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Towards an Informed Discussion on How Best to Organize School Districts in Berkshire County

A Resource Document Highlighting Key Lessons from the Research Literature and Selected Data Sources

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Contents

Executive Summary

The population and number of school-aged children living in Berkshire County has declined significantly over the past three decades. During the same period of time, the economy of the Berkshire region has been transformed from one primarily dependent upon manufacturing to a more service based economy where, for many workers, postsecondary education is increasingly a prerequisite for economic prosperity.

Recognizing the growing importance of higher education to the life prospects of the region's youth and to the workforce needs of the region's employers, regional leaders recently formed the Berkshire Compact for Higher Education (the Compact). The Compact is currently undertaking a critical review of the extent to which the region is effectively and efficiently meeting the needs of its residents. In an effort to inform the Compact's deliberations, the Compact commissioned the University of Massachusetts Donahue Institute (the Institute) to prepare a report that reviewed the academic and applied research literature on K-12 district consolidation and related issues and analyzed relevant school enrollment, school finance, and student outcomes data for school districts in Berkshire County.

Summary of Main Findings

The main findings from the Institute's extensive literature review are as follows:

Historical Context

Historically, in regions across the United States, a common solution to declining enrollments and limited local resources, as is currently the case in Berkshire County, has been consolidation, both by reducing the number of school districts and by combining small schools into larger ones. The two steps have almost always been taken at the same time.

Early reformers initiated the consolidation movement in the early 1900s under the premise that consolidation would lower costs, increase administrative expertise, and ensure student access to qualified teachers, specialized programs, and adequate facilities. State governments took an active role in consolidation.

While the pace of consolidation has slowed since the early 1970s, some states still push consolidation by providing incentives or using negative pressures.

- New York and at least seven other states use separate aid packages designed to push school district consolidation.
- Other states set a minimum size and legislate out of existence any school or district that falls under the limit.[1]

[1] Matthew Andrews, William Duncombe, and John Yinger, "Revisiting Economies of Size in American Education: Are We Any Closer to a Consensus?" *Economics of Education Review* 21 (2002), p. 245. See also The Rural School and Community Trust, "Anything but Research-based: State Initiatives to Consolidate Schools and Districts," http://www.ruraledu.org/site/apps/nl/content3.asp?c=beJMIZOCIrH&b=1000115&ct=3715207

Does the research literature suggest district consolidation improves student achievement?

Few studies have focused on student performance consequences of consolidation itself. Rather, studies have focused on the impact of school and district size on student outcomes. This research does not provide a direct test of the impact of consolidation.

Findings on the educational consequences of school size are fairly consistent.

- Studies show small schools to be at least equal in educational benefits.
- Research suggests that the benefits of small schools are the greatest for disadvantaged students.

Unfortunately, the empirical literature on the consequences of district size on student outcomes is smaller and less consistent in its findings than the school size literature.[2]

Does the research literature suggest district consolidation saves money?

Arguments for consolidation based on economic efficiency suggest the need for fewer teachers and administrative personnel, and reductions in expenditures for capital improvements and basic maintenance. A closer look at the research literature, however suggests that this is not always the case.

- A 2002 award winning investigation of district consolidation in West Virginia found that almost every promise that former state officials made concerning cost savings and enhanced learning opportunities for students never materialized.

What is an alternative to consolidation?

Some researchers and policymakers promote educational service agencies as a way to save money and improve educational services in districts of all sizes. The Massachusetts Board of Education has spoken to the educational and financial benefits of educational collaboratives.[3]

Several studies document the savings of educational collaboratives in Massachusetts.

- In the greater Lawrence area of Massachusetts, ten school districts joined together to provide special education services. A 1998 study estimated that these districts between FY79 and FY98 through interdistrict collaboration saved approximately $13 million in special education tuitions alone.[4]

Massachusetts legislation does not prescribe service regions and thus allows districts to join as many collaboratives as they want, or none at all.

After reviewing the academic and applied research literature on K-12 district consolidation and related issues, the Institute conducted research regarding the cost of educational services and student outcomes in Berkshire County's eighteen traditional public school districts. The research was guided by the following research questions:

[2] Chris Berry. "School District Consolidation and Student Outcomes: Does Size Matter?" in Besieged – School Boards and the Future of Education Politics, (ed. William Howell), Brookings Institution Press, Washington, DC, 2005, p. 65.
[3] In Massachusetts, educational service agencies are known as "educational collaboratives."
[4] M.C. Stanley, "Analysis of Savings through Collaboration: A Twenty Year Longitudinal Study," Greater Lawrence Educational Collaborative, Lawrence, Massachusetts, 1998 as cited in M.C. Stanley, "Massachusetts Collaboratives – Making the Most of Education Dollars," Pioneer Institute White Paper No. 23, June 2005, p. 37.

1. What is the cost of providing educational services per pupil in the eighteen traditional public school districts?
2. What are the student outcomes for students enrolled in the eighteen traditional public school districts?

The main findings from the Institute's analysis of relevant Berkshire County data, including population trends, various school district background characteristics, educational expenditures, and student outcomes are as follows:

Population Trends

Between 1970 and 2000, Berkshire County's population declined by approximately 14,000 persons, or 10%. This is in contrast to the 11.6% growth in Massachusetts' population during the same period. The population of the county as a whole declined 2.8% (3,704 people) between 2000 and 2006.

The Berkshire Planning Commission projects that the population of Berkshire County will reach 146,462 by 2030, a growth of 8.5% (11,509 people) from 2000. The pattern of growth is expected to be distributed unevenly as was the case between 1970 and 2000.

