



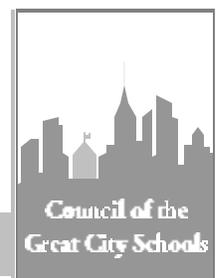
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Adequate Financing of Urban Schools

*An Analysis of Funding of the
Baltimore City Public Schools*

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Adequate Financing of Urban Schools

An Analysis of Funding of the Baltimore City Public Schools

I. INTRODUCTION

A. What Is the Purpose of This Report?

The purpose of this report is to provide policymakers with an indication of whether the Baltimore City Public School System (BCPSS) has sufficient resources to enable its students to attain the State's academic standards. This report poses six main questions:

1. How do the number and needs of students in the Baltimore City Public Schools compare with other major urban school districts across the country, with the City's suburban schools, and with other school districts in the State of Maryland?
2. How does student achievement in the Baltimore City Public Schools compare with State and national averages?
3. How does the spending of the Baltimore City Schools compare with other major cities, with State averages, and with national norms?
4. How do the resources available to educate students in Baltimore City compare with the City's suburbs and the others in the State?
5. Does Baltimore have enough money to meet its goals?
6. If not, how much money might be considered enough?

The Council of the Great City Schools has prepared this report for Metis Associates, which is under contract to the Baltimore City Public Schools. Metis is conducting a detailed study of the district's status on its master plan. And it is examining the City's programs and needs for meeting the academic standards set by the State of Maryland.

Metis subcontracted with the Council to help determine whether the Baltimore City Schools have adequate resources to meet State standards and, if not, how much might be considered sufficient. The Council was requested to conduct this analysis using the "adequacy" model that the organization developed and used in similar studies for the Philadelphia Public Schools and the New York City Public Schools. This model pegs financial resources to academic achievement. The Council hopes that the approach used here will help Maryland and Baltimore determine how best to educate students in the City to the highest academic standards.

B. Background.

The State of Maryland approved landmark legislation in 1997 that set the Baltimore City Public Schools on a new course of reform and improvement. Maryland joined a number of other states across the country at about the same time in attempting to improve the sagging fortunes of America's urban public schools.

The schools in the State's largest city, like those in other major urban communities, had been plagued, up to that point, with stagnant student performance, mismanagement, and overlapping legal entanglements. The 1997 Maryland legislation, however, reversed direction and established a new governance system for the Baltimore Public Schools, replaced senior management, and provided some \$254 million in additional aid for the City schools over a five-year period.

An interim CEO was retained to begin the reform process in 1997. The reforms began during the 1997-98 school year with the community-wide development of a Master Plan calling for substantially improved student performance and more effective management. The State Board of Education approved the plan in July 1998. And a permanent school leader was secured in 1998. The first full year of implementation of the Master Plan and systemwide reform was in 1998-99.

The Master Plan was composed of four overarching elements, each with a series of components:

A. Instructional Initiatives--

- Implement a new language arts and reading curriculum for grades k-5 with corresponding professional development.
- Implement after school academies.
- Implement summer learning academies.
- Reduce class sizes in grades k-5.
- Implement Zero-Tolerance discipline policies.
- Increase the role of the parent and community advisory board

B. Recruitment and Retention Initiatives—

- Implement teacher and principal recruitment strategies.
- Implement staff performance-based evaluation system.

C. Professional Development Initiatives—

- Implement teacher and principal mentoring and professional development strategies.
- Implement staff performance-based evaluation system.

D. Management Initiatives—

- Overhaul Management Information Systems.
- Adopt effective budgeting procedures.
- Reorganize central office.
- Develop and implement a comprehensive school facilities plan.

In April 1999, the Baltimore City Public Schools issued an RFP to conduct an interim evaluation of how well the district had followed the Master Plan. The RFP called for an assessment of whether the BCPSS Master Plan was sufficient in design and funding to enable the school district to achieve its reform goals and to enable City children to attain State performance standards. Specifically, BCPSS was interested in knowing whether:

- ❶ The BCPSS Master Plan was sufficient in design and funding to ensure that the reforms necessary to boost student achievement to State standards had been put into place.
- ❷ The BCPSS Master Plan was sufficient in design and funding to ensure that the reforms necessary to improve management effectiveness had been put into place.

- ③ The resources available to implement the BCPSS Master Plan were effectively prioritized and used to ensure that the reforms necessary to boost student achievement to State standards had been put into place.
- ④ The resources available to implement the BCPSS Master Plan were effectively prioritized and used to ensure that the reforms necessary to improve management had been put into place.
- ⑤ There were sufficient resources available (including those made available through the 1997 legislation) to achieve overall reform goals and objectives and to enable students to attain State performance standards.

This report is designed to address the last question, an important one because higher achievement standards are being implemented Statewide—and nationwide—with tougher consequences for failure. Before getting directly to the question, however, the report examines several of the key ingredients to how adequacy is determined: student needs, academic achievement, and resources.

II. COMPARING STUDENT NEEDS

The Baltimore City Public School System (BCPSS), like most other major city school districts across the nation, must compete against a variety of institutions in order to remain viable. Competitors often include suburban schools, private schools, independent charter schools, and increasingly, home schools. But often these institutions compete with vastly different resources and enroll significantly different kinds of students. The differences are particularly noticeable between cities and suburbs when they compete for critically scarce teachers, principals, and other staff. It is not surprising that schools with fewer needs and greater resources are the most competitive.

This section briefly compares and contrasts BCPSS on a number of fundamental characteristics that effect its ability to compete, to perform well, and ultimately to attain the standards that Maryland has set for the State’s schoolchildren. Educational research has consistently shown that poverty (and concentrations of it), family income and educational background, limited English language skills, and other factors can dampen systemwide achievement scores if extra efforts are not made to overcome them.

A. How Do Student Needs in Baltimore City Compare with Others Statewide?

Table 1 compares Baltimore City’s rates of poverty (as measured by free and reduced price lunch eligibility), limited English proficiency, special education, minority enrollment, and funding with those of other public school systems in Maryland. Baltimore City’s free and reduced price lunch eligibility rate of about 68.4% is more than twice the Statewide rate of 30.5% (counting Baltimore City) and 25.0% (without Baltimore City.) No other school system in the State, including Prince George’s County, has student poverty rates or numbers as high as those enrolled in the Baltimore City Public School System. The City enrolls some 28.4% of all free and reduced price lunch eligible students in the State, while enrolling some 12.7% of the State’s children. In other words, poverty is concentrated in the Baltimore City schools at about twice the rate of other school systems in the State.

