Education			
	ESL			

TABLE IV-7A

TECHNOLOGY NEEDS OF HYPOTHETICAL ELEMENTARY SCHOOLS IN K-8 AND K-12 DISTRICTS OF DIFFERENT SIZE BASED ON THE WORK OF THE CONNECTICUT PROFESSIONAL JUDGMENT PANELS

Elementary School

		Size of School District			
		<u>K-8</u>	<u>Small</u>	<u>K-12</u>	<u>Large</u>
(1)	<u>Classroom</u>				
	Computer	74	63	72	77
	Printer (Inkjet)	18.5	21	24	26
	TV/VCR	-	-	-	-
	LCD Projector	18.5	21	24	26
	Smartboard	18.5	-	24	26
(2)	<u>Computer Lab</u>				
	Computer	60	50	50	50
	Scanner	0	-	2	2
	Printer (Laser)	3	2	2	2
	Mobile Computer Labs	-	-	-	-
	LCD Projector	-	-	-	-
(3)	<u>Media Center</u>				
	Computer	20	25	10	5
	Dig. Video Cam.	2	3	2	2
	Digital Camera	4	4	2	2
	Vid. Edit Comp.	1	-	-	1
	LCD Projector	-	-	1	-
	Printer	-	-	2	-
(4)	<u>Admin./Support/Other Staff</u>				
	Computer	4	4	7	10
	Printer (Laser)	2	2	5	2
(5)	<u>Other</u>				
	Faculty Laptop	22.5	25	40	40
	Server	1	1	1	1

TABLE IV-7B

**TECHNOLOGY NEEDS OF HYPOTHETICAL MIDDLE
SCHOOLS IN K-12 DISTRICTS OF DIFFERENT SIZE
BASED ON THE WORK OF THE CONNECTICUT
PROFESSIONAL JUDGMENT PANELS**

Middle School

		<u>Size of School District</u>		
			<u>K-12</u>	
		<u>Small</u>	<u>Mod.</u>	<u>Large</u>
(1)	<u>Classroom</u>			
	Computer	100	100	156
	Printer (Inkjet)	25	25	52
	TV/VCR	-	-	-
	Smart Boards	25	25	52
	LCD Projector	25	25	52
(2)	<u>Computer Lab</u>			
	Computer	75	75	50
	Scanner	-	-	3
	Printer (Laser)	3	3	3
	Mobile Computer Labs	-	-	50
	Smart Boards	-	-	-
	Stu. Response Ind.	-	-	-
	LCD Projector	-	-	-
(3)	<u>Media Center</u>			
	Computer	25	25	10
	Dig. Video Cam.	3	2	2
	Digital Camera	4	2	2
	Vid. Edit Comp.	1	1	1
	LCD Projector	-	1	-
	Printer	-	2	-
(4)	<u>Admin./Support/Other Staff</u>			
	Computer	5	7	10
	Printer (Laser)	2	5	2
(5)	<u>Other</u>			
	Faculty Laptop	35	47	87
	Server	2	2	1

TABLE IV-7C

**TECHNOLOGY NEEDS OF HYPOTHETICAL HIGH
SCHOOLS IN K-12 DISTRICTS OF DIFFERENT SIZE
BASED ON THE WORK OF THE CONNECTICUT
PROFESSIONAL JUDGMENT PANELS**

High School

		<u>Size of School District</u>		
			<u>K-12</u>	
		<u>Small</u>	<u>Mod.</u>	<u>Large</u>
(1)	<u>Classroom</u>			
	Computer	146	270	300
	Printer (Inkjet)	49	90	100
	TV/VCR	-	-	-
	LCD	49	90	100
	Smartboard	49	90	100
(2)	<u>Computer Lab</u>			
	Computer	325	200	100
	Scanner	0	-	8
	Printer (Laser)	8	8	8
	Mobile Computer Labs	-	-	100
	Smart Boards	-	-	-
	Stu. Response Ind.	-	-	-
	LCD Projector	-	-	-
(3)	<u>Media Center</u>			
	Computer	25	40	40
	Dig. Video Cam.	2	4	4
	Digital Camera	4	4	4
	Vid. Edit Comp.	1	1	1
	LCD Projector	-	-	-
	Printer	-	2	-
(4)	<u>Admin./Support/Other Staff</u>			
	Computer	6	40	20
	Printer (Laser)	4	20	5
(5)	<u>Other</u>			
	Faculty Laptop	51	127	132
	Server	3	2	2

TABLE IV-8

PRICES FOR CONNECTICUT HYPOTHETICAL SCHOOL AND SCHOOL DISTRICT RESOURCE ELEMENTS AND COMPONENTS

Resource Element

(1) Salary Levels (2002-2003)	
Classroom Teacher	\$57,365
Other Teacher	\$57,365
Librarian/Media Specialist	\$62,631
Technology Specialist	\$65,970
Guidance Counselor	\$60,233
Nurse	\$40,156
Psychologist	\$57,365
Instructional Aide	\$18,357
Clerical/Data	\$32,124
Principal	\$104,108
Assistant Principal	\$95,290
Superintendent	\$130,011
Assistant Superintendent	\$118,141
Supervisor	\$97,687
Speech Pathologist	\$61,954
Social Worker	\$59,660
Therapist	\$63,102
(2) Technology	
Computer	\$750
Printer (Inkjet)	\$350
Printer (Laser)	\$1,000
TV/VCR/DVD	\$417
Scanner	\$300
Digital Video Camera	\$2,000
Digital Camera (Middle, Elementary)	\$350
Digital Camera (High School)	\$750
Video Editing Complex	\$4,000
Projector	\$1,500
DVD-ROM Tower	\$2,355
Laptop	\$1,500
Server	\$2,500
Smart Board	\$1,400

TABLE IV-9

COMPARISON OF 2001-02 STATEWIDE AVERAGE TEACHER SALARY IN CONNECTICUT TO THAT OF SEVEN NEARBY STATES ADJUSTING FOR TEACHER CHARACTERISTICS AND INTER-STATE COST-OF-LIVING DIFFERENCES

	<u>Numb. of Teachers</u> <u>2001-02</u>	<u>Starting Salary</u> <u>2001-02</u>	<u>Average Salary</u> <u>2001-02</u>	<u>Years of Exper.</u> <u>2001-02</u>	<u>Percent with More than a B.A.</u> <u>1999-00</u>	<u>Cost of Living</u> <u>2000</u>	<u>Adjusted Salary</u> <u>2001-02</u>
Connecticut <i>(Cost Factors)*</i>	41,263	\$34,551	\$52,376	16.2 <i>(\$499)</i>	83.3% <i>(\$100)</i>	1.087	\$48,200
<u>Comparison States</u>							
Maine <i>Rel. to CT + (Cost Factors)</i>	17,040	\$24,054 .696	\$37,300 .712	16.9 <i>(\$565)</i>	33.7% <i>(\$113)</i>	.992	\$42,814 .888
Massachusetts <i>Rel. to CT + (Cost Factors)</i>	69,000	\$32,746 .948	\$48,732 .930	17.2 <i>(\$474)</i>	61.4% <i>(\$95)</i>	1.144	\$44,217 .917
New Hampshire <i>Rel. to CT + (Cost Factors)</i>	13,990	\$25,611 .741	\$39,915 .762	15.8 <i>(\$530)</i>	48.1% <i>(\$106)</i>	1.062	\$41,532 .862
New Jersey <i>Rel. to CT + (Cost Factors)</i>	105,750	\$35,311 1.022	\$50,115 .957	16.2 <i>(\$571)</i>	41.6% <i>(\$114)</i>	1.057	\$52,153 1.082
New York <i>Rel. to CT + (Cost Factors)</i>	215,500	\$34,577 1.001	\$51,020 .974	15.6 <i>(\$492)</i>	78.2% <i>(\$98)</i>	1.070	\$48,448 1.005
Rhode Island <i>Rel. to CT + (Cost Factors)</i>	10,455	\$30,272 .876	\$51,619 .986	15.4 <i>(\$811)</i>	56.3% <i>(\$162)</i>	.987	\$57,304 1.189
Vermont <i>Rel. to CT + (Cost Factors)</i>	8,250	\$25,229 .730	\$39,771 .759	15.3 <i>(\$572)</i>	50.7% <i>(\$114)</i>	.999	\$44,016 .913
<u>Average Salary of Nearby States</u>							
Unweighted <i>Relative to Connecticut</i>		\$29,686 .859	\$45,496 .869	16.1 <i>(\$574)</i>	52.9% <i>(\$115)</i>		\$47,212 .980
Weighted by Number of Teachers <i>Relative to Connecticut</i>		\$33,496 .969	\$46,270 .883	16.0 <i>(\$572)</i>	52.4% <i>(\$118)</i>		\$47,739 .990

* Cost factors for all states are shown adjusted for a national cost-of-living average of 1.000.

TABLE IV-9 (Continued)

Note: To calculate each state's cost factors for experience and education: (1) multiply years of experience by five and add the product to the percent of teachers with more than a B.A. (if experience is 14.3 years and percent with more than a B.A. is 38.9, total is 110.4); (2) divide the difference between average salary and starting salary by this total; (3) divide the result by the relative cost-of-living factor to get the factor for the percentage of teachers with more than a B.A.; and (4) multiply this by five to get the factor for average years of experience. For example, if a state's average salary was \$38,600, its starting salary was \$28,000, the average years of teacher experience was 14.3, the proportion of teachers with more than a B.A. was 38.9 percent, and its relative cost of living was .912, the cost factor for percent of teachers with more than a B.A. would be \$105 and the cost factor for years of experience would be \$526.

To calculate the adjusted salary for each state: (1) divide the starting salary by the cost-of-living factor; (2) multiply the experience cost factor and the education cost factor for the comparison state by the levels of experience and education of the target state; and (3) add the results of steps (1) and (2). For example, if the comparison state had a starting salary of \$29,000, an average salary of \$37,500, a cost-of-living factor of .95, an experience cost factor of \$400 and an education cost factor of \$80 and the target state had 15 years of experience and 50 percent of its teachers had more than a bachelors degree, then the comparison state's adjusted salary would be \$40,526.

Sources: Digest of Education Statistics, 2002, Thomas D. Snyder and Charlene M. Hoffman (National Center for Education Statistics, U.S. Department of Education: Washington, DC, June 2003), Table 69.

Survey and Analysis of Teacher Salary Trends, 2002, F. Howard Nelson and Rachel Drown (American Federation of Teachers: Washington, DC, 2003), Tables I-1, I-9, and III-1.

TABLE IV-10A

**SCHOOL-LEVEL COSTS FOR K-6/8 SCHOOL
DISTRICTS BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

	<u>Elem. School</u>	<u>Total</u>
(1) <u>Base Spending*</u>		
Regular**	\$7,005	\$7,005
Technology	\$160	\$160
Other Programs for Students with <u>No Special Needs:</u>		
Pre-School	\$746	\$746
(2) <u>Added Spending for Special Student Populations***</u>		
<u>Special Education:</u>		
- <i>Mild</i>	\$9,971	\$9,971
- <i>Moderate</i>	\$17,419	\$17,419
- <i>Severe</i>	\$59,278	\$59,278
<u>At-Risk Students:</u>		
- <i>10% concentration</i>	\$3,199	\$3,199
- <i>20% concentration</i>	\$2,588	\$2,588
<u>ESL Students:</u>		
In-School	\$4,524	\$4,524

* Costs are shown per student in school.

** Basic base spending includes school level personnel salaries and benefits, supplies and materials, assessment, and other expenditures.

*** Costs are shown per student in the program.

Note: Combined figures are based on the following proportions of students: elementary schools, 46.1%, middle schools, 23.1%, and high schools, 30.8%.