As for the school-aged population, the Berkshire Regional Planning Commission has made the following forecasts:

- The number of children ages 5-19 in Berkshire County is projected to decline 12.2% between 2000 and 2030 (-3,303 school-aged persons; from 27,026 in 2000 to 23,723 in 2030).
- The population projections predict a declining school-aged population through 2016 in the county (19,171 school-aged persons in 2016).

School District Background Characteristics

Eighteen traditional school districts operate in Berkshire County, eleven are local and seven are regional school districts. In FY06, they ranged in size from 44 pupils in Hancock to 6,472 pupils in Pittsfield.

- The smaller districts on the Berkshire County district size continuum operate one school only and serve grades K-5, K-6, or K-8. One of these is a regional district: Farmington River.
- The larger districts on the district size continuum in Berkshire County provide complete K-12 educational services, operate more than one school, and are both local and regional.
- Ten districts operate one school; three of these ten districts are regional.

Berkshire County lost 5.9% (-1,193 students) of its school enrollment between FY03 and FY06 whereas Massachusetts lost 1.1% (-10,942) of its student enrollment.

Selected Demographics and Special Populations in School Districts

The Institute analyzed select special populations data from FY03 through FY06 to coincide with the timeframe of the educational expenditure and student outcomes data analyzed, most of which were from FY03 through FY05. Some, however, included FY06 data. The percentage of each selected special student population (non-white students, low-income students, LEP students, and special education students) increased between FY03 and FY06; however, the change ranged from a low of less than one percentage point (LEP and special education students) to a high of five percentage points (low-income students).

Educational Expenditures

The variety in the types of school districts in Berkshire County makes comparisons difficult. Some Berkshire County school districts are local while others are regional; some provide complete K-12 educational services while others are one-school districts providing elementary, middle, and/or high school education, including high school technical training.[5] A general overview was provided, nonetheless, using FY03, FY04, and FY05 financial data that is publicly available through the National Center for Education Statistics (NCES) and the Massachusetts Department of Education (MA DOE). FY05 expenditure data were used as they were the most current data available.

The data from Berkshire County do not suggest that larger districts produce cost savings for all types of educational expenditures. Rather the data suggest very small districts (less than 200 pupils) spend more for administrative and transportation costs. Size seems to be just one of many factors influencing school district costs.

Educational Achievement and Student Outcomes

The indicator used to measure educational achievement and change over time is the pass rate on the English Language Arts (ELA) and math sections of the Massachusetts Comprehensive Assessment System (MCAS), or the percentage of students with an MCAS score in the Needs Improvement, Proficient, or Advanced performance categories.[6] The report examines the performance of students in Berkshire County elementary schools (composite score Grade 3 Reading and Grade 4 ELA; Grade 4 math), middle schools (Grade 7 ELA; composite score Grade 6 and 8 math), and high schools (Grade 10 ELA and math). MCAS data from academic years 2002-2003, 2003-2004, and 2004-2005, which correspond to fiscal years 2003, 2004, and 2005, respectively, are examined. District-level performance for the eighteen districts in Berkshire County was made available by the Massachusetts Department of Education (MA DOE).

The variety in the types of school districts in Berkshire County makes comparisons of student outcomes difficult. For example, some districts provide complete K-12 educational services while others are one-school districts providing elementary, middle, and/or high school education, including high school technical training. In addition, consistent with MA DOE policy and standard research protocol, data are not reported for districts when the number of test takers is below ten. As a result, trends in data are not available for several districts. A general overview was provided, nonetheless. MCAS data from Berkshire County suggest district size to be a poor indicator of student performance on the ELA and math sections of every MCAS test grade examined.

The Institute also utilized the Effectiveness Index (EI) to assess district performance in light of the socioeconomic composition of the student population. The EI measures the extent to which individual districts meet, exceed or fail to meet or exceed their expected performance given the socioeconomic composition of their student populations and the strength of the relationship between socioeconomic factors and MCAS performance of districts statewide. This model used percentage of low-income students as a proxy for socioeconomic background and included the number of test takers as a factor in an effort to assess whether district size was correlated with

[5] See National Center for Education Statistics, Statistics in Brief, Revenues and Expenditures by Public School Districts: School Year 1999-2000, (NCES 2003—407) for further explanation of problems with district-level analyses and comparisons, http://nces.ed.gov/pubs2003/2003407.pdf.
[6] On Grade 3 MCAS tests, the performance level "Advanced" does not exist; instead the performance category of "Above Proficient" is used.

MCAS achievement.[7] The results of the EI regression analysis reveal that district size had little to no correlation with test performance in Berkshire County, a finding that was replicated in every MCAS test grade examined in FY06. The presence of low-income students, on the other hand, was highly correlated with district test performance – the more low-income students, the lower the test performance. While the results of this district level analysis highlight the importance of student socioeconomic status and provide important context to educational policy discussions in Berkshire County, it does not consider some potentially important correlates of test performance, particularly *school* characteristics such as teacher quality or student-teacher ratio. Accordingly, the reader should exercise caution when interpreting the data, tables and charts presented in the pages that follow.

Finally, graduation and dropout rates were analyzed. In Berkshire County, district size appears to be a fairly good indicator of graduation rates and four-year dropout rates. As district size increases, graduation rates declined in FY06. Conversely, as district size increases, four-year dropout rates increased in FY06. District size, however, does not explain these relationships precisely.

[7] The low-income selected student population indicates the percent of enrollment who meet any one of the following definitions of low income: the student is eligible for free or reduced price lunch; or the student receives Transitional Aid to Families benefits; or the student is eligible for food stamps.