Table 1. Comparison of Baltimore City with Others Statewide (1998-99)

	Free/Reduced Lunch Rate	LEP Rate	Disability Rate	Minority Rate	Per Pupil Expenditure
Maryland	30.5%	2.0%	12.3%	45.0%	\$7,261

Maryland w/o Baltimore	25.0%	2.2%	11.8%	38.7%	\$7,126
Baltimore City	68.4%	0.6%	15.4%	87.8%	\$7,576

Source: Author’s analysis of data from the Maryland State Department of Education (1999)

On the other hand, Baltimore enrolls relatively few English Language Learners, about 3.4% of the State’s total. Approximately 2.2% of the State’s enrollment (without Baltimore City) is composed of limited English proficient students, compared with about 0.6% of Baltimore’s enrollment. Even at 2.2%, however, Maryland’s rate of limited English proficiency is only about half of the national average of 5%. Only the Montgomery County Public Schools enroll English Language Learners at a rate (5.8%) similar to the national average, despite enrolling some 43.5% of all such students in the State.

In addition, the Baltimore City Public Schools enroll some 15.8% of the State’s special education students. About 15.4% of all students enrolled in the City’s public schools are listed as special education by the State, compared with 11.4% of all students in Maryland (without Baltimore.) The rates of students with disabilities in cities are often similar to or somewhat higher than those nationally or statewide. But urban schools tend to enroll students with more severe and costly disabilities, while suburbs often have greater percentages of students with lower-cost learning disabilities or attention deficit disorders.

Finally, the Baltimore City Public Schools spent about \$7,576 per student in 1998-99, compared with the estimated statewide average of \$7,261 per student. Expenditures per pupil ranged from a high of approximately \$8,679 in Kent County that year to about \$5,996 in Caroline County. The \$7,576 figure is an improvement for BCPSS since 1994-95 when it spent \$5,566 per pupil—or about \$540 less per child than the Statewide average. The additional aid for the Baltimore City Schools since the 1997 legislation has made a difference, as we will see in subsequent sections. The question for this report involves whether or not it is enough.

B. How Do Student Needs in Baltimore City Compare with Its Suburbs?

The Baltimore City schools differ still more from their suburbs than they do from other local educational agencies in the State. This set of comparisons is particularly important because the City must compete with its suburbs for teachers, for public confidence, for businesses and residences, and for an adequate share of statewide resources. The relatively small size of the State and the small number of school districts, however, mean that Baltimore is likely to compete against districts beyond its suburbs. Table 2 presents the comparisons.

Table 2. Comparison of Baltimore City with Its Suburbs (1998-99)

	Free/Reduced Lunch Rate	LEP Rate	Disability Rate	Minority Rate	Per Pupil Expenditure
Baltimore County	27.2%	1.4%	11.9%	34.6%	\$7,009
Baltimore City	68.4%	0.6%	15.4%	87.8%	\$7,576

Source: Author’s analysis of data from the Maryland State Department of Education (1999)

The Baltimore City Public Schools and the Baltimore County Public Schools are almost identical in the number of children they serve--106,540 and 105,914 students respectively. But the needs of students in the County's schools are more like student needs Statewide than they are like those in the City. The County Schools' poverty rate is 27.2%, compared with 25.0% Statewide (without Baltimore City) in contrast to the City rate of 68.4%. Limited English proficiency and disability rates show the same general patterns. Finally, the County schools spent an estimated \$7,009 per student in 1998-99, compared with \$7,576 in the City. This is also an improvement for the City since 1994-95 when the County spent \$6,191 per student and the City spent \$5,566 or \$625 less than the County.

C. How Do Student Needs in Baltimore City Compare with Other Major Cities?

The final set of comparisons involves other major cities across the nation. Table 3 compares Baltimore City's rates of poverty (as measured by free lunch eligibility only), limited English proficiency, special education, minority enrollment, and funding with those of other large urban public school systems elsewhere in the nation. The reader should note slight differences between the statistics presented in Table 3 and those shown in Tables 1 and 2. These differences are due to the use of incompatible data sources and years.

Table 3. Comparison of Baltimore City Schools with Other Major Cities (1997-98)

	Free Lunch Only Rate	LEP Rate	Disability Rate	Minority Rate	Targeting Index ¹
Atlanta	64.2	2.0	6.2	93.4	0.43
Baltimore City	63.7	0.3	17.6	87.2	0.56
Boston	73.1*	17.0	22.0	83.8	NA
Broward County	30.8	9.0	11.2	54.0	1.30
Buffalo	65.3	NA	18.4	67.9	0.90
Charlotte	30.8	2.0	10.7	49.0	0.97
Chicago	68.1*	16.0	11.5	89.7	0.51
Clark County	36.9	NA	10.3	43.7	NA
Cleveland	76.3	7.0	15.6	79.7	0.50
Columbus	50.4	1.0	12.8	58.8	0.43
Dallas	62.0	30.0	8.8	89.8	0.31
Denver	54.3	NA	10.9	74.7	0.31
Detroit	68.3	5.0	5.0	95.1	0.44
El Paso	60.0	33.0	9.3	82.5	0.82
Fort Worth	53.1	21.0	11.8	63.3	0.77
Fresno	70.3	34.0	11.9	77.7	0.82
Houston	60.9	28.0	10.4	89.3	0.40
Long Beach	64.6	37.0	7.9	80.6	0.74
Los Angeles	71.1	47.0	10.7	89.1	0.80
Louisville	40.2	1.0	12.7	36.4	0.79
Memphis	67.0*	1.0	11.0	85.4	NA
Miami-Dade County	52.9	58.0	10.2	86.9	0.84
Milwaukee	64.4	3.0	14.4	78.9	0.46
Minneapolis	59.0	15.0	12.9	67.7	0.43
Nashville	45.9*	3.0	13.1	48.0	NA
Newark	87.8*	9.0	7.0	91.1	0.76
New Orleans	74.4	NA	8.9	94.9	0.67
New York City	62.5	16.3	13.2	84.2	0.54
Oakland	66.3	32.0	9.5	93.9	0.83
Omaha	41.9	4.0	15.9	42.4	0.52
Philadelphia	82.9*	4.0	10.0	81.0	0.38
Portland	32.2	8.0	9.7	33.3	0.76
Sacramento	60.1	NA	11.6	73.7	0.84

Saint Louis	71.9	NA	14.3	82.2	0.65
Saint Paul	54.0	18.0	12.0	60.9	0.44
San Antonio	68.4	17.0	12.4	94.9	0.76
San Diego	59.2	28.0	9.3	71.4	0.63
San Francisco	62.1	32.0	10.9	87.5	0.50
Seattle	42.3*	7.0	10.0	59.4	NA
Tucson	55.2*	13.0	10.5	54.9	NA
Washington, D.C.	74.2*	11.0	10.0	96.0	1.00
Urban Average	63.0%	21.0%	11.4%	78.1%	0.62

Source: Author's analysis of data from the Common Core of Data (1999)

In 1997-98, about 63.0% of students in urban public school systems across the country were from families with incomes low enough to be eligible for a federal free lunch subsidy, similar to the rates in Baltimore City. Few major urban school systems in the country, in fact, had poverty levels that were at or below national averages.