TABLE IV-10B

**SCHOOL-LEVEL COSTS FOR SMALL K-12
SCHOOL DISTRICTS BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

	<u>Elem. School</u>	<u>Middle School</u>	<u>High School</u>	<u>Total</u>
(1) <u>Base Spending*</u>				
Regular**	\$6,307	\$7,258	\$7,649	\$6,946
Technology	\$121	\$148	\$206	\$153
Other Programs for Students with <u>No Special Needs:</u>				
Pre-School	\$1,406	-	-	\$650
(2) <u>Added Spending for Special Student Populations***</u>				
<u>Special Education:</u>				
- <i>Mild</i>	\$8,947	\$11,454	\$9,753	\$9,784
- <i>Moderate</i>	\$19,319	\$14,882	\$14,733	\$16,901
- <i>Severe</i>	\$47,612	\$36,608	\$39,025	\$42,473
<u>At-Risk Students:</u>				
- <i>10% concentration</i>	\$3,178	\$4,220	\$2,573	\$3,236
- <i>20% concentration</i>	\$2,878	\$3,430	\$2,128	\$2,620
- <i>30% concentration</i>	\$2,778	\$3,034	\$2,277	\$2,685
<u>ELL Students:</u>				
In-School	\$10,891	\$6,352	\$2,001	\$7,115

** Basic base spending includes school level personnel salaries and benefits, supplies and materials, assessment, and other expenditures.

*** Costs are shown per student in the program.

Note: Combined figures are based on the following proportions of students: elementary schools, 46.1%, middle schools, 23.1%, and high schools, 30.8%.

TABLE IV-10C

**SCHOOL-LEVEL COSTS FOR MODERATE K-12
SCHOOL DISTRICTS BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

	<u>Elem. School</u>	<u>Middle School</u>	<u>High School</u>	<u>Total</u>
(1) <u>Base Spending*</u>				
Regular**	\$7,169	\$10,129	\$7,624	\$8,000
Technology	\$119	\$156	\$134	\$132
Other Programs for Students with <u>No Special Needs:</u>				
Pre-School	\$1,760	-	-	\$813
(2) <u>Added Spending for Special Student Populations***</u>				
<u>Special Education:</u>				
- <i>Mild</i>	\$7,863	\$10,629	\$4,990	\$7,625
- <i>Moderate</i>	\$12,952	\$17,116	\$11,148	\$13,371
- <i>Severe</i>	\$37,712	\$49,991	\$38,484	\$40,824
<u>At-Risk Students:</u>				
- <i>20% concentration</i>	\$4,995	\$6,875	\$1,315	\$4,301
- <i>40% concentration</i>	\$4,611	\$4,440	\$1,282	\$3,551
- <i>60% concentration</i>	\$4,227	\$4,817	\$1,919	\$3,657
<u>ELL Students:</u>				
All Programs	\$7,715	\$5,342	\$5,596	\$6,522

** Basic base spending includes school level personnel salaries and benefits, supplies and materials, assessment, and other expenditures.

*** Costs are shown per student in the program.

Note: Combined figures are based on the following proportions of students: elementary schools, 46.1%, middle schools, 23.1%, and high schools, 30.8%.

TABLE IV-10D

**SCHOOL-LEVEL COSTS FOR LARGE K-12
SCHOOL DISTRICTS BASED ON THE WORK OF THE
CONNECTICUT PROFESSIONAL JUDGMENT PANELS**

	<u>Elem. School</u>	<u>Middle School</u>	<u>High School</u>	<u>Total</u>
(1) <u>Base Spending*</u>				
Regular**	\$8,776	\$7,671	\$8,316	\$8,388
Technology	\$105	\$132	\$153	\$126
Other Programs for Students with <u>No Special Needs:</u>				
Pre-School	\$2,477	-	-	\$1,144
(2) <u>Added Spending for Special Student Populations***</u>				
<u>Special Education:</u>				
- Mild	\$8,463	\$6,195	\$4,126	\$6,612
- Moderate	\$11,131	\$9,125	\$9,059	\$10,041
- Severe	\$31,035	\$30,785	\$25,969	\$29,448
<u>At-Risk Students:</u>				
- 20% concentration	\$4,676	\$1,950	\$1,593	\$3,101
- 40% concentration	\$4,709	\$1,876	\$1,317	\$3,014
- 60% concentration	\$3,545	\$1,959	\$1,461	\$2,540
- 80% concentration	\$3,411	\$1,817	\$1,299	\$2,395
<u>ELL Students:</u>				
In-School	\$6,644	\$10,596	\$6,273	\$7,450

* Costs are shown per student in school.

** Basic base spending includes school level personnel salaries and benefits, supplies and materials, assessment, and other expenditures.

*** Costs are shown per student in the program.

Note: Combined figures are based on the following proportions of students: elementary schools, 46.1%, middle schools, 23.1%, and high schools, 30.8%.

TABLE IV-11

DISTRICT-LEVEL BASE COSTS AND ADDED COSTS FOR STUDENTS
WITH SPECIAL NEEDS SIZE K-8
AND K-12 SCHOOL DISTRICTS BASED ON THE WORK OF
THE CONNECTICUT PROFESSIONAL JUDGMENT PANELS

	Size of School Districts			
	<u>K-6/8</u>	<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
(1) <u>District Level Spending</u>				
<u>Basic</u>				
Administration	\$304	\$299	\$377	\$590
Other*	\$1,200	\$1,175	\$1,065	\$1,359
<u>Special Needs</u>				
<i>Special Education</i>	\$3,023	\$2,562	\$2,623	\$5,061
<i>At-Risk Students</i>				
10% conc.	\$0	\$2,467	-	-
20% conc.	\$0	\$1,237	\$897	\$1,615
30% conc.	-	\$824	-	-
40% conc.	-	-	\$448	\$807
60% conc.	-	-	\$299	\$538
80% conc.	-	-	-	\$404
<i>ESL Students</i>	\$0	\$0	\$689	\$668
(2) <u>Total Spending</u>				
<u>Base Spending</u>				
School Level	\$7,910	\$7,749	\$8,945	\$9,689
District Level	\$1,504	\$1,474	\$1,442	\$1,949
Total Base Cost	\$9,414	\$9,223	\$10,388	\$11,639
Added Cost of <u>Spec. Need Student</u>				
<i>Special Education</i>				
Mild	\$12,994	\$12,346	\$10,248	\$11,673
Moderate	\$20,441	\$19,463	\$15,994	\$15,102
Severe	\$62,300	\$45,035	\$43,447	\$34,509
<i>At-Risk Students</i>				
10% conc.	\$3,199	\$5,703	-	-
20% conc.	\$2,587	\$4,014	\$5,198	\$4,716
30% conc.	-	\$3,509	-	-
40% conc.	-	-	\$3,999	\$3,822
60% conc.	-	-	\$3,956	\$3,078
80% conc.	-	-	-	\$2,799
ELL Students	\$1,503	\$7,115	\$7,014	\$7,907

* Includes facility operation and maintenance, legal, insurance, central office technology, and other items placed at the district level (textbooks and tuition, in some cases).

V. USING THE RESULTS OF THE SUCCESSFUL SCHOOL DISTRICT AND PROFESSIONAL JUDGMENT APPROACHES TO ESTIMATE THE COST OF ADEQUACY

This chapter discusses three topics:

- (1) How APA used the successful school district and professional judgment analyses to **estimate the cost of adequacy** for school districts with various demographic characteristics;
- (2) The results of **applying the adequacy cost estimate** to the characteristics of Connecticut school districts; and
- (3) The **implications of the adequacy study** for Connecticut's school finance system.

Estimating the Cost of Adequacy

The successful school district and professional judgment approaches produce data and information specific to the defined hypothetical districts or to successful school districts with specific characteristics (enrollment level and proportions of students with special needs). That information, however, needs to be translated so it can be applied to districts with any set of demographic characteristics and several specific questions need to be addressed:

- (1) What do the differences in the base cost figures produced by the successful school district (SSD) and professional judgement (PJ) approaches mean?
- (2) Does the base cost differ by the type of school district (K-12, K-6/8, and 7/9-12) and/or by the size of the district?
- (3) How can the costs of serving students with special needs be used to create student weights?
- (4) Should costs be adjusted to reflect geographic cost differences?

Once we respond to these questions, it becomes possible to estimate costs for each of the 166 "regular" school districts in Connecticut (106 K-12 districts serving cities and towns, 45 K-6/8 districts serving towns, seven regional K-12 districts that serve several towns, and eight regional 7/9-12 districts that receive students from sending K-6/8 districts). Formulas APA used to calculate base cost levels and weights for students with special needs are found in Appendix D.

The Different Base Cost Levels Produced by the SSD and PJ Approaches

The two approaches we used to study the cost of adequacy produced different base cost results, which can be summarized as follows:

Base Cost for Connecticut School Districts				
	<u>K-6/8</u>	<u>Small</u>	<u>K-12 Mod.</u>	<u>Large</u>
<u>Successful School District Approach</u>				
Base Cost (district size)	\$8,635 (1,658)		\$7,716 (4,256)	
<u>Professional Judgment Approach</u>				
Base Cost (district size)	\$9,414 (360)	\$9,223 (2,065)	\$10,388 (4,970)	\$11,639 (14,160)

As shown, the base cost figures for the K-6/8 districts are not very different – that is, because performance is already high in those districts, they will not need to spend much more in order to raise the future performance of their students. But the base cost figures for moderate size K-12 districts differ significantly, which suggests that the future costs of meeting higher performance expectations are much greater than past costs. This may be true in K-12 districts due to the presence of high schools and the more difficult task K-12 districts face in raising performance of students who enter early grades, keeping up performance as students move through the system, and dealing with new students who arrive in middle school or high school.

In some sense, then, costs based on the SSD base represent a *starting point*. Costs based on the PJ base represent the goal of adequacy for all children in Connecticut – a *target* that might take a few years to reach but that would ensure that districts have the resources needed to meet higher performance expectations by 2013. Below, we will show both the starting point and the adequacy target based on using the SSD and PJ base cost figures.

The Relationship Between Base Cost and District Configuration and Size

Although we obtained base cost figures from both the successful school district (SSD) and professional judgment (PJ) approaches, only the PJ produced base cost figures for K-12 districts of *varying size*. The figures shown in Table IV-11 indicate that the base cost for K-12 districts may vary based on school district size and that the base cost for K-6/8 districts may be different from that of K-12 districts. APA believes, however, that the difference in the base cost levels of moderate size and large K-12 districts reflects something other than size. In Chapter IV we identified several instances where differences in resources between large and moderate size K-12 districts appeared to reflect the “urban quality” of large districts rather than their size.

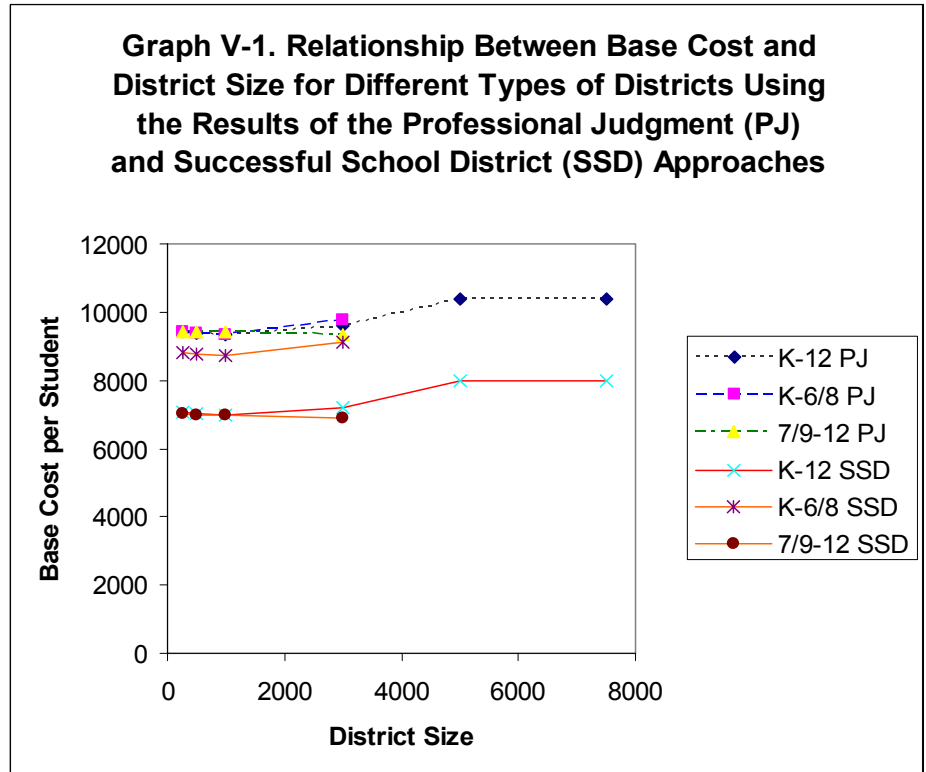
We reached this conclusion based on conversations that took place between members of the large K-12 district professional judgment panels.