Introduction

Recognizing the growing importance of higher education to the life prospects of the region's youth and to the workforce needs of the region's employers, regional leaders recently formed the Berkshire Compact for Higher Education (the Compact). The Compact is currently undertaking a critical review of the extent to which the region is effectively and efficiently meeting the needs of its residents. As part of this review, the Compact is beginning to carefully consider the costs and benefits of a reorganization of Berkshire County's public school districts.

In an effort to inform the Compact's deliberations, the Massachusetts College of Liberal Arts (MCLA) requested the University of Massachusetts Donahue Institute (the Institute) to prepare a report that reviews the academic and applied research literature on K-12 district consolidation and related issues and describes and analyzes relevant school district enrollment, financial and student outcomes data for school districts in Berkshire County.

The following report summarizes the history of district and school consolidation in the United States and the research literature on district and school consolidation before proceeding to review a wide variety of data that describe K-12 educational services, the costs of these services, and student outcomes in Berkshire County.

Project Purpose

The Berkshire economy has struggled over the past three decades as a result of the shift in the economic base from one primarily dependent on manufacturing toward a service and information economy. The decline of the county's manufacturing jobs has resulted in losses of population, income, wealth generating firms, and downtown commerce.[8] In addition, the county's schools are faced with staffing and financial challenges while trying to meet larger demands for accountability and data reporting.

The emerging economy calls for skills and educational levels different from those of the past. Employers seek well-prepared, well-educated, and innovative workers. Experts agree that all students need a college degree in order to participate fully in the new economy. To prepare Berkshire students for post-secondary education and/or employment pathways, the region needs to examine the ways in which it delivers K-12 educational services. While policymakers and educators want to ensure that children residing in Berkshire County receive a high quality, technology-oriented education that prepares them for success in college, work, and citizenship, they realize that cost effectiveness is crucial given the region's economic situation.

Faced with declining enrollments and budget constraints, Berkshire County schools and communities must deal with both the challenges associated with possible school reorganizations and consolidations and their concerns about student achievement, school size, economics, effectiveness, and community identity.

The purpose of this report is to provide community and educational leaders across Berkshire County with a resource document that they can use to inform their ongoing deliberations on how to best organize the delivery of K-12 educational services in the Berkshires.

[8] http://www.mcla.edu/President/Berkshire_Compact_for_Higher_Education/MCLA-berk%20compact.v4.epc.pdf. Despite national (38%) and state (11.6%) population growth, the population living in Berkshire County declined ten percent between 1970 and 2000. Berkshire Regional Planning Commission. "Population Projections 2010-2030," *Common Ground*, January/February 2003, Volume 9, Issue 4.

Background

Historically, in regions across the U.S., a common solution to declining enrollments and limited local resources has been consolidation, both through the reduction of school districts and the merger of small schools into larger ones. The two steps have almost always been taken at the same time.[9]

The thought has been that fewer schools and/or fewer districts results in lower costs and a wider selection of courses. Policies supporting consolidation, however, are often challenged on grounds that they will not lead to cost savings, but will instead create learning environments harmful to student outcomes.

Empirical research has shed light on how various inputs to education combine to affect student performance and the relationship between average costs and student performance. While the quality of both education production and cost studies has improved, they do not provide consistent conclusions. Furthermore, research on cost and production consequences of consolidation itself is almost nonexistent. Researchers point out that the claims of both supporters and detractors of consolidation have not adequately been tested using good evaluation methods.[10] In addition, some researchers report that many studies on school/district size and consolidation were performed not with an objective eye, but rather with the purpose to support or oppose consolidation. Hence, consensus does not yet exist around the relationship between size, costs, and outputs in education, or on the consequences of consolidation itself.

History of District and School Consolidation

Since the early part of the twentieth century, the number of both public school districts and schools has decreased dramatically. Specifically, the number of U.S. public-school districts declined from nearly 130,000 to around 16,000 between 1930 and 1970, the period of greatest consolidation. At the same time, more than 100,000 schools closed, a drop of almost 90%, and the number of pupils attending public schools roughly doubled.[11] As a result of declining numbers of schools and districts coupled with rising attendance, average school district size increased fourteenfold and average school size grew fivefold during this time.[12]

[9] Paul E. Peterson and John E. Chubb, "Consolidate Districts, Not Schools," in *Reforming Education in Arkansas, Recommendations from the Koret Task Force 2005*, p. 109.

[10] Andrews, Duncombe, and Yinger point out that the program evaluation literature on school district consolidation need much improvement. For example, the quantitative case studies they reviewed focus on only one school district, have no control group or do not use statistical controls, and have limited pre- and post-consolidation data. Andrews, Duncombe, and Yinger also state that the case studies making formal use of the data are descriptive in nature. In addition, the authors cite Fox (1981) who noted that education research has been plagued by ad hoc expenditure and student achievement models from which it is difficult to draw meaningful conclusions. The authors sought to determine whether the quality of empirical models and measures had significantly improved since Fox's 1981 study, and if so, whether this has lead to more consistency in the empirical results. The authors conclude that improvements have been made in both production and cost models and estimation methods, and that there is more consistency in results, but improvements are still necessary. Matthew Andrews, William Duncombe, and John Yinger, "Revisiting Economies of Size in American Education: Are We Any Closer to a Consensus?" *Economics of Education Review* 21 (2002): 246; 256.

[11] Chris Berry. "School District Consolidation and Student Outcomes: Does Size Matter?" in Besieged – School Boards and the Future of Education Politics, (ed. William Howell), Brookings Institution Press, Washington, DC , 2005. See also Duncombe and Yinger (2001).