Baltimore City does have substantially fewer English Language Learners than most other major city school systems, however. The enrollment of the average urban school system is about 21% students who are limited English proficient. The percentage of English Language Learners in big city schools nationally ranged from 58% in Miami-Dade County to less than one percent in several cities—including Baltimore.

Baltimore City had a somewhat higher proportion of students with disabilities than other major cities. The average urban public school system had an enrollment in 1997-98 of about 11.4% students with disabilities, ranging from about 22% in Boston to about 6.2% percent in Atlanta.

With a minority student enrollment of 87.2%, the racial composition of the Baltimore City Schools is also somewhat higher than most other major urban public school systems, which range from about 96% minority in Washington, D.C. to about 33.3% in Portland (OR). Only six major urban school systems of those listed in Table 3 are majority white (Charlotte, Clark County, Louisville, Nashville, Omaha, and Portland). On average, the Great City Schools enroll 78.1% African American, Hispanic, Asian American, and other students of color.

Table 3 also presents a “Targeting Index” for state funding of major city school districts across the country, using data from the 1995-96 school year. This index shows the degree to which each urban school district receives state funding commensurate with that city’s share of the state’s poor school children. An index of 1.00 indicates that the city school system garners the same share of the state’s total spending on K-12 public education as that city's share of all poor public school children in the state. The higher the index over 1.00, the more the school system receives relative to its poverty. The lower the index under 1.00, the less the school system receives relative to its poverty.² Only one of the major city school systems listed has a “Targeting Index” greater than 1.00, Broward County.

Baltimore City’s “Targeting Index” was .54, similar to those in New York City, Chicago, and Cleveland. In other words, the Baltimore City Public Schools received about 54% of the state funding in 1995-96 they would have acquired if the State distributed all of its K-12 education revenues on the basis of poverty alone.

Finally, Baltimore City is far more like other major cities across the nation in terms of the number of students served, about 106,000 students. The average large city school system enrolls approximately 120,000 students, compared to the average school system nationally, which serves about 3,000 students, and the average school system in Maryland, which enrolls about 35,070 students.

The relevance of this final set of comparisons rests in the uniqueness of most big city public school systems in the world of education. They are different, by definition, because of their location in cities with their singular concoction of prominent corporations, vigilant press, aggressive unions, and neighborhoods fractured by religion, language, race, income, and culture—all fighting with scarce resources over the one thing that people care the most about, their children. Few other kinds of school systems in the nation operate in quite the same stew.

These systems are also different because of the more serious needs that their students bring to the schoolhouse door. Longstanding research is clear that concentrated poverty dampens student achievement unless substantial steps are taken to overcome it. Typically, these steps have included the kinds of strategies that Baltimore City has incorporated into its Master Plan, e.g., before and after school programs, summer school, enriched curricula, professional development for teachers, higher academic standards, and smaller class sizes. These strategies must be different and more intense in cities because urban schools, moreso than other schools, must build “human capital” that has not been built by the family or other institutions.

Last, these systems are different because of their size, although there are a number of public school systems in Maryland—including Montgomery County, Baltimore County, and Prince George’s County—that are as large or larger than Baltimore City. District size and student needs converge in major cities to present management problems that many smaller districts in other settings do not have to contend with.

The distinctive quality of most major city school systems argue for their being reckoned with differently from other public school systems.

III. COMPARING STUDENT ACHIEVEMENT

This section examines how well students in the Baltimore City Public Schools are doing in their academic studies compared with students elsewhere in the State. It also looks at trends in academic performance. Three indicators are used: (1) results on the 1999 statewide Maryland School Performance Assessments (MSPAP); (2) results on the Scholastic Assessment Tests (SAT) taken by students seeking college admission; and (3) results on ACT examinations, also used for college admissions. The analysis does not use Statewide scores on the CTBS/5, which is given to grades 2, 4, and 6, or Maryland Functional Tests, which are administered in grades 9 and 11.

The comparisons and trend lines on MSPAP are important for determining not only the academic standing and needs of students in Baltimore City but also for establishing any possible impact that the Master Plan and the State's additional investments have had. Finally, these data are critical for ascertaining whether the investments made in the City Schools are sufficient to close the remaining achievement gaps between the City and the State's standards.

A. How Do Baltimore City Students Perform on Statewide Reading Tests?

Maryland is fortunate to have developed some of the most sophisticated student assessment systems in the nation and to have had them long enough to determine trends confidently from year to year and district to district. The Maryland School Performance Assessment Program measures academic attainment in reading, writing, language usage, mathematics, science, and social studies for students throughout the State in Grades 3, 5, and 8.

The graphs on the following pages present trends since 1994 in reading and math scores on MSPAP for Baltimore City and the State. The first graph, Figure 1, shows MSPAP reading scores for grades 3, 5, and 8. The most obvious finding is that reading scores among Baltimore City students is well below Statewide averages. This is not new, as the City's academic achievement has ranked as the lowest in Maryland for some time. Closer examination, however, shows that 3rd grade reading scores have improved Statewide by about 34.6% since 1994 and have increased in Baltimore City by about 69.6% over the same period. Fifth grade scores showed the same trends: the proportion of students scoring at the satisfactory level Statewide increased by about 37.1% since 1994, while the proportion of students in Baltimore City increased by about 57.0%. Eighth grade reading gains were 5.4% and 31.5% respectively.