In APA's judgment, it is necessary to reduce the base cost of the large K-12 districts to the level of the moderate size districts (from \$11,639 to \$10,388). To incorporate what the panelists identified as extra costs of operating urban districts, APA has created an "urban factor" – with a weight of .121 ($[(11,639-10,388)/10,388]$) – that applies to large districts that have: (1) more than 9,000 students; and (2) widely diverse student populations, for which we use the proxy of having an at-risk population greater than half of all students. In fact, the urban factor might also apply to other, smaller districts with similar urban characteristics (e.g., other ERG districts).

For K-6/8 districts, we compared the figures produced by the K-8 PJ panel (from Table IV-11) to ones we created for small and moderate size K-12 districts. We excluded the figures produced for large K-12 districts since, as discussed above, we believe the urban factor was involved in those PJ panel numbers. APA then gathered school- and district-level cost data for K-6/8 by examining elementary and middle school costs (using school-level data shown in Tables IV-10B and 10C) and then adding in district-level costs (from Table IV-11). Elementary school data were weighted twice as much as middle school data to reflect the difference in number of grades covered. Making these calculations, we found a K-6/8 cost of \$9,199 in a district with 2,065 students and a cost of \$10,937 in a district with 4,970 students. In order to assure that the base cost for K-12 districts did not fall below the base cost for K-6/8 districts, we substituted the K-6/8 formula for K-12 districts with fewer than 2,065 students.

For 7/9-12 districts, APA had no specific professional judgment panel results. We examined instead the high school costs of the K-12 professional judgment panels (by adding high school costs from Table IV-10D with district costs from Table IV-11). This analysis found the following costs: for small districts, \$9,339; for moderate size districts, \$9,232; and for large districts, \$10,418. Again, we felt that the difference between moderate and large district costs reflected the previously discussed urban factor. We created a formula that essentially raised the base cost for 7/9-12 districts for every student below 4,970 students.

Based on the above discussion, we created formulas to calculate base cost figures for K-12, K-6/8, and 7/9-12 districts. We also created formulas that could be applied to the base cost results obtained from the successful school district approach so that the graphical interpretation of the relationship between size and base cost would be the same shape as the relationship between base cost and size using PJ results. The graphs of all six lines (K-12, K-6/8, and 7/9-12 for both the PJ and SSD approaches) are shown in Graph V-1. In the case of K-6/8 and 7/9-12 districts, we do not show lines for district size greater than 3,000 students since no districts with those grade configurations in the state have enrollments that large.



The table below shows values of the base cost for different grade configurations and different size school districts using either the SSD base or the PJ base.

Size of District	<u>Base Per-Student Cost by Size and Grade Configuration*</u>					
	<u>Starting 2003-04 (using SSD data)</u>			<u>Adequacy Target (using PJ data)</u>		
	K-12	K-6/8	7/9-12	K-12	K-6/8	7/9-12
100	\$7,086	\$8,823	\$7,019	\$9,447	\$9,447	\$9,445
250	\$7,067	\$8,804	\$7,012	\$9,428	\$9,428	\$9,438
500	\$7,035	\$8,772	\$7,001	\$9,396	\$9,396	\$9,427
1,000	\$6,971	\$8,709	\$6,979	\$9,333	\$9,333	\$9,405
2,000	\$6,846	\$8,583	\$6,935	\$9,207	\$9,207	\$9,361
4,000	\$7,614			\$9,999		
7,500	\$8,003			\$10,388		
10,000	\$8,003			\$10,388		
15,000	\$8,003			\$10,388		

*Note: All figures must also be adjusted for inflation after 2003-04.

Creating Cost Weights for Students with Special Needs

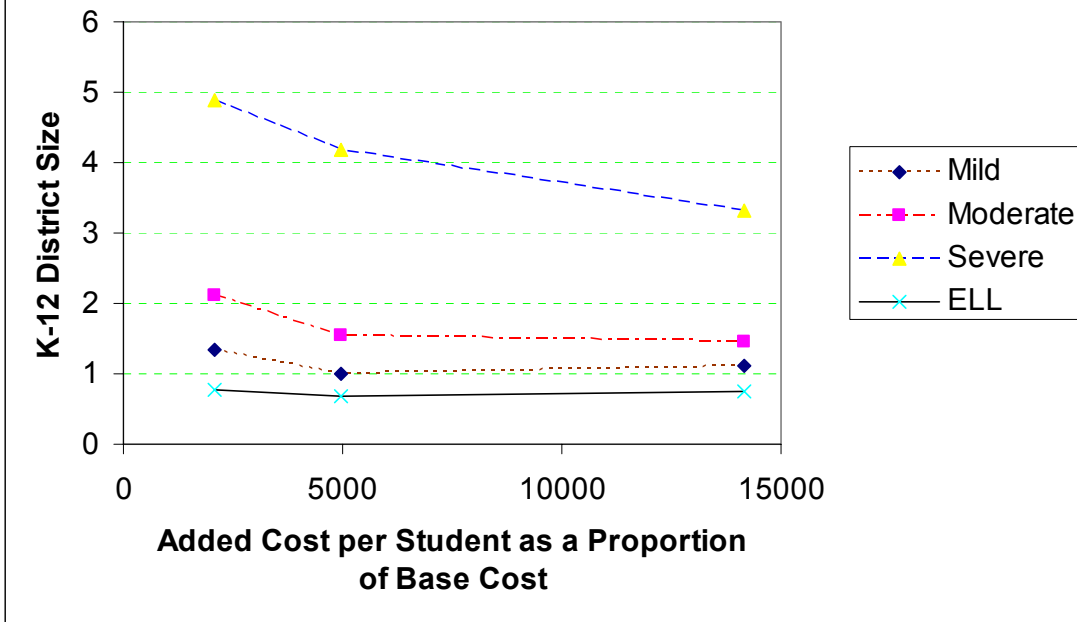
As discussed earlier, student weights are designed to reflect the cost of serving students with special needs relative to a base cost. Only the professional judgment approach provided us with information about the cost of serving students with special needs. The basic information needed to calculate weights comes from Table IV-11. In the table below, we show the added cost weights for students with special needs (three levels of special education, six concentrations of at-risk students, and ELL students).

Added Cost Weights for Students with Special Needs				
	K-6/8	K-12 Small	K-12 Moderate	K-12 Large
Base Cost	\$9,414	\$9,223	\$10,388	\$10,388
<i>Special Education</i>				
Mild	1.380	1.339	0.987	1.124
Moderate	2.171	2.110	1.540	1.454
Severe	6.618	4.883	4.182	3.322
<i>At Risk Concentration</i>				
10%	0.340	0.618	-	-
20%	0.275	0.435	0.500	0.454
30%	-	0.380	-	-
40%	-	-	0.385	0.368
60%	-	-	0.381	0.296
80%	-	-	-	0.269
<i>ELL</i>	0.160	0.771	0.675	0.761

When these weights are applied to the base costs identified earlier, APA identified initial per-student costs for various students with special needs. APA noted, however, that the results for the K-6/8 districts were significantly different. In particular, the severe special education added costs were significantly higher and the ELL added costs were significantly lower than the K-12 numbers. In APA's judgment, the differences in the K-6/8 results were sufficiently different from those of the three different size K-12 districts that we *rejected* the K-6/8 weights.

Having rejected the K-6/8 weights, APA proceeded to develop formulas to determine the added cost weights for serving special education, ELL and at-risk students. For ELL and special education students, APA graphed the weights for the K-12 districts (as shown below in Graph V-2).

Graph V-2. Added Cost of Special Education and ELL Services for K-12 Districts of Different Size

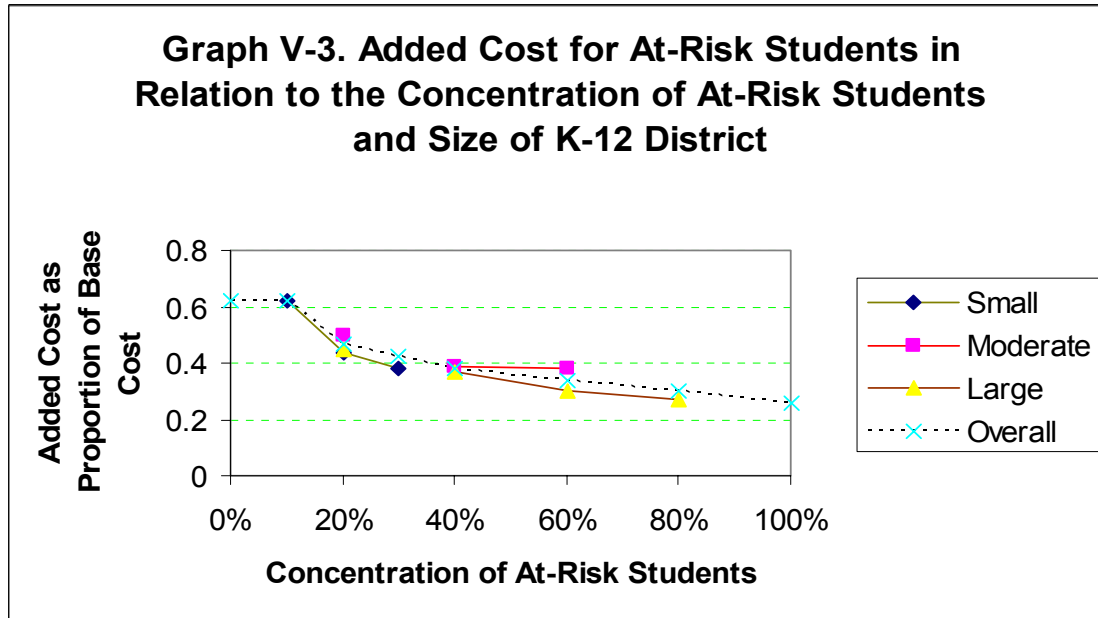


The graph indicates that the weights for special education generally decrease as district size increases (the weight for mild special education goes up slightly between 4,970 and 14,160 students and the weights for ELL are essentially the same regardless of district size). We accepted these relationships between district size and weights at face value and developed formulas that would mimic the lines shown in the graph (with the lines being flat below 2,065 and above 14,160 students). The examples in the box below indicate the weights for special education and ELL at various district sizes.

Weighted Costs for Students with Special Needs

District Size	<u>Special Education</u>			<u>ELL</u>
	Mild	Moderate	Severe	
100	1.34	2.11	4.88	.76
250	1.34	2.11	4.88	.76
500	1.34	2.11	4.88	.76
1,000	1.34	2.11	4.88	.76
2,000	1.34	2.11	4.88	.76
4,000	1.11	1.69	4.41	.76
7,500	1.02	1.52	3.94	.76
10,000	1.06	1.49	3.71	.76
15,000	1.12	1.45	3.32	.76

It was somewhat more complicated to develop a formula for the at-risk weight based on the concentration of at-risk students. In order to determine how the weights for at-risk students changed in relation to the concentration of such students and district size in K-12 districts, we graphed the previously shown relative cost figures in Graph V-3.



The lines in the graph represent different size districts. We felt that the points were sufficiently close at various levels of concentration and the lines were sufficiently similar in slope (as the slope changed from lower to higher concentration levels) that essentially one line could be used to represent the relationship between concentration and the size of the at-risk weight. That line (shown as the “overall” line in Graph V-3) indicates that, as the concentration of at-risk students increases, the relative cost of serving such students decreases from about .62 (at 10 percent concentration) to about .27 (at 100 percent concentration).