[12] Forward by William Howell in Besieged – School Boards and the Future of Education Politics, (ed. William Howell), Brookings Institution Press, Washington, DC , 2005, p. 16. See also Chris Berry. "School District Consolidation and Student Outcomes: Does Size Matter?" in Besieged – School Boards and the Future of Education Politics, (ed. William Howell), Brookings Institution Press, Washington, DC , 2005. Berry notes that over the period of rapid consolidation, 1930 to 1970, ADA per school district increased from approximately 170 students to 2300; Average district size continued increasing and reached 2900 students by 2000.

Not surprisingly, the histories of school and district consolidations are intertwined. Researchers appear to agree that policymakers and educational professionals thought an industrialized society required schools to look alike, and thus, they advocated for a centralized model of education.[13] Additionally, according to David Tyack, they were interested in centralizing control of education rather than leaving decisions to members of a local community, especially in rural areas. Tyack noted,

> In the 20th century most elite reformers … believed that professional experts knew what was best for children. For that reason, they wanted to centralize and buffer educational decision making rather than leave it to local citizens … The easiest way to curb the influence of school trustees in these rural districts was to abolish as many districts as possible – or, euphemistically, to consolidate them.[14]

Ellwood Cubberly, head of Stanford University's School of Education, and other elite school reformers initiated the consolidation movement in the early 1900s under the premise that consolidation would lower costs, increase administrative expertise, and ensure student access to qualified teachers, specialized programs, and adequate facilities.[15]

State governments also took an active role in consolidation. According to University of Chicago Professor Christopher Berry,

> As part of broader efforts to expand state control over public education, professional educators linked to state departments of education often spearheaded initiatives to consolidate local school districts.[16]

Reformers thought big districts and big schools were better than small ones. Larger schools were viewed as more efficient and economical.[17] Another elite education reformer, James B. Conant, President of Harvard University from 1933 to 1953, argued that the largest problem facing education was the small high school. He claimed that the elimination of small high schools would result in increased cost effectiveness and greater curricular offerings.[18] When speaking to the academic benefits of school consolidation, Conant asked,

> How much of our academic talent can we afford to waste? If the answer is 'none,' then … the elimination of the small high school through district reorganization and consolidation should have top priority.[19]

Many researchers attribute much of the move toward school consolidation to Conant's 1959 publication of *The American High School Today*. Berry (2005) points out that while many still credit the Conant Reports[20] with spurring school consolidation, most consolidation had already taken place even before Conant released his preliminary findings in 1959.[21] University of Illinois at Chicago research professor Herbert J. Walberg (1993) argues that Conant was unable to test his theory on large schools because he did not include small schools in his study. He writes,

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[13] Kay, Hargood, and Russell, 1982 as cited in Joe Bard, Clark Gardener, and Regi Wieland, "Rural School Consolidation Report," Prepared for the National Rural Education Association Executive Board, April 1-2, 2005.
[14] David Tyack, "Democracy in Education – Who Needs it?" *Education Week*, November 17, 1999, p.4 as cited in Joe Bard, Clark Gardener, and Regi Wieland, "Rural School Consolidation Report," Prepared for the National Rural Education Association Executive Board, April 1-2, 2005.
[15] Paul E. Peterson and John E. Chubb, "Consolidate Districts, Not Schools," in *Reforming Education in Arkansas, Recommendations from the Koret Task Force 2005*, p. 110.
[16] Berry, p. 59.
[17] David Tyack, "Democracy in Education – Who Needs It? *Education Week*, Vol. 19, Issue 12, 1999.
[18] Bard, Gardener, and Wieland.
[19] Peterson and Chubb, p. 112.
[20] *The American High School Today*, 1959; *The Comprehensive High School*, 1967
[21] Berry, p 65.

> Despite the lack of smaller schools for comparison, Conant concluded that large "comprehensive" high schools offer a wide program of foreign languages and advanced placement courses (for college credit) at lower cost. He could not test this hypothesis since he had no small schools in his sample.[22]

Kathleen Cotton of the Northwest Regional Education Laboratory indicates that Conant's idea of an adequately large high school –300 students for grades 10-12 and 400 students in grades 9-12 – would be described as a small school today. Further, she states,

> As several researchers have pointed out, Conant never advocated the schools with thousands of students for which his book was used as a rationale.[23]

While the pace of consolidation has slowed since the early 1970s, some states still push consolidation by providing incentives or using negative pressures.[24] As of Winter 2006, eleven states had active proposals or initiatives to consolidate rural districts and/or schools: Arkansas, Illinois, Iowa, Kansas, Kentucky, Maine, Nebraska, South Carolina, South Dakota, Texas and West Virginia.[25]

Research on Consolidation

Several researchers indicate that little has been written about the consequences of consolidation itself. Rather, research has focused on the impact of district or school size on educational or cost outcomes. Berry (2005) states

> Although a sizeable literature has developed on the relation of student outcomes to school and district size, *few studies address consolidation directly*, most are limited to a single state or district, and all rely on data too recent to speak directly to the period of greatest consolidation.[26]

Berry's use of the term "sizeable" with regard to the literature on the relation of student outcomes to school and district size is put into question by Andrews, Duncombe, and Yinger (2002), three Syracuse University policy researchers. They assert that school or district size, when included in education production functions over the last 30 years, "has often been a secondary control variable." In fact, of the numerous production function studies since 1980, they found only seven that included size as a determinant.[27] Kathleen Cotton would agree with Berry. She analyzed more than 100 documents, 69 of which focused on school size and educational quality. Berry, nonetheless, asserts,

> Cotton's review is more comprehensive than that of Andrews, Duncombe, and Yinger, but it is less attuned to methodological issues.[28]

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[22] James Conant in his 1967 report (The Comprehensive High School) examined questionnaires from 2,024 high schools nationwide with enrollments between 750 and 1,999 students; he concluded that large, comprehensive high schools were more efficient and provided higher quality schooling because they offered a wider selection of courses. See Herbert J. Walberg, "Losing Local Control of Education," *Heartland Institute Policy Study 59*, Chicago: Heartland Institute, 1993, p. 10.