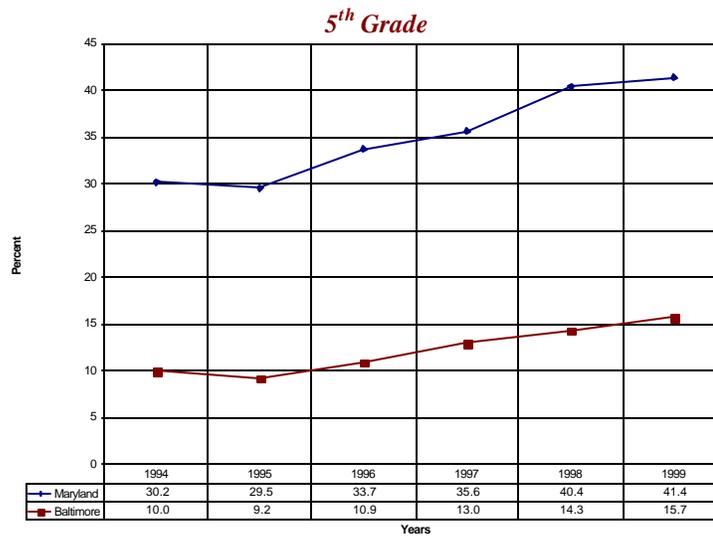
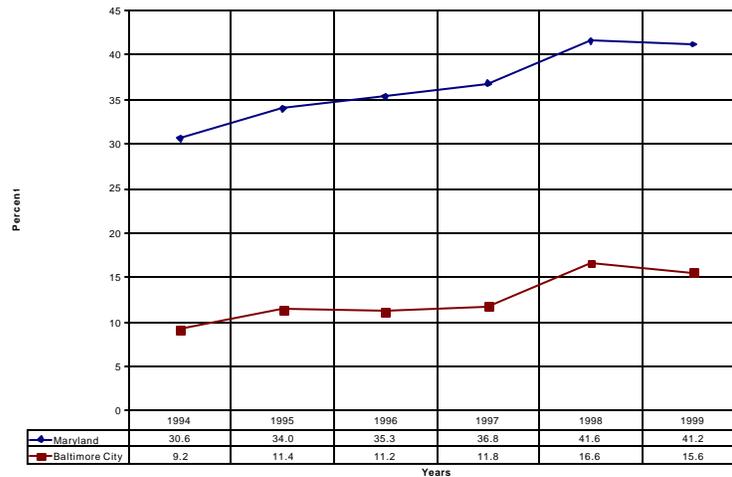
Two features of these trends are worth noting. The first is that Baltimore City is closing its reading achievement gap with the State. In 1994, the State had 3.3 times the percentage of 3rd grade students scoring at the satisfactory level as Baltimore City; in 1999, the State had 2.6 times the percentage. In 1994, the State had 3.0 times the percentage of 5th grade students scoring at the satisfactory level as Baltimore City; in 1999, the State had 2.6 times the percentage. In 1994, the State had 4.4 times the percentage of 8th grade students scoring at the satisfactory level as Baltimore City; in 1999, the State had 3.6 times the percentage. Student reading achievement is clearly improving in Maryland and in Baltimore City, but the gains are somewhat faster in the City, as they need to be.

The second key feature is that the rate of reading improvement in Baltimore City was faster between 1997 and 1999 than between 1994 and 1996, except in 8th grade. By contrast, the rate of improvement Statewide appeared to be faster between 1994 and 1996 than between 1997 and 1999, except in 5th grade. The time periods are important because it was in 1997 that the State passed legislation beginning the reform process in Baltimore and infusing the district with somewhat more financial aid.

B. How Do Baltimore City Students Perform on Statewide Math Tests?

Figure 2 shows trends in MSPAP math scores for Maryland and Baltimore City. The results, once again, show that Baltimore City school students scored substantially below Statewide averages. The City has improved its math scores, however, since 1994, except among 3rd grade students whose scores have fluctuated from year to year. The proportion of Baltimore 5th graders scoring satisfactorily has improved by 21.8% since 1994, while the proportion of students in the same grade Statewide has improved by 9.7%. The proportion of Baltimore 8th graders at the satisfactory level increased by 36.2%, compared with a Statewide gain of 21.6%.

Figure 1. Trends in Reading Scores for Grades 3, 5 and 8 in Baltimore City and Statewide
3rd Grade



8th Grade

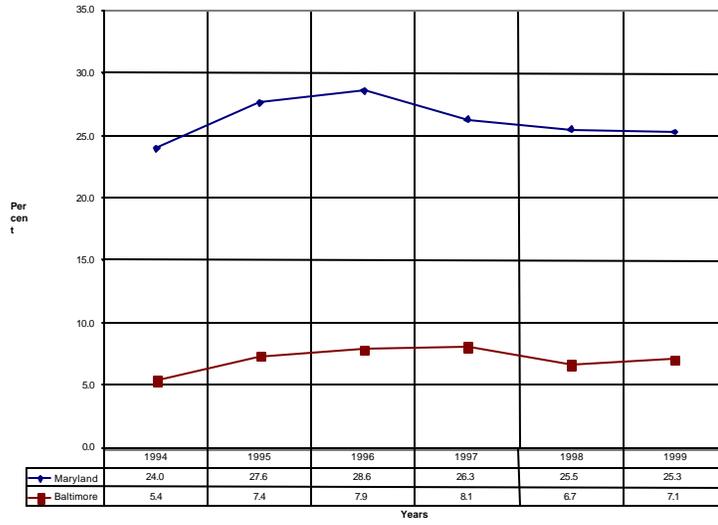
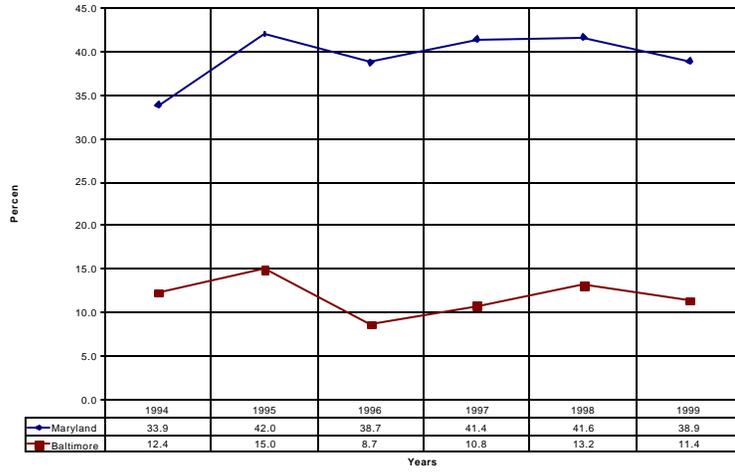
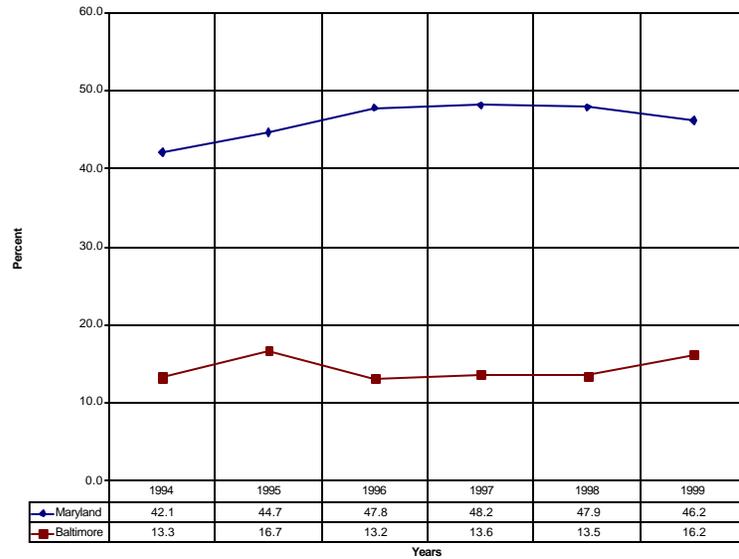