At first glance, this decrease in relative cost may seem surprising. However, it makes sense if one thinks about it this way: the cost of establishing programs for a small number of at-risk students is probably relatively high but the cost *per at-risk student* should go down as those programs serve more students. It should be noted though, that this does not necessarily mean that a district with higher numbers of at-risk students will have lower *overall* costs. For instance, if a district with 5,000 students had a base cost of \$6,000 and a concentration of 10 percent at-risk students (500 students), then an at-risk weight of .60 would mean that each at-risk student had a cost of \$3,600 (\$6,000 times .60) and that the district had a total cost of \$1.8 million to serve 500 students. This \$1.8 million increases the average cost across all students by \$360. If that same district had 80 percent at-risk students, with a weight of .30, then the cost per at-risk student would be \$1,800 (6,000 times .30). But, the total cost of serving all at-

risk students would be \$7.2 million. This higher amount increases the average cost across all students by \$1,440 per student.

The table below indicates the weight for at-risk students based on concentration and shows the average impact across all students. The reader might note that, as the concentration of at-risk students increases, the per-student weight decreases by about half (from .62 to .28). At the same time, however, the overall cost impact – when spread across all students – more than quadruples (from 6.2% to 25.2%):

Weighted Costs for Students with Special Needs		
Concentration of At-Risk Students	Weight At-Risk Students	Impact on Cost of All Students
10%	.62	6.2%
20%	.47	9.4%
30%	.425	12.8%
40%	.38	15.25
50%	.36	18.0%
60%	.34	20.4%
70%	.32	22.4%
80%	.30	24.0%
90%	.28	25.2%

Should Costs Be Adjusted To Reflect Geographic Cost Differences?

Educators in Connecticut, like those in many other states, are concerned that school districts in different parts of the state must pay different amounts for personnel and materiel that are of the same quality. This phenomenon is referred to as a geographic cost difference. Despite widespread interest in this issue, researchers have had difficulty measuring the effect and only a few states include such adjustments in the state’s school finance system. The states that do make an attempt to quantify geographic cost differences use one of three alternative approaches: (1) calculating differences in the cost-of-living across districts; (2) determining differences in the cost of supplies and materials used in providing education services across districts; or (3) estimating the extent to which different districts have to pay more or less in order to attract and retain personnel, primarily teachers, based on characteristics of districts.

APA explored a couple of alternative ways of thinking about geographic cost differences. We looked at two approaches: (1) cost-of-living differences; and (2) the cost of attracting/retaining teachers. In the case of the first approach, we analyzed data for the cost of housing in cities and towns in the state because housing is both a primary determinant of cost-of-living and is the largest factor that varies significantly across a state the size of Connecticut. This view was supported by economists in the state,

including Stan McMillen of the Connecticut Center for Economic Analysis and John Clapp of the Business School at the University of Connecticut.

In our analysis, the cost of housing varies around a statewide average of 1.00 and is slightly lower (between .85 and 1.00) in many smaller communities and in larger cities, while it is much higher (1.50-2.00) in suburban communities in the southwest corner of the state. Despite these broad regional variations in the cost of living, it is possible in Connecticut for school district employees to live in a community with lower housing costs than the one in which they work and still have a reasonable commuting time between the two locations. Given the large spread in the magnitude of the factor across communities and having no rationale for modifying the measurements to mitigate their impact, we were not persuaded to use the figures to adjust our cost estimates.

In the case of the second approach, we examined the geographic cost-of-education index (GCEI) developed a decade ago under the sponsorship of the National Center for Education Statistics and refined more recently. The GCEI uses an econometric approach and a significant amount of data (including teacher survey data) to estimate the relative cost of making all communities equally attractive to teachers with similar levels of education and experience. The figures it produces tend to cluster around an average of one (between .80-1.20) and tend to be higher in urban areas. Among the criticisms of the GCEI approach are its failure to measure factors that actually lead teachers to remain employed in particular places and the fact that federal survey data are now dated. Finally, regional variation is only part of the problem of attracting and retaining teachers. Again, APA did not feel comfortable using the available GCEI adjustment as part of our recommendations. Alternative cost indices are shown in Appendix C.

Applying the Adequacy Cost Estimate

This section is designed to accomplish two key functions to help:

- (1) Calculate funding adequacy in a school district; and
- (2) Compare the cost of adequacy to current spending.

Calculating Funding Adequacy in a School District

Having developed formulas to estimate the base cost and student weights, it is possible to estimate the cost of adequacy in a district of any size and with any combination of demographic characteristics. Since adequacy can be calculated using successful school district or professional judgment base cost results (one representing the “starting point”, 2003-04, and the other representing the adequacy “target”), these **starting base costs** and **target base costs** have been calculated, although no figures have been adjusted for inflation.

It is important to keep in mind that costs are based on the assumption that individual students may be classified as having several different types of special needs,

which allows them to accumulate multiple weights. Implementation of the recommended levels of funding should appropriately provide the resources for special needs students. The costs identified assume that state, local, and federal funds could all be used as sources of offsetting revenue. Family contributions might also be used to pay for a portion of certain programs/services included in total costs (for example, extended hours for pre-school services).

The following three hypothetical examples are instructive in understanding how the costs of adequacy are calculated in individual school districts based on their characteristics.

A) If a K-12 district had 2,000 students, 13 percent of whom were in special education programs (eight percent mild, four percent moderate, and one percent severe), 22 percent of whom were eligible for free/reduced price lunch, and two percent of whom were in ELL programs, the cost of adequacy would be calculated as follows:

Starting (2003-04)

1. Base cost = 2,000 X \$6,846 or \$13,692,000
2. Special Education
 - Mild* = 2,000 X .08 X \$6,846 X 1.34, or \$1,467,782
 - Moderate* = 2,000 X .04 X \$6,846 X 2.11, or \$1,155,605
 - Severe* = 2,000 X .01 X \$6,846 X 4.88, or \$668,170
3. At-risk = 2,000 X .22 X \$6,846 X .461, or \$1,388,643
4. ELL = 2,000 X .02 X \$6,846 X .76, or \$208,118
5. *Total* = \$18,580,318, or \$9,290 per student

Target (excluding inflation from 2003-04)

1. Base cost = 2,000 X \$9,207 or \$18,414,000
2. Special Education
 - Mild* = 2,000 X .08 X \$9,207 X 1.34, or \$1,973,981
 - Moderate* = 2,000 X .04 X \$9,207 X 2.11, or \$1,554,142
 - Severe* = 2,000 X .01 X \$9,207 X 4.88, or \$898,603
3. At-risk = 2,000 X .22 X \$9,207 X .461, or \$1,867,548
4. ELL = 2,000 X .02 X \$9,207 X .76, or \$279,893
5. *Total* = \$24,988,167, or \$12,494 per student

B) For a larger district, with 12,000 students, having the same proportions of students with special needs, the calculation would be as follows:

Starting (2003-04)

1.	Base cost	=	12,000 X \$8,003 or \$96,036,000
2.	Special <u>Education</u>		
	<i>Mild</i>	=	12,000 X .08 X \$8,003 X 1.08, or \$8,297,510
	<i>Moderate</i>	=	12,000 X .04 X \$8,003 X 1.38, or \$5,646,917
	<i>Severe</i>	=	12,000 X .01 X \$8,003 X 3.52, or \$3,380,467
3.	At-risk	=	12,000 X .22 X \$8,003 X .461, or \$9,739,971
4.	ELL	=	12,000 X .02 X \$8,003 X .76, or \$1,459,747
5.	<i>Total</i>	=	<i>\$124,214,882, or \$10,351 per student</i>

Target (excluding inflation from 2003-04)

1.	Base cost	=	12,000 X \$10,388 or \$124,656,000
2.	Special <u>Education</u>		
	<i>Mild</i>	=	12,000 X .08 X \$10,388 X 1.08, or \$10,770,278
	<i>Moderate</i>	=	12,000 X .04 X \$10,388 X 1.47, or \$7,329,773
	<i>Severe</i>	=	12,000 X .01 X \$10,388 X 3.52, or \$4,387,891
3.	At-risk	=	12,000 X .22 X \$10,388 X .461, or \$12,642,612
4.	ELL	=	12,000 X .02 X \$10,388 X .76, or \$1,894,771
5.	<i>Total</i>	=	<i>\$161,232,563, or \$13,436 per student</i>

C) Finally, for an urban district with 12,000 students, having the same proportion of students in special education and ELL programs but with 70 percent of its students eligible for free/reduced price lunch the calculation would be as follows:

Starting (2003-04)

1.	Base cost	=	12,000 X \$8,003 X 1.121 or \$107,656,356
2.	Special <u>Education</u>		
	<i>Mild</i>	=	12,000 X .08 X \$8,003 X 1.08, or \$8,297,510
	<i>Moderate</i>	=	12,000 X .04 X \$8,003 X 1.47, or \$5,646,917
	<i>Severe</i>	=	12,000 X .01 X \$8,003 X 3.52, or \$3,380,467
3.	At-risk	=	12,000 X .70 X \$8,003 X .30, or \$20,167,560
4.	ELL	=	12,000 X .02 X \$8,003 X .76, or \$1,459,747
5.	<i>Total</i>	=	<i>\$136,180,968, or \$11,348 per student</i>

Target (excluding inflation from 2003-04)

1.	Base cost	=	12,000 X \$10,388 X 1.121	or \$139,739,376
2.	Special Education			
	<i>Mild</i>	=	12,000 X .08 X \$10,388 X 1.08,	or \$10,770,278
	<i>Moderate</i>	=	12,000 X .04 X \$10,388 X 1.38,	or \$7,329,773
	<i>Severe</i>	=	12,000 X .01 X \$10,388 X 3.52,	or \$4,387,891
3.	At-risk	=	12,000 X .70 X \$10,388 X .30,	or \$26,177,760
4.	ELL	=	12,000 X .02 X \$10,388 X .76,	or \$1,894,771
5.	<i>Total</i>	=	\$190,299,849 or \$15,858 per student	

Comparing the Cost of Adequacy to 2003-04 Spending

Tables V-1A and V-1B compare the cost of adequacy to actual, comparable spending in 2003-04 for 166 districts in Connecticut. Figures are disaggregated into five categories of districts as follows: (1) K-6/8 districts; (2) small K-12 districts; (3) moderate size K-12 districts; (4) large K-12 districts and (5) 7/9-12 districts. Table V-1A focuses on the starting revenue level and uses the SSD base cost figure while Table V-1B focuses on the target level of revenues using the PJ base cost figure. All figures in the tables are in 2003-04 dollars.

Section I of Tables V-1A and V-1B shows the demographic characteristics of school districts in Connecticut. There were 45 K-6/8 districts, 113 K-12 districts (including eight regional K-12 districts), and seven 7/9-12 districts for which we had the necessary data to estimate the cost of adequacy. Of the K-12 districts, 59 were small (with enrollments less than 3,500 students, 42 were of moderate size (with between 3,500 and 9,000 students), and 12 were large (with more than 9,000 students). Of the 576,712 students enrolled in those 166 districts 37,008 were enrolled in K-6/8 districts, 130,287 were enrolled in small K-12 districts, 229,259 were enrolled in moderate size K-12 districts, 170,948 were enrolled in large K-12 districts, and 9,210 were in 7/9-12 districts.

Section II of Tables V-1A indicates the total cost of adequacy for K-6/8, K-12, and 7/9-12 districts as well as for the state as a whole in 2003-04 based on the starting base cost level discussed previously. Using that base cost, the total cost of an adequate education in 2003-04 would have been about \$5.961 billion. The cost of providing base services to all students would have been \$4.580 billion. The added cost to serve students with special needs would have been: special education services – \$819 million; serving at-risk students – \$413 million; and serving ELL students – \$150 million. Taken together, these costs equate to \$10,337 per student (as shown in Section III of Table V-1A).

Section IV of Table V-1A displays actual, comparable spending in 2003-04. In that year, the 166 school districts spent \$5.656 billion, or \$9,807 per student. These

figures suggest that school districts would have needed to spend \$305 million more than what they were spending in order to reach an adequate level of spending.

Because it is likely that some districts had more than adequate revenue while others had less than adequate revenue, it is important to examine separately those districts that appear to be spending above and below adequate levels. Section V of Table V-1A displays information about districts spending more than the amount calculated as adequate in 2003-04. Section VI of Tables V-1A and V-1B shows information about the districts spending less than the level estimated to have been adequate in 2003-04. The data show that 93 districts would have needed a total of \$505.9 million, or \$1,233 per student, on average, to bring them up to the “starting” point. A total of 145 districts would have needed \$2.07 billion to reach the full adequacy “target.”