[23] Kathleen Cotton, "School Size, School Climate, and Student Performance, " NWREL School Improvement Research Series, Close-Up #20, May 1996, http://www.nwrel.org/scpd/sirs/10/c020.html

[24] For example, New York and at least seven other states use separate aid packages designed to push school district reorganization. Andrews, Duncombe, and Yinger, p. 245. Other states set a minimum size and legislate out of existence any school or district that falls under the limit. See The Rural School and Community Trust, "Anything but Research-based: State Initiatives to Consolidate Schools and Districts," http://www.ruraledu.org/site/apps/nl/content3.asp?c=beJMIZOCIrH&b=1000115&ct=3715207

[25] The Rural School and Community Trust, "Anything but Research-based – State Initiatives to Consolidate Schools and Disticts," http://www.ruraledu.org/site/apps/nl/content3.asp?c=beJMIZOCIrH&b=1000115&ct=3715207

[26] Berry, p. 64.

[27] Andrews, Duncombe, and Yinger, p. 245.

[28] Berry, p. 65.

Despite their disagreements on how much research has been conducted on school or district size, these researchers are all in agreement that few studies have focused on the student performance consequences of consolidation itself.

Similar to Berry's assertion on production function literature, Duncombe and Yinger (2001) indicate that cost function literature does not examine the impact of consolidation per se either.[29]

Impact on Student and Community Outcomes

Given that consolidation alters the size of participating districts and/or schools, it is helpful to begin with an analysis of the impact of district/school size on student performance.

School Size Literature

Initial school size literature focused primarily on input measures of school quality.[30] The most influential studies on opposing sides of the issue were conducted by James Conant (1959, 1967) and Roger Barker and Paul Gump (1964). Conant examined questionnaires from 2,024 high schools with enrollments between 750 and 1,999 students.[31] He concluded that in order to be cost effective and to offer a sufficiently diverse curriculum, a secondary school had to have at least 100 students in its graduating class.[32] While it may not seem so from these numbers, Conant advocated for large schools.

On the opposing side, Barker and Gump observed five Kansas schools ranging in enrollments from 83 to 2,287 students.[33] They found, among other things, that increases in school size did not necessarily translate into large increases in curricular programming, and that the level of extracurricular participation was much higher in smaller schools.[34] Nevertheless, Conant won the day and education policy subsequently encouraged large schools.

In the 1980s, studies started to concentrate more on educational outputs such as test scores, attendance rates, and graduation and dropout rates. These studies have been more favorable to small schools.[35] In fact, while findings are mixed, decades of research show small schools to be at least equal to and often more educationally beneficial than large schools for both elementary and secondary students.[36] Moreover, research suggests that the benefits of small schools are greatest for ethnic minority students and students of low socioeconomic status.[37] Since many small schools are in rural areas, some researchers designed studies to learn whether it is the smallness or the rural

[29] William Duncombe and John Yinger, "Does School District Consolidation Cut Costs?" Syracuse University, Maxwell School of Citizenship and Public Affairs, Center for Policy Research, Jan 2001, p. 2, http://www-cpr.maxwell.syr.edu/cprwps/pdf/wp33.pdf

[30] Christopher Berry (2004), "School Inflation – Did the 20th century growth in school size improve education?" *Education Next*, No. 4, 2004.

[31] Walberg, p. 10.

[32] James Conant, The American High School Today: A First Report to Interested Citizens, New York: McGraw Hill, 1959 as cited in Cotton (1996).

[33] Barker and Gump, *Big School, Small School: High School Size and Student Behavior*, 1964 as cited in Cotton (1996).

[34] Kathleen Cotton (1996).

[35] Mary Anne Raywid, "Current Literature on Small Schools, *ERIC Digest*, ED425049, 1999. See also Cotton (1996).

[36] In her analysis of over 100 documents, Kathleen Cotton found: about half the student achievement research finds no difference between the achievement levels of students in large and small schools, including small alterative schools; the other half finds student achievement in small schools to be superior to that in large school; and, none of the research finds large schools superior to small schools in their achievement effects. See Cotton (May 1996).

[37] Cotton (May 1996). See also V. E. Lee and J. B. Smith (1995) and Summers and Wolf (1997) as cited in Berry (2005). Andrews, Duncombe, and Yinger note that the Lee and Smith 1997 study does not include any school input measures in their models which implies that their findings may be biased. See Andrews, Duncombe, and Yinger (2002), p. 253. See also Fowler 1995 and Howley 1994 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.

setting of these schools that accounts for their positive effects. These studies reveal that smallness of schools, regardless of setting, is what is beneficial to students.[38]

Similarly, of the seven studies of school size and student performance reviewed by Andrews, Duncombe, and Yinger (2002), only one, Kenny (1982), found increasing returns to scale; the remaining six studies found decreasing returns. The authors conclude that "larger schools are associated with lower student performance holding school and nonschool inputs constant."[39]

Interestingly, several researchers note that "how big is small?" remains an unanswered policy question.[40] In her study of 69 key reports, Cotton (1996) found that only 27 mention any numbers in their analysis of small versus large schools. In addition, she found the upward limit for "small" school in these 27 documents to range from 200 to 1,000 students; and for a "large" school to range from 300 to 5,000 students.[41] Despite these shortcomings, Cotton, quoting Williams (1990), states,