Figure 2. Trends in Math Scores for Grades 3, 5 and 8 in Baltimore City and Statewide

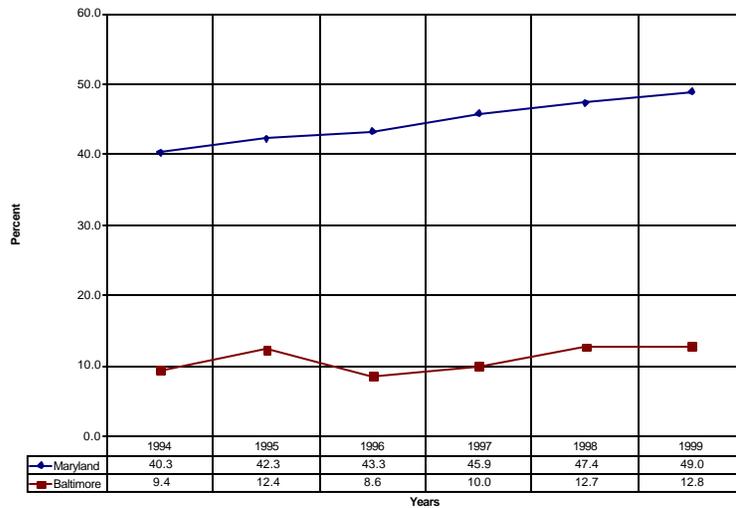
3rd Grade



5th Grade



8th Grade



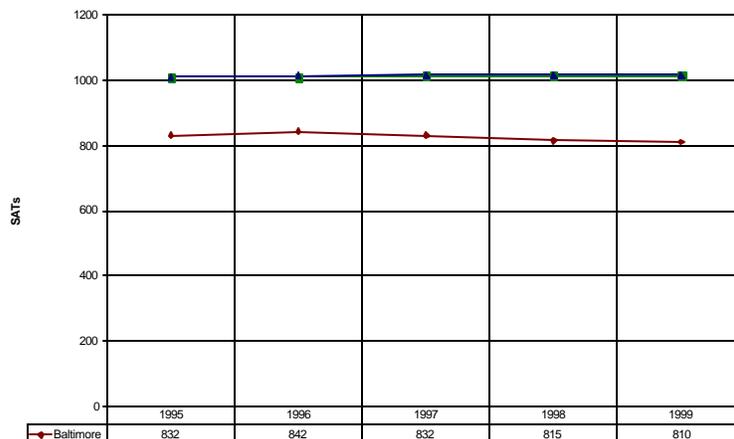
As with reading scores, math scores showed faster gains in Baltimore City than Statewide, although the City's improvements were not as dramatic in math as in reading. In addition, math improvements were faster between 1997 and 1999, after the implementation of reforms and the additional financial aid, than between 1994 and 1996. Math scores, in fact, declined between 1994 and 1996 in all three grades (3, 5, and 8) tested, but increased in all three grades between 1997 and 1999. Conversely, the percentage of students Statewide scoring at the satisfactory level in math increased between 1994 and 1996 in all three grades tested, but declined between 1997 and 1999 in grades 3 and 5. (Statewide math scores improved markedly between 1997 and 1999 in grade 8.)

C. How Do Baltimore City Students Perform on the SATs and ACTs?

The SAT or Scholastic Assessment Tests administered by the College Board are the most widely given examinations nationally for students aspiring to attend college. They are also the most widely administered college entrance examinations in Baltimore City and Maryland. The ACT exams are also given throughout Baltimore and the State to students seeking college admission but the tests are administered to substantially fewer students than the SAT. Neither examination is ideal for assessing systemwide performance since both tests are taken only by college-bound students, but the results may be helpful in determining whether academic improvements in the lower grades have spread yet to the upper ones.

Figure 3 shows trends in SAT scores for Baltimore City, the State of Maryland, and the nation since 1995. In general, Maryland's verbal and math total scores on the SAT mirror those nationally, rising slightly from 1009 Statewide in 1995 to 1014 in 1999. (National totals rose from 1010 to 1016 over the same period.) Scores for Baltimore City, however, have not shown the same gains. City scores dipped from 832 in 1995 to 810 in 1999. The number of City students who took the SAT, however, increased substantially from 1,730 in 1995 to 1,992 in 1999 (+15.1%).

Figure 3. SAT Total Scores for Baltimore City, Maryland, and the Nation



ACT tests are nationally standardized college entrance examinations, like the SATs. Colleges and universities throughout the country use the results to make applicant selections and to predict academic success in college. In general, the ACT is generally thought to be more sensitive to changes in school curricula than is the SAT, but it is administered far less frequently in Baltimore.

Unfortunately, no trend data on City ACT results are available, but 1998 scores do exist. (Data should be used with caution because only 180 students in Baltimore took the ACT in 1998.) Results indicate that the average ACT score for students in Baltimore City was 17.4 in 1998, compared with an average composite score of 21.0 nationally and 18.8 in the major cities. (Composite scores are a combination of scores in English, mathematics, reading and science reasoning.)

Data also indicate that the percentage of ACT test-takers in Baltimore City scoring below 16 (i.e., the point at which most competitive colleges and universities will not accept a student) was high. Some 44% of all ACT test takers in Baltimore City in 1998 had English scores below 16, as did 21% in Maryland and 19% nationally. Approximately 34% of ACT test takers in Baltimore had math scores below 16, as did 14% in the State and the nation. In other words, about three or four of 10 ACT test takers in Baltimore City had scores too low to permit their entrance into college, even though they aspired to attend.

The data in this section lead to a number of conclusions. First, student achievement in the Baltimore City schools is improving (at least in grades 3, 5, and 8) and improving at a somewhat faster pace than the Statewide average. In other words, the City is slowly closing its achievement gap with the State. Two, the rate of improvement in most grades has been faster since the 1997 legislation and additional aid than before. This suggests that the City and the State are generally on the right track. Third, the reforms have not yet been in place long enough or with enough depth to have had an impact on college admission test results.

Finally, the results suggest that it may take nearly twenty years—at the current pace—to close the remaining achievement gaps between Baltimore City and the rest of Maryland, much less to meet the academic standards that the State has set for everyone. One suspects that the pace of improvement will need to be accelerated, which means that the pace of reform and funding will have to be quickened.

IV. COMPARING EXPENDITURES

The spending patterns of many public school systems are of intense interest. The Baltimore City Public Schools are no different. The school system has been a symbol of inefficiency among critics for years. But this dubious distinction begs the question, is the public perception accurate? Does the Baltimore City Public School system spend its money any differently from other school systems? Does the way the school system spends its money explain how well students achieve? This section is meant to answer some of those questions and to ascertain whether the State's investment is going to places that it does not want.