Some Implications for Connecticut’s School Finance System

Connecticut, like many states, uses a “foundation” type of formula to distribute a large portion of support for public elementary and secondary education. Unlike most other states, state aid flows to cities and towns – not directly to school districts – which then determine how much revenue public schools receive. Connecticut’s program is known as the Education Cost Sharing (ECS) Grant program. Under this approach, the state determines a target revenue for each town based on the demographic characteristics of its students. The state then pays a calculated portion of the target based on the relative wealth of the district, taking both property value and personal income into consideration.

In order to determine target revenue, the state sets a foundation level, a constant amount, and “weights” students with certain special needs (based on family income, student performance, limited-English proficiency, etc.). In addition, the state provides support for special education and several other smaller programs either as part of the ECS program or separately from it. Given that the ECS system attempts to consider both the varying needs of school districts and their differing capacities to pay for those needs, the system appears to be a reasonable way to provide support for public education and has a number of components that are similar to those in place in other states’ education aid distribution systems.

Like many other states, however, a deficiency of the ECS system is its basis for setting the parameters that drive the allocation of funds – from the foundation level to the various weights associated with specific student needs. In our view, one important value of the current APA study is that it provides a rational basis for setting the parameters that can be used in the ECS formula. That is, the study’s base cost levels and urban factor (varying by school district configuration and size) could replace the state’s foundation level, and the study’s weights (and formulas for adjusting weights based on concentration of at-risk students or district size) could replace the state’s current set of weights.

Of course, Connecticut policymakers and education leaders still need to think about the transportation costs and capital costs school districts face since those have been excluded from our analysis. And leaders will have to address the issue of where revenue might come from to pay for the costs we have identified. In our view, local, state, and federal funds can be used to pay for the identified costs. There is no particular overall state-local share of costs that is correct, although the higher the state share, the easier it is to assure fiscal equity across school districts.

In summary, this study has identified two base adequacy cost levels which we have referred to as the “starting point” and the “target.” The starting point uses the successful school district base cost. This cost, which is applied to 2003-04, would be two years out of date if it were to be used in allocating state aid in 2005-06. We believe that the state should reach the target funding level by 2010-11 in order to assure that districts have adequate revenue levels for three years prior to 2013-14, the final year of No Child Left Behind.

One way to get from the starting point to the target is to raise the base cost each year by a constant amount and adjust for inflation from 2003-04. For example, the difference between the starting base cost and the target base cost of a district of 4,000 students is \$2,386. If this amount were divided evenly across seven years (2003-04 to 2010-11) an increase of \$341 would be required each year (before inflation). So the base cost in 2004-05 would have been \$8,113 if inflation between 2003-04 and 2004-05 had been 2.0 percent. The base would increase as follows until 2010-11 (assuming 2 percent inflation each year): in 2005-06 it would be \$8,623; in 2006-07, \$9,143; in 2007-08, \$9,674; in 2008-09, \$10,215; in 2009-10, \$10,767; and in 2010-11 it would be \$11,330. Beyond 2010-11, the base would only rise by inflation.

TABLE V-1A

ESTIMATING THE STARTING COST OF ADEQUACY FOR
CONNECTICUT SCHOOL DISTRICTS IN 2003-04

	<u>District Type and Size</u>					<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>	<u>7/9-12</u>	
I. <u>School District Characteristics</u>						
Range in Size of District (Students)	Any	<3,500	3,500 – 9,000	≥9,000	Any	
Number of Districts	45	59	42	12	8	166
Number of Students	37,008	130,287	229,259	170,948	9,210	576,712
II. <u>Estimated Aggregate Cost of Adequacy (millions)*</u>						
Base Cost	\$322.2	\$920.5	\$1,810.7	\$1,462.0	\$64.1	\$4,579.5
Special Education	\$48.0	\$182.3	\$312.3	\$262.4	\$14.3	\$819.2
At-Risk	\$9.4	\$52.8	\$125.9	\$223.2	\$1.4	\$412.7
ELL	\$0.6	\$11.0	\$27.5	\$110.5	\$.2	\$149.8
Grand Total	\$380.2	\$1,166.6	\$2,276.4	\$2,058.1	\$80.0	\$5,961.2
III. <u>Estimated Cost of Adequacy Per Student*</u>						
<i>Grand Total</i>	<i>\$10,274</i>	<i>\$8,954</i>	<i>\$9,929</i>	<i>\$12,039</i>	<i>\$8,681</i>	<i>\$10,337</i>
IV. <u>Actual Comparable Spending*</u>						
Aggregate Total (millions)	\$359.4	\$1,193.8	\$2,163.9	\$1,839.5	\$99.5	\$5,656.1
<i>Per Student Total</i>	<i>\$9,712</i>	<i>\$9,163</i>	<i>\$9,439</i>	<i>\$10,760</i>	<i>\$10,799</i>	<i>\$9,807</i>

TABLE V-1A (Continued)

	<u>District Type and Size</u>				<u>7/9-12</u>	<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>		
V. <u>Districts with <i>Higher</i></u>						
<u>Spending than the Amount</u>						
<u>Estimated to be Adequate</u>						
Number of Districts	19	37	8	2	8	74
Number of Students	14,441	76,743	42,635	40,403	9,210	163,211
Estimated 2003-04 Adequate Spending (Aggregate in millions)*	\$145.5	\$670.8	\$393.6	\$212.2	\$80.0	\$1,502.0
Actual 2003-04 Spending (Aggregate in millions)*	\$157.5	\$735.9	\$462.9	\$251.1	\$99.5	\$1,706.8
Actual Spending Over Adequacy (Aggregate in millions)*	\$12.0	\$65.1	\$69.3	\$38.9	\$19.5	\$204.8
Per Student Spending Over Adequacy	\$832	\$849	\$1,625	\$1,926	\$2,118	\$1,255

TABLE V-1A (Continued)

	<u>District Type and Size</u>				<u>7/9-12</u>	<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>		
VI. <u>Districts with Lower</u>						
<u>Spending than the Amount</u>						
<u>Calculated to be Adequate</u>						
Number of Districts	26	22	34	10	0	93
Number of Students	22,567	53,544	186,624	150,766	-	413,502
Estimated 2003-04 Adequate Spending (Aggregate in millions)*	\$234.7	\$495.8	\$1,882.7	\$1,845.9	-	\$4,459.2
Actual 2003-04 Spending (Aggregate in millions)*	\$201.9	\$457.9	\$1,701.0	\$1,588.4	-	\$3,949.2
Actual Spending <i>Under Adequacy</i> (Aggregate in millions)*	\$32.8	\$37.9	\$181.7	\$257.5	-	\$509.9
Per Student Spending <i>Under Adequacy</i>	\$1,453	\$708	\$974	\$1,708	-	\$1,233

* Figures exclude spending for capital, transportation, and food service

TABLE V-1B

**ESTIMATING THE TARGET COST OF ADEQUACY WITHOUT
CONSIDERING INFLATION**

	<u>District Type and Size</u>					<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>	<u>7/9-12</u>	
I. <u>School District Characteristics</u>						
Range in Size of District (Students)	Any	<3,500	3,500 – 9,000	≥9,000	Any	
Number of Districts	45	59	42	12	8	166
Number of Students	37,008	130,287	229,259	170,948	9,210	576,712
II. <u>Estimated Aggregate Cost of Adequacy (millions)*</u>						
Base Cost	\$345.3	\$1,230.4	\$2,357.5	\$1,897.7	\$86.4	\$5,917.2
Special Education	\$51.5	\$243.6	\$406.6	\$340.5	\$19.3	\$1,061.6
At-Risk	\$10.1	\$70.5	\$163.8	\$289.8	\$1.9	\$536.1
ELL	\$0.7	\$14.6	\$35.8	\$143.4	\$.2	\$194.8
Grand Total	\$407.5	\$1,559.2	\$2,963.7	\$2,671.4	\$107.8	\$7,709.7
III. <u>Estimated Cost of Adequacy Per Student*</u>						
<i>Grand Total</i>	<i>\$11,010</i>	<i>\$11,967</i>	<i>\$12,927</i>	<i>\$15,627</i>	<i>\$11,707</i>	<i>\$13,368</i>
IV. <u>Actual Comparable Spending*</u>						
Aggregate Total (millions)	\$359.4	\$1,193.8	\$2,163.9	\$1,839.5	\$99.5	\$5,656.1
<i>Per Student Total</i>	<i>\$9,712</i>	<i>\$9,163</i>	<i>\$9,439</i>	<i>\$10,760</i>	<i>\$10,799</i>	<i>\$9,807</i>

TABLE V-1B (Continued)

	<u>District Type and Size</u>				<u>7/9-12</u>	<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>		
V. Districts with <i>Higher</i> <u>Spending than the Amount</u> <u>Estimated to be Adequate</u>						
Number of Districts	11	3	2	1	4	21
Number of Students	6,664	5,303	9,184	9,037	2,812	32,999
Estimated 2003-04 Adequate Spending (Aggregate in millions)*	\$72.6	\$59.9	\$110.5	\$119.7	\$33.3	\$395.9
Actual 2003-04 Spending (Aggregate in millions)*	\$76.5	\$64.2	\$115.5	\$124.1	\$35.8	\$415.9
Actual Spending Over Adequacy (Aggregate in millions)*	\$3.9	\$4.2	\$5.0	\$4.4	\$2.5	\$20.0
Per Student Spending Over Adequacy	\$584	\$798	\$544	\$483	\$906	\$607

TABLE V-1B (Continued)

	<u>District Type and Size</u>				<u>7/9-12</u>	<u>Total</u>
	<u>K-6/8</u>	<u>Small K-12</u>	<u>Mod. K-12</u>	<u>Lrg. K-12</u>		
VI. <u>Districts with Lower</u>						
<u>Spending than the Amount</u>						
<u>Calculated to be Adequate</u>						
Number of Districts	34	56	40	11	4	145
Number of Students	30,304	124,985	220,076	161,911	6,398	543,713
Estimated 2003-04 Adequate Spending (Aggregate in millions)*	\$334.9	\$1,499.3	\$2,853.3	\$2,551.8	\$74.6	\$7,313.8
Actual 2003-04 Spending (Aggregate in millions)*	\$283.0	\$1,129.7	\$2,048.5	\$1,715.4	\$63.6	\$5,240.2
Actual Spending <i>Under Adequacy</i> (Aggregate in millions)*	\$51.9	\$369.6	\$804.8	\$836.4	\$10.9	\$2,073.6
Per Student Spending <i>Under Adequacy</i>	<i>\$1,711</i>	<i>\$2,957</i>	<i>\$3,657</i>	<i>\$5,166</i>	<i>\$1,706</i>	\$3,813

* Figures exclude spending for capital, transportation, and food services.

APPENDICES

Appendix A

Professional Judgment Panel Membership

School-Level Panels

Alan Beitman, Superintendent
Monroe Public Schools

Mark Benigni, Assistant Principal
Berlin High School
Berlin Public Schools

Nora Brown, Teacher
Naylor Elementary School
Hartford Public Schools

Maureen Eberly, Special Education Teacher
East Granby High School
East Granby Public Schools

Kaye Griffin, Superintendent
Madison Public Schools

Thomas Jefferson, Superintendent
Somers Public Schools

Jeff Leake, Teacher
Dodd Middle School
Cheshire Public Schools

Adnelly Marichal, Director of English Language Learner Programs
New Britain Public Schools

Tedman Martinez, History & Guidance Teacher
New London High School
New London Public Schools

Hugh Murphy, Director of Finance
Stamford Public Schools

Paul Smotas, Assistant Superintendent Curriculum, Instruction & Finance
East Lyme Public Schools

Susan Whitney, School Business Manager
Thomaston Public Schools

Appendix A (Cont.)