> on average, the research indicates that an effective size of an elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school.[42]

Like Conant, current proponents of school consolidation contend that a wider range of academic and extracurricular offerings can be provided through school consolidation, with few offerings being dropped due to low enrollment. While larger schools are thought to provide more numerous and more varied curriculum offerings than small schools, some research has not validated a relationship between school size and curriculum quality. To illustrate, one study found that "it takes a lot of bigness to add a little variety" – that is, "on the average a 100% increase in enrollment yields only a 17% increase in variety of offerings."[43]

In addition to student achievement and curriculum offerings, researchers have examined school size on other aspects of schooling, including: student attitude toward school, social behavior problems, extracurricular participation, feelings of belongingness, interpersonal relations, attendance, dropout rate, self-concept, teacher attitudes, and success in college among others. One study found that consolidation of schools can produce psychological benefits, such as schools gain a confidence and an identity in the community not previously possessed.[44] In addition, another researcher stated that sports programs and extracurricular activities flourish in consolidated schools because of combined funding.[45]

Despite these early studies citing positive benefits of large schools, more recent research indicates stronger affective and social outcomes for small schools. For instance, several studies on the effects of large and small

[38] Stockard and Mayberry 1992; Walberg 1992 as cited in Cotton (May 1996). See also Marion and McIntire 1992 as cited in Walberg (1993), p. 11. Marion and McInIntire, in an analysis of 710 schools, show that, after discounting the positive effects of rural location, students in smaller high schools did better on standardized tests and completed more years of higher educational.
[39] Furthermore, four of these studies identified constant returns to scale over at least some of the data's range, suggesting that returns to scale in school size are nonlinear. Andrews, Duncombe, and Yinger (2002), p. 255.
[40] Mary Anne Raywid, "Current Literature on Small Schools, *ERIC Digest*, ED425049, 1999; Cotton (1996). Raywid cites the following studies on school size to illustrate the inconsistencies in definition of large and small: A 1990 study (Williams) recommended up to 800 students for high schools, yet a 1996 National Association of Secondary School Principals suggested a limit of 600 students for secondary schools. Lee and Smith (1997) found secondary schools in the range of 600-900 work best. A Cross City Campaign for Urban School Reform study (Fine & Somerville, 1998) set the limit at 350 students for elementary schools and 500 for high schools.
[41] Cotton (1996).
[42] Cotton (May 1996).
[43] Pittman and Haughwout, p. 337 as cited in Kathleen Cotton, "School Size, School Climate, and Student Performance, " NWREL School Improvement Research Series, Close-Up #20, May 1996, http://www.nwrel.org/scpd/sirs/10/c020.html. See also Fowler and Walberg 1991; Gregory 1992; Howley 1994, 1996; McGuire 1989; Melnick, et al. 1986; Monk 1987, 1992, Monk and Haller 1993; Nachtigal 1992; Pittman and Haughwout 1987; Rogers 1987; Williams 1990 as cited in Cotton (1996).
[44] Steve Kay, "Considerations in Evaluating School Consolidation Proposals," Small School Reform 4 (Fall 1982): 8-10 as cited in Erik Nelson, "School Consolidation," ERIC Digest, ED282346,1985, http://www.ericdigests.org/pre-925/school.htm.
[45] Erik Nelson, "School Consolidation," ERIC Digest, ED282346, 1985, http://www.ericdigests.org/pre-925/school.htm

schools on student attitudes toward school and specific academic courses favor small schools.[46] Some research contends that personal and academic self-concepts of students in small schools are more positive compared to those in large schools.[47] Numerous studies suggest that students in small schools experience a much greater sense of belonging (i.e., lower level of alienation, higher quality of interpersonal relations) compared to students in large schools.[48] As for extracurricular participation, some studies found students participating in extracurricular activities at significantly higher levels in small schools.[49] Findings on administrator attitudes toward work, teacher attitudes toward work, administration, and colleagues, and cooperation and collaboration among colleagues seem to support small schools as well.[50] These findings help to explain what it is about small schools that positively impacts student outcomes.

Finally, schools are a large part of a community, and in many cases, they are the heart of the community. Researchers often cite attachment to community and parental involvement as major positive influences on student achievement and attitudes. In many cases, the school generates involvement and enjoys substantial support from community members.[51] In these cases, the loss of a school could greatly impact the social and economic vitality of a community. Some studies find that after a school closure, out-migration, population decline and neighborhood deterioration are set in motion, and support for public education diminishes.[52]

In his explanation of why small schools benefit from higher parental involvement relative to large ones, Walberg writes,

> Parents are more likely to know the principal and teachers, be informed about their children's progress, participate more fully in school activities, and influence decision making. These effects occur partly because the school is smaller, but also because it is likely to be physically and psychologically close to students' homes.[53]

With regard to student achievement and most other outcomes on educational quality, research supports small schools. Nevertheless, it is important to note that research on small schools does not provide a direct test of the impact of school consolidation.[54]