Unfortunately, comparable data on school district spending is hard to find. The Council used budget categories developed by the Educational Research Service (ERS) for this analysis because no other source was available. They permit comparisons with other urban school systems across the country and with a national sample conducted by ERS on 28 spending categories.

Table 4 shows 1998-99 spending by category.³ It presents both current and noncurrent expenditures, including debt service and capital expenditures. (Current expenditures are those associated with student services; noncurrent expenditures are those not directly associated with student services.)

The spending patterns in Table 4 generally show that educational expenditures in Baltimore City are similar both to other major urban public school systems across the country and to national averages. Total unadjusted per pupil expenditures (current and noncurrent) for the Baltimore City Public Schools equaled \$7,799 in 1998-99, compared with \$7,197 for the average large city school system. The national average was \$7,727.

A number of patterns in Table 4 are worth noting. First, Baltimore City devoted a larger share of its total funding (\$7,727 or 99.1%) to total current expenditures (i.e., expenditures directly allocable to student activities) than did either the average large city school system (\$6,211.94 or 86.3%) or the national sample (\$6,821.07 or 88.3%). In addition, Baltimore City spent more of its total current expenditures for instructional purposes (74.1%) than did the average major city (69.0%) or the average school system nationally (69.1%). Baltimore City devoted a higher proportion of its current expenditures to special education services than other urban school systems or national averages. It is difficult, however, to separate precisely the portions of instructional dollars devoted to special education from general education and there may be some blending of dollars in other reporting school districts. In addition, the Baltimore City Public Schools devoted a smaller portion of its current expenditures to total student services (4.9%) compared with other school systems, urban (6.8%) or national (7.8%). Finally, the percentage of funds in Baltimore City devoted to central office functions (i.e., school board, executive administration, and central and business services) comprised a lower share of total funding in Baltimore than in other types of school districts.

Table 4. Comparison of Baltimore City's Per Pupil Spending (1998-99)

Budget Category	Baltimore City Average	Percent	Urban Average	Percent	National Average	Percent
Total Current Expenditures	\$7,727.00	100.0%	\$6,211.94	100.0%	\$6,821.07	100.0%
Instructional Expenditures						
• Classroom Instruction	\$3,119.68	40.4%	2,918.59	47.0%	3,332.13	48.9%
• Books & Materials	239.04	3.1	194.26	3.1	187.99	2.8
• Auxiliary Instructional Services	130.49	1.7	243.25	3.9	288.86	4.2
• Curriculum & Staff Development	251.81	3.3	150.31	2.4	126.28	1.9
• Special Education	1,691.72	21.9	724.99	11.7	698.73	10.2
• Other Instructional Expenditures	286.31	3.7	54.57	0.9	75.79	1.1
Subtotal	\$5,719.05	74.1%	\$4,285.97	69.0%	\$4,709.78	69.1%
Student Services						
• Health & Attendance	105.78	1.4	119.15	1.9	124.01	1.8
• Transportation	263.44	3.4	262.00	4.2	302.75	4.4
• Food Services (net costs)	5.20	0.1	0.65	0.0	18.67	0.3
• Student Activities (net costs)	0.00	0	22.89	0.4	71.95	1.1
• Other Student Services	0.00	0	16.80	0.3	12.85	0.2
Subtotal	\$374.42	4.9%	\$421.49	6.8%	\$530.23	7.8%
School-Site Leadership						
	\$343.18	4.4%	\$358.00	5.8%	\$358.42	5.3%
Centralized & Community Leadership						
• Board of Education	\$0.97	0	18.97	0.3	39.27	0.6
• Executive Administration	91.98	1.2	72.14	1.2	105.96	1.6
• Central & Business Services	132.71	1.7	234.66	3.8	193.37	2.8
Subtotal	\$225.66	2.9%	\$325.77	5.2%	338.60	5.0%
Operations & Other Current Expend.						
• Maintenance & Operations	695.56	9.0	525.61	8.5	532.21	7.8
• Environmental Conditioning	154.69	2.0	131.63	2.1	152.62	2.2
• Other Current Expenditures	216.31	2.8	163.47	2.6	199.21	2.9
Subtotal	\$1,066.56	13.8%	\$820.71	13.2%	\$884.04	12.9%

NonCurrent Expenditures					
• Capital Outlay	0.00	0	661.37		482.35
• Debt Retirement	25.45		184.21		241.13
• Interest on Debt	46.92		139.27		182.12
Subtotal	\$72.37		\$984.85		\$905.60
Total Current & NonCurrent Expenditure	\$7,799.37		\$7,196.79		\$7,726.67

Source: Author’s analysis of data from the Educational Research Service (1999) and Baltimore City Board of Education

The data presented in this section indicate that the Baltimore City Public Schools spend their resources in strikingly similar ways to the average school system nationwide. This spending pattern also mirrors how the average city school system allocates its resources. Unfortunately, similar data on school districts in Maryland were not readily available to compare Baltimore with State averages.

There may be a serious debate nationwide about how public school systems, in general, spend their resources, but there is nothing in the data presented in this section to suggest that the Baltimore City should be singled out for special criticism. If anything, the data suggest that the City has devoted a greater share of its resources to instruction than most public school systems. Finally, there is nothing in these data to suggest that the achievement scores of students in Baltimore are negatively effected by the pattern in which the school district allocates its funds, except for the unusually high portion devoted to special education.

V. ADEQUACY

The central questions posed by this report are whether the Baltimore City Public Schools are adequately funded and, if not, what level of funding would be considered adequate. There are not many school finance models available, however, to answer these kinds of question. Instead, most existing statistical models are devoted to estimating funding equity and do not attempt to calculate how much funding would be necessary for children to achieve at some specified level or standard.

There are three basic models for attempting to answer questions about how much is enough. The first approach is a “judgment” approach, and is sometimes referred to as a “market-basket” or “opportunity to learn” analysis. It uses panels of experts to estimate the costs of what an adequate education might look like, and is the most commonly used type of adequacy analysis. It is often conducted by counting the cost of items needed to teach each child under ideal circumstances. Such inventories include the costs of professional development, books, facilities, materials, technology, teachers, and the like.

The second approach uses the emerging research models like the Comer schools or “Success for All” and attempts to estimate the resource needs of school districts if all schools implemented such models. A third approach attempts to assess needed funding on the basis of typical high-performing districts in a state or region. Variations in this approach often rely on sophisticated statistical analyses to correlate acceptable levels of pupil performance with the dollars needed to meet a set of targets.