District-Level Panels

Jerome Auclair, Principal
Darien High School
Darien Public Schools

Eddie Davis, Superintendent
Danbury Public Schools

John DiDonato, Assistant Superintendent
Student Support and Special Education Services
Bridgeport Public Schools

Michael Galluzzo, Principal
East Farms School
Farmington Public Schools

Robin Golden, Chief Operating Officer
New Haven Public Schools

Robert Henry, Superintendent
Hartford Public Schools

Tom Forcella, Superintendent
Region #4 (Chester, Deep River, Essex)

Edward Harris, Superintendent
Region #11 (Chaplin, Hampton, Scotland)

Jason Hiruo, Dean of Students
Newtown High School

Anne Jellison, Superintendent
Winchester Public Schools

Richard Kisiel, Superintendent
Avon Public Schools

Margo Marvin, Superintendent
Putnam Public Schools

Paul Perzanoski, Superintendent
Windham Public Schools

Appendix A (Cont.)

Lynne Pierson, Superintendent
Weston Public Schools

Robert Polley, Board of Education Member
Norwalk Public Schools
Teacher, New Canaan Public Schools

Vanessa Taragowski, SPED Director
Area Cooperative Educational Services (ACES)

John Theriault, Board of Education Member
Waterbury Public Schools

Diane Ullman, Superintendent
Simsbury Public Schools

Deborah Willard, Dir. of History & Social Science
Glastonbury Public Schools

Overview Panel

George Coleman, Associate Commissioner
Division of Teaching and Learning Programs and Services
Connecticut State Department of Education

Rosemary Coyle, President
Connecticut Education Association (CEA)

Bruce Douglas, Executive Director
Capitol Region Education Council (CREC)

Bob Hale, Vice President
Connecticut Association of Boards of Education (CABE)
Member, Madison Board of Education

Jack Hasegawa, Bureau Chief for Educational Equity
Connecticut State Department of Education

Larry Leverett, Superintendent
Greenwich Public Schools

James Mitchell, Superintendent
Groton Public Schools

Appendix A (Cont.)

John O'Brien, Superintendent
Region #1 (Canaan, Cornwall, Kent, North Canaan,
Salisbury, Sharon)

John Ramos, Sr., Deputy Commissioner for Educational Programs
Connecticut State Department of Education

David Scata, President-Elect
Connecticut Council of Administrators of Special Education (ConnCASE)
Special Education Director, East Haddam Public Schools

Clarence Tolbert, Acting Superintendent
Bridgeport Public Schools

Robert Villanova, Superintendent
Farmington Public Schools

Joe Wood, Superintendent
South Windsor Public Schools

APPENDIX B

Summary of Connecticut's Resource Requirements and Performance Expectations

Presented to the Professional Judgment Panels
February, 2005
Hartford, CT

Augenblick, Palaich and Associates, Inc.
Denver, Colorado

The following document describes the input requirements and outcome expectations based on current state policy, including the agreement the state has reached with the federal government regarding the No Child Left Behind (NCLB) Act.

For the purposes of this meeting, you should assume that "all students" (shown as 100 percent) means "as close as possible to all students but not necessarily every single student." In a broader sense, and in the spirit of state and federal law, professional practice, local aspirations, and individual needs, you should assure that all students are safe, have an opportunity to participate in school programs and activities, are treated fairly, can perform proficiently, and have a reasonable chance to graduate from high school and lead productive lives as citizens of Connecticut.

Student Assessment:

Connecticut Mastery Test (CMT) and Connecticut Academic Performance Test (CAPT)

- The CMT measures the performance of students at grades 4, 6, and 8 in reading, writing, and mathematics and reflects the standards of CT's Curriculum Frameworks. These three content areas are assessed by means of five tests: the Degrees of Reading Power (DRP), Reading Comprehension, Mathematics, Direct Assessment of Writing, and Editing & Revising. Due to federal No Child Left Behind (NCLB) requirements, the CMT4 will test all students in grades 3-8 and move from fall to spring administration as of 2005-06, and science will be added for grades 5-8 beginning with the spring 2008 administration.
- The CAPT is designed to measure students' ability to apply what they have learned in school to situations they may encounter in real life. It reports on student performance in four areas: Mathematics, Reading Across the

Disciplines (Reading for Information and Response to Literature), Writing Across the Disciplines (Interdisciplinary Writing and Editing & Revising), and Science. Use of the CAPT as the sole criterion for promotion or graduation is prohibited. [C.G.S. § 10-14n] However, beginning in 2006, each school district must specify the basic skills necessary for high school graduation and specify a process for assessing students' competency in those skills, with one alternative being CAPT results at a level established by the local board of education. [C.G.S. § 10-233] Initially administered in grade 10, students who have not achieved mastery in one or more subject areas may voluntarily retake all or part of the test in grades 11 and 12. Test results become part of students' permanent record and are reported on their official school transcripts.

- Both the CMT and CAPT consist of a variety of item types, including multiple-choice, grid-in, short-answer, and extended-writing tasks. Performance in each of the tested content areas is represented by a scale score ranging from 100-400. Performance standards, based on scale scores, include Advanced, Goal, Proficient, Basic, and Below Basic; the top two levels define Goal Range, the mastery standard. Fall 2003 CMT and Spring 2004 CAPT state averages were as follows:

Grade	Content Area	State Avg Scale Score	% Within Goal Range	% At/Above Proficient Level
4	Math	248.4	58	80
	Reading	245.4	54	69
	Writing	259.7	66	83
6	Math	256.6	62	81
	Reading	250.3	62	74
	Writing	251.9	62	84

8	Math	250.0	56	77
	Reading	254.0	67	77
	Writing	251.2	62	81
10	Math	249.8	46	76
	Science	254.6	47	82
	Reading	249.8	48	79
	Writing	252.8	54	85

However, performance of students exhibits high correlation with socioeconomic status, so that districts that are members of the highest- and lowest-wealth Education Reference Groups (ERGs A and I, respectively) represent the outer ranges of scores. For example, for CMT gr. 4, ERG A standard score averages in math were 274 (81 percent of students at goal range), 273 in reading (82 percent at goal range), and 289 in writing (87

percent at goal range), compared in ERG I with 218 in math (29 percent at goal range), 215 in reading (23 percent at goal range), and 232 in writing (41 percent at goal range). Similar performance disparities apply to CAPT standard scores: ERG A average scale scores were 282 in math (80 percent of students at goal range), 289 in science (79 percent at goal range), 287 in reading (82 percent at goal range), and 286 in writing (85 percent at goal range), whereas ERG I average scale scores were 213 in math (13 percent at goal range), 217 in science (16 percent at goal range), 218 in reading (19 percent at goal range), and 224 in writing (26 percent at goal range).

- Alternate assessment options are available based on individual determination by Special Education students' IEP and in accordance with state compliance with federal No Child Left Behind provisions. One alternate assessment option is out-of-level testing; another, for students with more significant impairments whose curriculum centers on functional/daily living/self-help/social skills, is the CMT/CAPT Skills Checklist. The Skills Checklist mirrors the domains tested on the standard assessments but focuses on the communication, quantitative, and science skills typically found in a curriculum with a functional focus.
- Students identified as English Language Learners must be tested annually using the Language Assessment Scales Oral, Reading, and Writing tests to assess their progress in obtaining English. To "exit" from bilingual, ESL, or other language support services, students must meet the state's English mastery standard: (for grades K-12) level 5 performance on the LAS Oral, (for grades 2-12) level 3 performance on the LAS Reading and Writing, (for grades K-2) grade-level performance on the DRA, and (for grades 4-9) proficiency on the math and reading subtests and basic or above on the writing subtest of the CMT or (for grades 10-12) basic or above on the math, reading, and writing subtests of the CAPT. Until all applicable standards have been met, students must continue to be provided with English language instruction.

Adequate Yearly Progress (AYP) Performance Targets

- Reading and math sub-scores of the CMT and CAPT are used to measure AYP as defined by NCLB regulations. Requirements for determining AYP and reaching 100 percent proficiency by 2013-14 are shown below.

	CMT				CAPT			
	Reading		Mathematics		Reading		Mathematics	
	AYP Level	Suggested Annual Targets	AYP Level	Suggested Annual Targets	AYP Level	Suggested Annual Targets	AYP Level	Suggested Annual Targets
2002-03	57%	57%	65%	65%	62%	62%	59%	59%
2003-04		60%		67%		65%		62%
2004-05	68%	68%	74%	74%	72%	72%	69%	69%
2005-06		71%		77%		75%		73%
2006-07		75%		80%		78%		76%
2007-08	79%	79%	82%	82%	81%	81%	80%	80%
2008-09		82%		85%		84%		83%
2009-10		85%		89%		88%		87%
2010-11	89%	89%	91%	91%	91%	91%	90%	90%
2011-12		94%		96%		96%		95%
2012-13		98%		99%		99%		98%
2013-14	100%	100%	100%	100%	100%	100%	100%	100%

- In addition, 70 percent of students in elementary and middle schools must score basic or above or show annual improvement on the CMT writing subtest, high schools must meet a 70 percent graduation rate or show annual improvement, and all schools and student subgroups must meet a 95 percent participation rate in the state's testing program. Failure to meet NCLB performance targets — at the student subgroup, school, and district levels — results in an escalating series of sanctions consistent with NCLB mandates.

State Board Requirements:

A highly educated citizenry is Connecticut's most valuable resource. The development of educated and productive citizens requires a plan and the passion to relentlessly pursue success for each student.

The State Board of Education's comprehensive plan addresses one part of the statutory requirement under C.G.S. 10-4 to provide leadership to school districts with respect to preschool, elementary and secondary education, special education, vocational education and adult education by developing a comprehensive plan every five years. Since 1997, as a response to the

Connecticut Supreme Court decision in *Sheff v. O'Neill*, the State Board of Education has also been required to establish a five-year plan with biennial updates and recommendations in order to accomplish the five statutory goals set forth in C.G.S. Section 10-4p:

- to achieve resource equity and equality of opportunity;
- to increase student achievement;
- to reduce racial, ethnic and economic isolation;
- to improve effective instruction; and
- to encourage greater parental and community involvement in all public schools of the state.

The State Board of Education has also developed position statements and guidance for school districts that include the following statements on the education provided to students throughout the state.

- The arts play an essential role in the daily lives of citizens in our society, and are essential to the expression of human experience. There is also strong evidence that students educated in and through the arts achieve at higher levels in other areas of the curriculum and in their adult lives.
- Schools must seek to enhance student learning by addressing the intellectual, emotional and physical safety needs of students and staff. All students deserve a quality education that incorporates the teaching of respect for others and self, integrity, citizenship and sense of commitment and obligation to the school and community.
- The mission of the State Board is to ensure “that each child shall have...equal opportunity to receive a suitable program of educational experiences.” To accomplish this mission and to fulfill the requirements of Public Act No. 99-211, *An Act Improving Bilingual Education*, the Board affirms that programs be provided those students who are acquiring English as a second language.
- *Connecticut's Common Core of Learning* defines common goals for all students, including those with disabilities. Connecticut's public education system has the duty to provide opportunities for all students to achieve the statewide student goals (motivation to learn, mastery of the basic skills, acquisition of knowledge, competence in life skills and understanding society's values).
- The Board's definition of equal educational opportunity is student access to a level and quality of programs and experiences that provide each child with the means to achieve the standard of an educated citizen defined by Connecticut's Common Core of Learning. Evidence of equal educational opportunity is the participation and achievement of each student in challenging educational programs, regardless of factors such as family income, race, gender, or town of residence.
- The State Board believes that every student must develop strong technological skills and continually use them in order to function

adequately in our 21st century world. Connecticut schools must ensure that technology resources are integrated across the curriculum in preK-12 and become part of the fabric of instruction.

- The State Board believes that a strong language arts program is essential to ensure that students develop the skills they need to comprehend and communicate effectively.
- The State Board believes that every student needs and deserves a high-quality, comprehensive mathematics education program that develops mathematical facility in the basic skills and quantitative literacy in numbers, measurement, algebra, geometry and statistics.
- The most critical set of responsibilities for a local board of education is to articulate clearly what success means in its district; establish standards of performance; measure performance against those standards; regularly make this information available to the public; and ensure that this information is used to make good decisions which support student success.
- The State Board is committed to ensuring that all of the state's preschool-age children, including children with disabilities, are afforded an opportunity to participate in a high-quality preschool education.
- By offering parents and students choices among a range of educational programs and settings, the State Board believes our educational system will maximize the opportunity for each student to achieve his/her highest potential.
- The State Board recognizes that students can benefit from participation in educational programs which provide a combination of school-based and work-based experiences that are connected by a series of career exploration activities and assessments and a more deliberate selection of course work based on potential career interests.
- The Board believes that learning science is important for all students in order to prepare them to be informed individuals and citizens and to participate in a wide range of scientific and technological careers.
- The State Board believes that Connecticut's public education system has the duty to provide a continuum of developmental, preventative, remedial, and supportive services that enhance opportunities for **all** students to achieve academic success and personal well-being.
- The State Board believes that educators and local school board members must demonstrate leadership in seeking ways to continuously improve student achievement and close the achievement gaps. A source of improved student achievement, supported by the most current research, is more personal school settings that are staffed by highly qualified educators.