[46] Fowler, 1995; Howley, 1994; Rutter, 1988 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.
[47] Rutter, 1988; Stockard & Mayberry, 1992 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.
[48] Fowler &Walberg, 1991; Gregory, 1992; Stockard & Mayberry, 1992, Rutter, 1988 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.
[49] Cotton, 1996; Fowler, 1995; Stockard & Mayberry, 1992 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.
[50] Gottfredson, 1985; Gregory, 1992; Stockard & Mayberry, 1992 as cited in Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *Eric Digest*, ED401088, 1996, http://www.ericdigest.org/1997-2/small.htm.
[51]James D. Jess, "Rural Education 1984: Issues and Impacting Forces. A Local Perspective," Paper presented at the National Conference on Building Partnerships for Quality Education in Rural America, Washington, DC, 1984, ED 251 253 as cited in Rodolfo Rincones, "Exploring Alternatives to Consolidation," Eric Digest ED 296817, 1988.
[52] Richard L. Andrews and Others, "Managing Contracting Systems: Three Policy Alternatives," Paper presented at the Annual Conference of the American Educational Research Association, New York, NY, March 1982, ED 221 947 as cited in Rodolfo Rincones, "Exploring Alternatives to Consolidation," *ERIC Digest*, ED 296817, 1988. Surveys from the state of Connecticut provide an indication of the negative relationship between school consolidation and parental involvement. Between 1988 and 1992, schools in Connecticut that were consolidated (or otherwise grew in enrollment as a result of reorganization) experienced a decrease in parental interaction as evidenced by the following statistics: twelve percent less likely to respond to questionnaires from the school; seven percent less likely to say that their school "communicate[d] well" with them; ten percent less likely to participate in parent-teacher organizations; ten percent less likely to attend a school open house; and, five percent less likely to check their children's homework. See http://www.hoover.org/publications/digest/3459446.html.
[53] Walberg, p. 10.
[54] Peterson and Chubb, p. 113.

District Size Literature

The empirical literature on the consequences of district size on student outcomes is smaller and less consistent in its findings.[55] For example, Andrews, Duncombe, and Yinger (2002) reviewed five studies that estimated returns to size at the district level. Two studies, one in New Jersey (Walberg and Fowler, 1987) and the other in Texas (Ferguson, 1991), found larger districts were associated with lower student achievement. In contrast, two other studies, one for large districts in California (Sebold and Dato, 1981) and the other for Alabama elementary schools (Ferguson and Ladd, 1996) found larger districts were associated with higher student achievement.[56] Berry points out that unfortunately, each of these studies focused on a different state, and thus it is difficult to identify the reasons for the discrepancies in their conclusions.[57] In addition, these studies did not focus on consolidation per se, but rather on the impact of district size on student performance. The size of a district may be the result of population density alone, for example, rather than purposeful district consolidation.[58]

Nationwide Consolidation Study

A nationwide, historical consolidation study finds evidence that the educational impact of district consolidation is different from that of school consolidation. Berry (2005) focuses on the effects of change in school and district size on student outcomes, specifically the wages students earn after graduation.[59] The study found small gains for district consolidation and large negative effects for school consolidation. Berry concludes

> I find that the modest gains associated with larger districts are likely to be outweighed by the harmful effects of larger schools… Perhaps equally dismaying to the proponents of consolidation would be just how meager the estimated district-size effects turned out to be.[60]

Berry's consolidation study confirms the results of the research literature on small schools discussed earlier in this report. Berry's study further suggests that district and school consolidation do not necessarily need to occur simultaneously.

Financial Implications of Consolidation

Some educators and policymakers have argued that large schools/districts are more cost-effective. Larger units are expected to operate more efficiently than smaller units in that increasing size should decrease unit costs; however, a closer look reveals that this may not be necessarily true. Many small schools are operated very economically, and many large ones have very high per-pupil costs.[61] Arguments for consolidation based on

[55] Berry (2005), p. 65.
[56] Andrews, Duncombe, and Yinger (2002), p. 254. The authors point out that it is possible in school level studies to estimate the returns to scale for both school and district (i.e. Ferguson and Ladd, 1996).
[57] See Berry, p. 65.
[58] Peterson and Chubb, p. 100.
[59] Berry investigates the effect of changing school and district size through consolidation on average adult wages for males born in the 48 mainland states and the District of Columbia between 1920 and 1949. Direct measures of student achievement, such as standardized test scores, are not available across states for the years under investigation. Instead, Berry relies on students' adult wages as the measure of performance in his model. Berry found that an increase in school size of 100 students is associated with a 3.7 percent decline in earnings for high school graduates, and an increase in district size of 2,800 students is associated with a 2.5 percent increase in earnings for high school graduates. See Berry, p. 66-71.
[60] Berry, p. 76.
[61] Researchers have found that the relationship between size and cost varies depending on individual school circumstances (Gregory 1992; Howley 1996; McKenzie 1983; Melnick, et al. 1986, Nachtigal 1992, Robertson 1995; Rogers 1987; Walberg 1992; Williams 1990) as cited in Cotton (May 1996).

economic efficiency suggest the need for fewer teachers and administrative personnel and reductions in expenditures for capital improvements and basic maintenance.[62]

Andrews, Duncombe, and Yinger (2002), reviewed twelve cost studies and found evidence of economies of scale in ten of them. Four of the studies suggested a U-shaped relationship between district size and most types of expenditures. In other words, the very small and very large school districts tend to spend the most per capita on various expenditures. In their concluding remarks, they state:

> Sizeable potential costs savings may exist by moving from a very small district (500 or fewer pupils) to a district with about 2,000-4,000 pupils, both in instructional and administrative costs. Per pupil costs may continue to decline until an enrollment of roughly 6,000, when diseconomies of scale start to set in.[63]

Andrews, Duncombe, and Yinger note that none of the studies they examined take into account the increase in opportunity costs for travel time for parents and students when several districts consolidate. As a result, they modify their conclusion and state,

> The optimal enrollment, especially in sparsely populated districts, is likely to be at significantly lower levels.[64]