The Council of the Great City Schools prefers the third approach because it benchmarks resources against academic goals, and avoids the problem of estimating inputs without specified outcomes. The Council has developed a statistical model that uses a “standards-based” or “output” orientation rather than an inventory of inputs. In brief, the model measures financial adequacy based on the resources available to the highest performing—not the highest spending—school districts in the State after adjusting for the needs of the students.

The Council does not use a market-basket approach because there is often little agreement on either the menu of items needed for an adequate education or their costs, and there is no mechanism beyond the judgment of experts to tie the inputs to specified outcomes. But, a market-basket approach could be used in combination with the one we use as a way of determining how additional revenues might best be spent.

The model used in this analysis is appealing because it is simple and is grounded on academic performance, not poverty or wealth. It is a more intuitive approach to answering the question, “What resources does it require for the highest performing school districts to get the results that they do?” And it uses commonly accepted adjustments for the higher costs of educating children who are poor, limited English proficient, or disabled.

The definition of "adequacy" used here is straightforward: the amount of funding provided to students and schools in the highest performing public school systems in the State. And the model for calculating adequacy uses two overarching variables: the needs of the children and the resources of the highest achieving school systems in Maryland.

A. What Is the Cost of Meeting High Needs?

The first step in determining adequacy using this model involves calculating the “virtual enrollment” of a school system based on its number of children with special needs. This report uses a series of weights described by Alexander (1991) and implied by the U.S. General Accounting Office (GAO, 1998) to estimate student needs: regular student (1.0), poor student (1.2), and student with physical or mental disability (2.3). One additional weight is also used: limited English proficient student (1.1). Counts of students from each category were multiplied by these weights and then summed to arrive at a “virtual enrollment” for each school district in the State. The actual enrollment of Baltimore City would change, for example, from 106,540 students to an adjusted or “virtual” enrollment of 142,451 (+33.7%). The enrollments of other school systems in the State could be adjusted upwards in the same fashion. No one would be adjusted downward.

B. What Is the Cost of High Student Achievement?

The second part of the model establishes a basic foundation of funding for all LEAs. It is based on the total per pupil expenditures of the highest achieving school systems in Maryland. The assumption behind this approach is that each LEA in the State ought to have the same basic resources as the highest achieving school systems if high achievement is indeed the goal of the State.

The first step in calculating the foundation involved ranking all local educational agencies in the State by their achievement scores. This report uses the percent of 3rd grade students scoring at either the satisfactory or excellent level on the most recently published Maryland School Performance Assessment Program (MSPAP) exams in reading. High achievement is defined in this report as the top 33% of LEAs in the State using this ranking. The number also corresponds with the districts in Maryland where roughly half or more of the tested 3rd graders were satisfactory or excellent in reading on the MSPAP. Some eight districts in the state met this definition (see Table 5.)

Table 5. Highest Achieving School Districts in Maryland

HIGHEST ACHIEVING COUNTIES	PERCENT OF STUDENTS AT EXCELLENT OR SATISFACTORY	APPE ¹
• Kent County	86.6%	\$8,679
• Howard County	73.3	\$7,788
• Queen Anne’s County	64.4	\$7,079

¹ Average per pupil expenditures based on preliminary estimates for 1998-99 prepared by the Maryland State Department of Education, January 2000.

• Harford County	61.5	\$6,711
• Frederick County	60.8	\$6,731
• Carroll County	58.4	\$6,832
• Washington County	58.4	\$6,443
• Montgomery County	48.9	\$8,595

The average per pupil expenditure (weighted by actual district enrollment) of these high performing school districts is then calculated as step two. The result for the 33% highest performing LEAs in the state was a per pupil expenditure of \$7,684 (compared to the statewide average of \$7,261). Thus, the foundation for this analysis becomes \$7,684 per child.

Step three in the model required multiplying the new foundation amount (\$7,684) by the readjusted or “virtual” student enrollment of the City and dividing the product by the actual enrollment.⁴ Table 6 shows the effect of the model on Baltimore City.

Table 6. Estimated Cost of High Achievement in Baltimore City

	Enrollment	Weighted Enrollment	Actual Per Pupil Expenditure	Adequate Per Pupil Expenditure	Effect of Model
Baltimore City	106,540	142,451	\$7,576	\$10,274	+\$2,698

Results of the analysis suggest that the Baltimore City Public Schools would need \$10,274 per pupil to have resources equivalent to the highest achieving school districts in Maryland—after adjusting for needs.

C. How Should Adequate Resources Be Used?

Because this model does not use a market-basket approach, it is unable to specify exactly how the full amount should be spent. A reasonable starting point would be the spending patterns of the highest achieving school systems in the State, except that we have seen that Baltimore City devotes about the same proportion of its total expenditures to instruction as other school districts. And there is no comparable analysis of the spending patterns of the highest achieving school districts in Maryland to guide any recommendations. Analyses in other states suggest, however, that the highest achieving school districts do not spend their resources in appreciably different ways than other school systems.

The only other guide to how funds might be spent is the research, which suggests that additional monies in Baltimore City might be used to best effect for:

- Hiring additional teachers to reduce class size well below statewide averages to help teachers handle the effects of poverty.
- Raising average teacher salaries to allow the city to compete more successfully for new teachers to reduce class size—in exchange for stiffer accountability for performance (see next section).
- Expanding mandatory summer school or extended-day programs for students who do not meet academic standards in the requisite time.
- Providing full-service pre-school programs throughout the city to mitigate the effects of poverty on brain development and early learning.

- Providing extensive professional development to teachers and staff on implementing high-standards curriculum, assessments, classroom management, technology, and other areas.
- Purchasing instructional technology and computers for every classroom in the city's schools and providing teachers with professional development in their use.
- Establishing additional small schools or house schools to provide more individualized student attention.
- Developing stronger grade-by-grade standards, curriculum, and assessments.

D. How Would Accountability for Results Be Determined?

The public would have a right to know what they could expect for the money; when results could be anticipated, and what sanctions would be levied if the expected results were not forthcoming. The adequacy model presented in this section requires additional work on this point, but its focus on high achievement and results, and on the resources needed to produce them, offers a way of thinking about accountability. It is reasonable for both the state and the taxpaying public to know how fast and to what extent improvements could be expected with any increase in investment.

The model suggests it would take several years of adequate funding before student performance in all grades would approach the achievement levels of the State's highest performing school districts. One year's adequate funding for next year's 12th graders, for instance, could not be expected to produce achievement levels comparable to those of 12th graders in high performing districts. On the other hand, 12 years of adequate investment in next Fall's incoming 1st graders could. All other considerations aside, one would expect that Baltimore City School students would need 12 to 13 years of adequate funding before achievement gaps with high performing districts in all grades would close.