Legislative Requirements:

Sec. 10-16. Length of school year. Each school district shall provide in each school year no less than one hundred and eighty days of actual school sessions for grades kindergarten to twelve, inclusive, nine hundred hours of actual school work for full-day kindergarten and grades one to twelve, inclusive, and four hundred and fifty hours of half-day kindergarten, provided school districts shall not count more than seven hours of actual school work in any school day towards the total required for the school year.

Sec. 10-16b. Prescribed courses of study. (a) In the public schools the program of instruction offered shall include at least the following subject matter, as taught by legally qualified teachers: the arts; career education; consumer education; health and safety, including, but not limited to, human growth and development, nutrition, first aid, disease prevention, community and consumer health, physical, mental and emotional health, including youth suicide prevention, substance abuse prevention, safety, which may include the dangers of gang membership, and accident prevention; language arts, including reading, writing, grammar, speaking and spelling; mathematics; physical education; science; social studies, including, but not limited to, citizenship, economics, geography, government and history; and in addition, on at least the secondary level, one or more foreign languages and vocational education. For purposes of this subsection, language arts may include American sign language or signed English, provided such subject matter is taught by a qualified instructor under the supervision of a teacher who holds a certificate issued by the State Board of Education.

Sec. 10-17f. Duties of boards of education regarding bilingual education programs. Development of state English mastery standard. Regulations. (a) Annually, the board of education for each local and regional school district shall ascertain, in accordance with regulations adopted by the State Board of Education, the eligible students in such school district and shall classify such students according to their dominant language.

Sec. 10-33. Tuition in towns in which no high school is maintained. Any local board of education which does not maintain a high school shall designate a high school approved by the State Board of Education as the school which any child may attend who has completed an elementary school course, and such board of education shall pay the tuition of such child residing with a parent or guardian in such school district and attending such high school.

APPENDIX C

ESTIMATES OF SCHOOL FUNDING ADEQUACY IN 2003-04 FOR CONNECTICUT SCHOOL DISTRICTS

The following table contains information concerning the adequacy of school funding for 166 K-12, K-6/8, and 7/9-12 school districts in Connecticut. All cost data are for 2003-04. The table contains the following information:

District Number	Assigned by the state.
District Name	Name of city or town or regional district number
Type	1 = K-12, 2 = K-6/8, and 3 = 7/9-12
CRCLI SQRT	The square root of the index APA created to measure cost-of-living based on the cost of housing in school districts. The index assumes that housing costs are primarily responsible for cost-of-living differences among school districts. Since the raw values of such differences can be relatively high, the square root is used to reduce their impact (for example, the square root of 1.96 = 1.40). The statewide average figure is 1.00.
GCEI	The geographic cost of education index created by the National Center of Education Statistics. This index attempts to quantify the "attractiveness" of school districts and thereby to capture the cost of attracting and retaining teachers. The statewide average figure is 1.00.
Comparable	District current operating spending excluding transportation and food services in 2003-04. The spending included in these figures is comparable to (in the sense of an "apples to apples" comparison) the costs covered by the adequacy figures.

APPENDIX C (Continued)

PJ Adequacy

Adequate cost based on using the *base cost derived from the professional judgment analysis* undertaken by APA including adjustments for district size and weights for students with special needs.

SSD Adequacy

Adequate cost based on using the *base cost derived from the successful school district analysis* undertaken by APA including adjustments for district size and weights for students with special needs.

Dist. #	Name	Type	CRCLI SQRT	GCEI	Comparable	PJ Adequacy	SSD Adequacy
1	Andover	2	0.97	0.93	\$5,487,760	\$6,607,955	\$6,168,260
2	Ansonia	1	0.94	1.05	\$21,626,586	\$37,187,697	\$27,865,510
3	Ashford	2	0.95	0.92	\$7,409,354	\$9,188,012	\$8,575,125
4	Avon	1	1.09	1.03	\$28,878,583	\$36,912,338	\$27,840,603
5	Barkhamsted	2	0.98	0.93	\$5,935,605	\$6,618,860	\$6,178,684
7	Berlin	1	0.99	1.04	\$28,157,083	\$41,007,036	\$30,990,426
8	Bethany	2	1.00	1.00	\$10,028,378	\$11,296,469	\$10,540,306
9	Bethel	1	0.99	1.08	\$31,229,610	\$38,739,490	\$29,218,286
11	Bloomfield	1	0.97	1.05	\$30,880,620	\$34,982,228	\$26,199,469
12	Bolton	1	0.97	0.96	\$9,483,960	\$10,812,628	\$8,078,543
13	Bozrah	2	0.98	0.92	\$3,555,047	\$4,933,218	\$4,606,068
14	Branford	1	0.99	1.05	\$35,085,536	\$47,897,855	\$36,351,993
15	Bridgeport	1	0.93	1.11	\$222,990,434	\$399,421,039	\$307,717,229
17	Bristol	1	0.95	1.05	\$80,267,430	\$123,528,305	\$95,167,215
18	Brookfield	1	1.03	1.07	\$26,971,305	\$34,543,001	\$26,003,524
19	Brooklyn	2	0.94	0.93	\$11,354,946	\$15,938,250	\$14,867,597
21	Canaan	2	1.04	0.90	\$2,468,499	\$2,087,480	\$1,949,451
22	Canterbury	2	0.95	0.92	\$8,378,547	\$10,125,849	\$9,450,475
23	Canton	1	0.99	1.02	\$14,391,190	\$18,523,759	\$13,797,604
24	Chaplin	2	0.95	0.89	\$4,106,678	\$4,007,047	\$3,741,463
25	Cheshire	1	0.99	1.05	\$46,070,258	\$62,800,253	\$48,381,828
26	Chester	2	1.00	0.94	\$5,909,587	\$5,967,565	\$5,571,000
27	Clinton	1	0.97	0.99	\$22,411,609	\$26,338,273	\$19,568,393
28	Colchester	1	0.96	0.98	\$25,818,270	\$37,506,478	\$28,255,843
29	Colebrook	2	0.98	0.90	\$2,743,297	\$2,774,757	\$2,591,088
30	Columbia	2	0.98	0.95	\$7,993,438	\$10,661,623	\$9,949,333
31	Cornwall	2	1.11	0.90	\$2,721,974	\$2,529,007	\$2,361,688
32	Coventry	1	0.96	0.98	\$17,379,744	\$25,660,767	\$19,048,982
33	Cromwell	1	0.98	0.99	\$17,335,515	\$22,304,535	\$16,593,512
34	Danbury	1	0.97	1.10	\$88,415,471	\$140,726,698	\$108,416,997
35	Darien	1	1.43	1.07	\$47,410,874	\$50,926,804	\$38,914,955
36	Deep River	2	0.99	0.95	\$7,726,337	\$7,557,947	\$7,054,779
37	Derby	1	0.95	1.03	\$13,633,165	\$21,025,059	\$15,660,406
39	Eastford	2	0.97	1.01	\$2,755,650	\$3,056,771	\$2,854,464
40	East Granby	1	0.99	0.98	\$9,385,571	\$9,885,227	\$7,388,116
41	East Haddam	1	0.98	0.99	\$13,309,054	\$17,009,901	\$12,682,330
42	East Hampton	1	0.96	1.06	\$17,986,118	\$24,760,711	\$18,371,128
43	East Hartford	1	0.95	1.05	\$74,867,315	\$118,731,074	\$91,471,388
44	East Haven	1	0.94	0.98	\$37,233,374	\$54,906,363	\$41,888,264
45	East Lyme	1	0.98	1.03	\$28,043,474	\$37,001,486	\$27,830,599
46	Easton	2	1.16	0.89	\$15,102,985	\$15,756,596	\$14,695,765
47	East Windsor	1	0.96	1.04	\$13,319,911	\$20,899,481	\$15,565,602
48	Ellington	1	0.96	0.98	\$20,610,518	\$26,757,449	\$19,942,853
49	Enfield	1	0.95	1.05	\$62,081,199	\$90,062,642	\$69,384,995
50	Essex	2	1.07	0.95	\$9,570,937	\$9,836,475	\$9,179,578
51	Fairfield	1	1.08	1.08	\$101,599,916	\$110,493,954	\$85,125,444
52	Farmington	1	1.04	1.04	\$38,138,664	\$51,104,266	\$39,080,178

Dist. #	Name	Type	CRCLI SQRT	GCEI	Comparable	PJ Adequacy	SSD Adequacy
53	Franklin	2	0.97	0.92	\$3,242,278	\$3,575,609	\$3,338,739
54	Glastonbury	1	1.02	1.05	\$55,740,074	\$85,720,840	\$66,040,035
56	Granby	1	0.98	1.03	\$19,136,994	\$24,496,696	\$18,199,734
57	Greenwich	1	1.47	1.08	\$124,053,945	\$119,688,581	\$92,209,060
58	Griswold	1	0.94	0.97	\$16,998,823	\$24,342,521	\$18,098,548
59	Groton	1	0.97	0.99	\$59,577,648	\$81,439,647	\$62,741,769
60	Guilford	1	1.02	1.05	\$36,285,332	\$46,564,836	\$35,423,201
62	Hamden	1	0.95	1.06	\$73,961,111	\$96,226,184	\$74,133,438
63	Hampton	2	0.95	0.88	\$3,258,277	\$3,049,090	\$2,847,207
64	Hartford	1	0.93	1.07	\$292,260,852	\$412,332,757	\$317,664,522
65	Hartland	2	0.97	0.98	\$3,695,488	\$4,275,138	\$3,991,643
67	Hebron	2	0.97	0.97	\$15,938,047	\$19,716,894	\$18,381,378
68	Kent	2	1.06	0.92	\$4,323,631	\$4,442,284	\$4,147,662
69	Killingly	1	0.94	0.95	\$25,240,213	\$38,064,050	\$28,513,228
71	Lebanon	1	0.96	0.97	\$10,964,335	\$15,665,926	\$11,686,189
72	Ledyard	1	0.96	0.98	\$25,995,542	\$34,071,071	\$25,558,833
73	Lisbon	2	0.95	0.94	\$6,722,724	\$9,560,775	\$8,923,061
74	Litchfield	1	0.99	0.96	\$12,845,716	\$15,557,333	\$11,601,453
76	Madison	1	1.05	1.04	\$31,701,184	\$45,387,777	\$34,477,567
77	Manchester	1	0.96	1.05	\$78,126,447	\$111,501,726	\$85,901,840
78	Mansfield	2	0.93	0.98	\$22,678,203	\$23,261,512	\$21,684,555
79	Marlborough	2	0.99	1.01	\$10,292,533	\$11,969,205	\$11,167,252
80	Meriden	1	0.94	1.07	\$98,936,554	\$142,162,678	\$109,523,288
83	Middletown	1	0.96	1.01	\$51,171,146	\$73,074,645	\$56,297,303
84	Milford	1	0.98	1.05	\$76,074,090	\$100,499,463	\$77,425,607
85	Monroe	1	1.01	1.08	\$36,031,018	\$48,897,799	\$37,340,645
86	Montville	1	0.95	0.98	\$27,317,583	\$38,530,085	\$28,962,833
88	Naugatuck	1	0.94	1.05	\$46,829,651	\$74,938,147	\$57,732,961
89	New Britain	1	0.93	1.06	\$106,509,745	\$194,521,903	\$147,551,716
90	New Canaan	1	1.46	1.07	\$48,345,237	\$46,573,319	\$35,464,463
91	New Fairfield	1	1.00	1.07	\$26,638,248	\$35,159,075	\$26,446,086
92	New Hartford	2	0.98	0.94	\$11,261,586	\$11,870,188	\$11,074,925
93	New Haven	1	0.93	1.08	\$243,887,465	\$322,465,284	\$248,429,887
94	Newington	1	0.96	1.04	\$41,916,967	\$57,778,296	\$44,320,228
95	New London	1	0.94	0.99	\$41,342,162	\$55,164,377	\$41,773,766
96	New Milford	1	0.98	0.98	\$41,507,157	\$67,775,912	\$52,215,116
97	Newtown	1	1.03	1.08	\$46,158,557	\$66,882,974	\$51,527,189
98	Norfolk	2	1.03	0.91	\$2,961,596	\$2,914,536	\$2,721,589
99	North Branford	1	0.97	1.04	\$20,879,622	\$30,030,084	\$22,438,234
100	North Canaan	2	0.95	0.94	\$5,326,190	\$6,012,006	\$5,612,743
101	North Haven	1	1.00	1.05	\$33,970,948	\$47,061,547	\$35,784,754
102	North Stonington	1	0.97	0.96	\$9,021,117	\$10,626,212	\$7,942,549
103	Norwalk	1	1.02	1.10	\$127,005,078	\$155,735,564	\$119,979,950
104	Norwich	1	0.94	0.99	\$52,608,503	\$84,072,913	\$64,770,459
106	Old Saybrook	1	1.03	0.98	\$15,683,158	\$19,057,069	\$14,197,611
107	Orange	2	1.03	1.03	\$24,854,347	\$26,658,288	\$24,905,435
108	Oxford	2	0.97	1.03	\$15,748,033	\$20,379,076	\$19,000,448
109	Plainfield	1	0.94	0.95	\$23,298,994	\$32,035,799	\$23,916,932
110	Plainville	1	0.95	1.04	\$25,586,149	\$33,709,750	\$25,207,020