This staggered effect suggests that new investments could be phased in, since it is unlikely that the City could handle this amount all at once. One way of doing this would be to phase in funding by grade level, with the lower grades receiving the highest proportions of new monies. This approach would allow the state to stage its increases gradually and to spread the effects of the increasing amounts over time. Staggered increases might also allow the development and measurement of new systems to assess progress and to hold the system accountable for expected improvements in performance. And it might allow a more thoughtful and effective phase-in of such efforts as class-size reductions, additional preschool efforts, summer schools, and extended day and year instruction that have strong research demonstrating their effectiveness.

Accountability for results from managers and teachers alike could be designed based on this model as resources became available grade-by-grade. Statistical and political expectations for results could be determined based on the speed or nature of the phase-in.

VI. SUMMARY AND CONCLUSIONS

This analysis has examined the needs of students in the Baltimore City Public Schools compared with others across the State of Maryland. Results showed that children in the City brought more critical and expensive needs with them to school than any other community in the State. In fact, need was over twice as concentrated in Baltimore City than anywhere else in the State.

Second, this analysis examined academic achievement of students in Baltimore City and trends in that achievement. The data showed what everyone knows: student achievement in Baltimore City is low. Test scores also showed, however, that achievement was improving faster in Baltimore City in most grades than in the State as a whole. Reading gains appeared to be somewhat stronger than math gains. And the analysis showed that the academic gains had come faster after the 1997 reforms than before.

Third the analysis examined expenditures by the Baltimore City Public School System. The results showed that the Baltimore schools spend their resources in about the same way that other school systems spend theirs. There were no data available to the Council that would have permitted a comparison with other systems specifically in Maryland. Nor were data available on how Baltimore's expenditures have changed over the last several years. But, the analysis by Metis Associates indicates that the district is indeed spending its resources on the programs specified in the Master Plan and on efforts supported by the research as boosting student achievement. There is no evidence from these data to suggest that the Baltimore schools are wasting large portions of their funds or are spending their resources ineffectively.

Finally, the report combined these three critical ingredients (needs, achievement, and spending) to see if the resources available to the Baltimore City Schools were adequate to meet the academic goals that the State has set. The answer to this question of whether the district's resources are adequate to meet the State's standards is no, if judged against what is available to the school districts elsewhere in the State who have the highest achievement and are the closest to meeting those standards, once student needs are taken into account.

It is the conclusion, then, of this report that Baltimore cannot meet or even come close to meeting the State's standards with its current resources. Nor can it accelerate its academic gains much more without substantial new investments in the children attending the Baltimore City Public Schools.

Endnotes

¹ Targeting Index is based on 1995-96 data from the *Digest of Education Statistics (1999)* and from data runs prepared by the National Education Data Resource Center.

² The index is calculated by dividing the city's share of the state's total K-12 education expenditures by the city's share of the state's total K-12 enrollment eligible for a free federal school lunch.

³ *Current Expenditures*: expenditures for all current funds (e.g., operating, special education, federal projects, transportation, etc.) but excluding funds that are intended to be self-supporting such as food service.

Classroom Instruction: expenditures that include K-12 teachers, paraprofessionals, and clerical personnel working with teachers in the classroom.

Books and Materials: expenditures that include textbooks, library books, audiovisuals, and instructional materials.

Auxiliary Instructional Services: expenditures that include counselors, librarians, and other support staff, and testing services.

Improvement and Development: expenditures that include curriculum development, instructional supervision, inservice, and professional development of staff.

Special Education: expenditures that include teachers, paraprofessional and clerical personnel providing services to handicapped students, including services contracted to outside agencies or private schools to which the district sends special education students.

Other Instructional Expenditures: expenditures that include services (excluding those for special education) contracted to outside agencies such as regional service agencies.

School Site Leadership: expenditures that include offices of principals and assistant principals.

Health and Attendance: expenditures that include physical and mental health staff and services such as nurses, psychologists, social workers, related paraprofessional and clerical staff, and materials.

Transportation: expenditures that include staff, maintenance and operation of equipment, fuel, and contracts for transporting public school students even if a separate transportation fund is maintained; and that exclude expenditures related to the transportation of nonpublic school pupils.

Food Services: expenditures that include the net cost to the district of operating food services programs (which may be \$0 if self-supporting); and that exclude expenditures offset by income from cash sales and state and/or federal subsidies.

Student Activities: expenditures that include the net cost to the district (may be \$0 if self-supporting); and that exclude expenditures offset by gate receipts, activity fees, etc.

Other Student Service Expenditures: expenditures that include other student services (only net cost to the district).

Board of Education: expenditures that include school board members' salaries and expenses, election services, legal services, census, tax assessment/collection services, and similar Board services.

Executive Administration: expenditures that include offices of the superintendent, deputy, assistant, and area superintendents, including employee relations and negotiation services, state and federal relations services, and related services not listed elsewhere; but that exclude services for planning, research and evaluation, maintenance and operations, instruction, staff personnel, pupil personnel, statistics, data processing, business and school site leadership.

Central and Business Services: expenditures that include fiscal services (e.g., payroll, budgeting, accounting, internal auditing, etc.); facilities acquisition and construction services; central office support services (e.g., staff personnel, public information, planning, research, evaluation, statistics, data processing); and similar services not included elsewhere.

Maintenance and Operations: expenditures that include staff, equipment, and supplies for the care, upkeep, and operation of buildings, grounds, security, and other services; but that exclude expenditures for major equipment purchased from a special capital purchases fund, utilities, heating/cooling fuel.

Environmental Conditioning: expenditures that include fuel for heating and cooling plus all utilities except telephone.

Other Current Expenditures: expenditures that include all other current expenditures not reported elsewhere (e.g., telephone charges, fire insurance, professional liability insurance, short-term interest); but that exclude expenditures for community services, recreation services, and junior colleges.

Capital Outlay: expenditures that include any special capital outlay accounts for new and replacement buildings, vehicles, and other major equipment items; but exclude expenditures for capital outlay purchases otherwise reported.

Debt Retirement: expenditures that include payment on principle and payments to school housing authorities.

Interest Paid on Debt: expenditures that include payments on interest on long-term debts only.

$$^4 \{ADM - [a + b + c + d] + \{(a)(w1) + (b)(w2) + (c)(w3)\} \times \frac{\sum x(1)x(i)}{i} = f$$

where:

ADM=Average Daily Membership of the Baltimore City Schools
a=Number of Free and Reduced Price Lunch Children in the Baltimore City Schools
b=Number of Limited English Proficient Children in the Baltimore City Schools
c=Number of Special Education Children in the Baltimore City Schools
w1=Weight for the Number of Free and Reduced Price Children
w2=Weight for the Number of Limited English Proficient Children in the Baltimore City Schools
w3=Weight for the Number of Special Education Children in the Baltimore City Schools
x1xi=Average Per Pupil Expenditure of the Highest Achieving School Districts in Maryland where (i) is the number of such districts
f=adequacy