Dist. #	Name	Type	CRCLI		Comparable	PJ Adequacy	SSD Adequacy
			SQRT	GCEI			
111	Plymouth	1	0.95	0.97	\$17,126,974	\$25,059,774	\$18,631,081
112	Pomfret	2	0.96	0.92	\$6,424,197	\$8,822,153	\$8,234,176
113	Portland	1	0.97	0.98	\$13,703,908	\$16,605,995	\$12,380,301
114	Preston	2	0.96	0.94	\$7,343,363	\$9,784,334	\$9,132,129
116	Putnam	1	0.94	0.95	\$14,987,944	\$18,449,708	\$13,757,379
117	Redding	2	1.14	1.05	\$20,973,563	\$19,349,202	\$18,041,386
118	Ridgefield	1	1.15	1.08	\$53,390,250	\$65,942,197	\$50,802,407
119	Rocky Hill	1	0.98	1.04	\$22,880,774	\$28,787,841	\$21,478,176
121	Salem	2	0.97	0.94	\$7,154,203	\$9,320,985	\$8,699,088
122	Salisbury	2	1.08	0.94	\$5,928,836	\$5,682,853	\$5,305,545
123	Scotland	2	0.95	0.88	\$3,270,973	\$3,062,037	\$2,859,293
124	Seymour	1	0.96	1.04	\$21,343,525	\$29,197,627	\$21,804,384
125	Sharon	2	1.08	0.92	\$4,379,318	\$4,112,101	\$3,839,550
126	Shelton	1	0.99	1.08	\$50,076,599	\$71,600,259	\$55,161,424
127	Sherman	2	1.05	1.02	\$5,797,898	\$7,287,322	\$6,802,368
128	Simsbury	1	1.02	1.04	\$46,671,233	\$63,696,974	\$49,072,669
129	Somers	1	0.96	0.98	\$14,465,635	\$18,889,724	\$14,063,604
131	Southington	1	0.97	1.04	\$62,457,841	\$84,737,987	\$65,282,837
132	South Windsor	1	0.98	1.05	\$44,370,847	\$66,770,272	\$51,440,363
133	Sprague	2	0.94	0.93	\$5,010,126	\$6,187,413	\$5,776,639
134	Stafford	1	0.94	0.98	\$17,868,938	\$23,883,237	\$17,758,341
135	Stamford	1	1.05	1.10	\$176,856,788	\$229,783,556	\$177,027,127
136	Sterling	2	0.94	0.91	\$5,113,379	\$7,435,932	\$6,941,575
137	Stonington	1	1.00	0.97	\$22,923,516	\$29,841,443	\$22,274,389
138	Stratford	1	0.97	1.09	\$67,946,140	\$106,742,744	\$82,235,481
139	Suffield	1	0.97	1.03	\$19,247,348	\$26,402,052	\$19,665,863
140	Thomaston	1	0.96	0.96	\$11,290,645	\$16,756,167	\$12,494,460
141	Thompson	1	0.94	0.95	\$11,948,966	\$17,180,446	\$12,806,368
142	Tolland	1	0.97	0.98	\$26,322,655	\$35,952,048	\$27,052,443
143	Torrington	1	0.95	0.98	\$44,537,360	\$71,804,965	\$55,319,131
144	Trumbull	1	1.02	1.08	\$63,206,636	\$78,734,697	\$60,657,853
145	Union	2	0.98	0.90	\$758,062	\$1,155,328	\$1,079,007
146	Vernon	1	0.95	0.99	\$39,769,272	\$52,595,052	\$40,061,482
147	Voluntown	2	0.95	0.93	\$4,142,041	\$5,478,502	\$5,114,885
148	Wallingford	1	0.97	1.05	\$65,127,409	\$93,722,517	\$72,204,592
151	Waterbury	1	0.93	1.07	\$184,266,268	\$285,516,707	\$217,654,856
152	Waterford	1	1.07	0.98	\$32,384,804	\$38,077,986	\$28,679,864
153	Watertown	1	0.97	0.97	\$27,756,611	\$44,117,869	\$33,391,112
154	Westbrook	1	1.02	1.05	\$9,746,568	\$11,824,153	\$8,830,760
155	West Hartford	1	0.99	1.06	\$94,003,950	\$135,755,830	\$104,587,400
156	West Haven	1	0.94	0.96	\$71,877,505	\$105,900,540	\$81,586,641
157	Weston	1	1.31	1.06	\$30,868,440	\$28,279,946	\$21,121,268
158	Westport	1	1.42	1.08	\$67,105,983	\$63,883,313	\$49,216,226
159	Wethersfield	1	0.97	1.04	\$34,348,147	\$48,507,277	\$36,829,817
160	Willington	2	0.96	0.96	\$9,442,536	\$9,460,634	\$8,828,902
161	Wilton	1	1.25	1.07	\$45,591,843	\$49,812,344	\$38,039,834
162	Winchester	1	0.95	0.96	\$16,452,126	\$20,714,862	\$15,430,154
163	Windham	1	0.93	0.97	\$39,489,151	\$54,106,427	\$40,976,552
164	Windsor	1	0.97	1.03	\$47,411,874	\$64,414,223	\$49,478,030

Dist. #	Name	Type	CRCLI		Comparable	PJ Adequacy	SSD Adequacy
			SQRT	GCEI			
165	Windsor Locks	1	0.98	1.05	\$20,265,333	\$25,236,484	\$18,762,612
166	Wolcott	1	0.96	1.05	\$24,897,593	\$39,524,432	\$29,804,037
167	Woodbridge	2	1.05	1.02	\$18,658,613	\$18,212,707	\$16,982,379
169	Woodstock	2	0.96	0.94	\$11,485,088	\$15,483,727	\$14,443,101
201	District No. 1	3	1.00	0.94	\$7,503,137	\$7,069,908	\$5,249,729
204	District No. 4	3	1.00	0.96	\$10,816,362	\$10,533,664	\$7,817,951
205	District No. 5	3	1.00	1.04	\$26,187,446	\$28,871,539	\$21,370,990
206	District No. 6	1	1.00	0.96	\$11,266,960	\$12,316,625	\$9,200,955
207	District No. 7	3	1.00	0.95	\$10,766,561	\$12,194,824	\$9,048,593
208	District No. 8	3	1.00	0.97	\$14,243,722	\$17,980,678	\$13,329,550
209	District No. 9	3	1.00	1.04	\$12,328,834	\$10,737,674	\$7,968,686
210	District No. 10	1	1.00	1.03	\$22,782,801	\$30,067,415	\$22,502,782
211	District No. 11	3	1.00	0.90	\$5,160,534	\$4,919,605	\$3,654,271
212	District No. 12	1	1.00	0.96	\$14,029,379	\$13,604,444	\$10,156,463
213	District No. 13	1	1.00	0.99	\$21,490,157	\$24,452,532	\$18,162,457
214	District No. 14	1	1.00	0.97	\$20,040,828	\$24,069,657	\$17,866,643
215	District No. 15	1	1.00	1.04	\$40,291,421	\$55,338,852	\$42,401,681
216	District No. 16	1	1.00	1.03	\$21,776,925	\$29,972,633	\$22,407,003
217	District No. 17	1	1.00	0.99	\$22,645,981	\$27,642,160	\$20,602,833
218	District No. 18	1	1.00	0.96	\$19,260,915	\$18,045,018	\$13,442,839
219	District No. 19	3	1.00	0.97	\$12,451,921	\$15,516,825	\$11,510,310

APPENDIX D

FORMULAS USED TO CALCULATE BASE COST LEVELS AND WEIGHTS FOR STUDENTS WITH SPECIAL NEEDS

1. Base cost formulas to determine the relationship between the base cost level and the type/size of school district based on Successful School District approach and Professional Judgment approach results.

**1A. Successful School District
(Starting, 2003-04)**

K-12 Districts

< 2,065	$\$6,838 + (.1261 \times (2,065 - \text{ENROLL}))$
2,065-4,970	$\$6,838 + (.4011 \times (\text{ENROLL} - 2,065))$
> 4,970	\$8,003

K-6/8 Districts

< 2,065	$\$8,575 + (.1261 \times (2,065 - \text{ENROLL}))$
2,065-4,970	$\$8,575 + (.5983 \times (\text{ENROLL} - 2,065))$
> 4,970	\$10,373

7/9-12 Districts

All	$\$7,023 - (.0438 \times \text{ENROLL})$
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**1B. Professional Judgment
(Target, without inflation from 2003-04)**

K-12 Districts

< 2,065	$\$9,199 + (.1261 \times (2,065 - \text{ENROLL}))$
2,065-4,970	$\$9,223 + (.4011 \times (\text{ENROLL} - 2,065))$
> 4,970	\$10,388

K-6/8 Districts

< 2,065	$\$9,199 + (.1261 \times (2,065 - \text{ENROLL}))$
2,065-4,970	$\$9,199 + (.5983 \times (\text{ENROLL} - 2,065))$
> 4,970	\$10,937

7/9-12 Districts

All	$\$9,449 - (.0438 \times \text{ENROLL})$
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Notes: ENROLL = school district resident student enrollment

Figures for any year after 2003-04 need to be adjusted by inflation from 2003-04.

APPENDIX D (Continued)

2. Student weights for: special education based on district level of special education need and size of district; at-risk students based on concentration; and for ELL students.

2A. Special Education

Mild

< 2,065	1.34
2,065-4,970	1.34 - (.000121 X (ENROLL - 2,065))
4,970-14,160	.99 + (.000013 X (ENROLL - 4,970))
> 14,160	1.12

Moderate

< 2,065	2.11
2,065-4,970	2.11 - (.0002169 X (ENROLL - 2,065))
4,970-14,160	1.54 - (.0000098 X (ENROLL - 4,970))
> 14,160	1.45

Severe

< 2,065	4.88
2,065-4,970	4.88 - (.000241 X (ENROLL - 2,065))
4,970-14,160	4.18 - (.0000936 X (ENROLL - 4,970))
> 14,160	3.32

2B. At-Risk

Concentration

< 10% concentration	.62
10-20% concentration	.62 - ((%AT-RISK - 10) X (.015))
20-40% concentration	.47 - ((%AT-RISK - 20) X (.0045))
> 40% concentration	.38 - ((%AT-RISK - 40) X (.002))

2C. ELL

All ELL students .76

Notes: ENROLL = school district resident student enrollment

%AT-RISK = percentage of at-risk students (eligible for free/reduced price lunch) where, for example, 30% = 30