Several studies have suggested numerous cost disadvantages of consolidation. To illustrate, Tholkes (1991) argues that there are price disadvantages to getting larger, including the fact that teacher unions are more apt to organize larger districts, and wages are typically set to those of the most generous district.[65] Moreover, consolidating schools or districts usually results in longer average commute times. Kenny (1982) showed that consolidation added to the operating costs of transportation and created potentially significant opportunity costs to students and parents of longer travel time to school.[66] In addition, one study found that unless the number of buildings and staff are reduced, consolidation is unlikely to save very much money.[67]

Some researchers note that the cost of education should be viewed by looking at the number of students who actually graduate from high school rather than on a cost-per-student-enrolled basis. When examined on the basis of the number of students they graduate, small schools in New York were found to be less expensive than either medium-sized or large high schools.[68]

In many cases, schools provide an important economic base for the community. A 2002 study looked at the fiscal impact and socioeconomic effects of consolidation on communities in New York which had previously operated a

[62] Erik Nelson, "School Consolidation," ERIC Digest, ED282346, 1985, http://www.ericdigests.org/pre-925/school.htm. Tholkes (1991) cited the advantages of a large school district being able to efficiently utilize specialized labor, such as math and science teachers, and specialized facilities, such as science and computer labs. In addition, through consolidation, administrative staff and support personnel can be shared across districts, and the resulting higher enrollments should be associated with lower per pupil administrative costs. See R. J. Tholkes, "Economies of Scale in Rural School District Reorganization," *Journal of Education Finance*, 16, 1991, 497-514 as cited in Andrews, Duncombe, and Yinger, p. 247.
[63] Andrews, Duncombe, and Yinger (2002), p. 245.
[64] Andrews, Duncombe, and Yinger (2002), p. 255.
[65] R. J. Tholkes, "Economies of Scale in Rural School District Reorganization," *Journal of Education Finance*, 16, 1991, 497-514 as cited in Andrews, Duncombe, and Yinger, p. 247.
[66] L.W. Kenny, "Economies of Scale in Schooling," *Economics of Education Review*, 2, 1982, 1-24 as cited in Andrews, Duncombe, and Yinger, p. 248.
[67] W.D. Duncombe, J. Miner, and J. Ruggiero, "Potential cost savings from school district consolidation: A case study of New York," Journal of Public Economics, 52, 1995, 49-72 as cited in Andrews, Duncombe, and Yinger, p. 251.
[68] Stiefel, Latarola, Fruchter & Berne (1998) as cited in Mary Anne Raywid, "Current Literature on Small Schools, *ERIC Digest*, ED425049, 1999, p. 3.

school. Findings indicated that towns that lost their school had a lower social and fiscal capacity compared to towns that maintained their schools.[69]

Case Study – West Virginia

West Virginia has closed more than 300 schools, one in every five, since 1990. In 2002, the *Charleston Gazette* investigated the outcomes of the state's consolidation efforts in the series, "Closing Costs." Its authors found that almost every promise that former state officials made concerning cost savings and enhanced learning opportunities for students never materialized.[70] Some of the findings included:

- counties statewide spent a higher percentage of their budgets on maintenance and utilities in 2002 than they did in 1998, despite consolidation.
- the number of local administrators increased 16% despite a 13% decline in student enrollment and the closing of over 300 schools between 1992 and 2002.
- the number of state-level administrators increased and their salaries nearly doubled between 1990 and 2002.
- West Virginia school transportation costs nearly doubled between 1990 and 2002.
- the number of children spending two hours or more on school buses per day doubled during the 1990s.
- the promises of expanded curriculum and additional AP classes were largely unfulfilled.[71]

Furthermore, West Virginia School Building Authority (SBA) Director Clacy Williams stated that SBA abandoned a study to determine how much money has actually been saved by consolidation because of the "extreme difficulty and complexity of attempting such a study."[72]

Rural New York District Consolidation Study

Duncombe and Yinger (2001) go beyond the existing education cost studies and look at the cost implications of actual district consolidations in rural New York. Their data covers the years 1985 to 1997 during which twelve pairs of rural districts consolidated.[73] Contradicting the traditional view and recent findings in West Virginia, Duncombe and Yinger find clear evidence of economies of scale in the provision of transportation services.[74] Unfortunately, their study did not consider the impact of consolidation on students' commuting times. Duncombe and Yinger recommend

> no support for the use of state tax dollars to encourage consolidation among districts with 1,500 or more pupils.[75]

Concluding Thoughts on What the Literature Review Tells Us

The question remains whether it is possible to reconcile the results from the school-level student performance literature with cost studies of school districts. Based on the literature reviewed in this report, it seems that a

[69] Lyson (2002) analyzed data from all 352 incorporated villages and towns with populations under 2,500 that had previously operated a school in New York State. See The Rural School Community Trust, "The Fiscal Impacts of School Consolidation: Research Based Findings" for a summary of findings.
[70] The authors, reporters Eric Eyre and Scott Finn, won the 2002 Education Writers Award for best series for a newspaper with circulation under 100,000 and the Fred M. Hechinger Grand Prize for Education Reporting. See http://www.ruraledu.org/site/c.beJMIZOCIrH/b.1073911/apps/nl/content3.asp?content_id=%7B8692B89D-A06D-43B6-9DFB-F129B0EF3B95%7D&notoc=1
[71] http://www.wvgazette.com/section/Series/Closing+Costs
[72] http://www.wvgazette.com/section/Series/Closing+Costs
[73] All other rural school districts in New York serve as their comparison group. See Duncombe and Yinger, p. 29.
[74] Duncombe and Yinger, p. 25.
[75] Duncombe and Yinger, p. 30.

combination of small schools and moderately sized districts may be the policy prescription to best improve student outcomes while streamlining costs. However, the opportunity costs for travel time for parents and students when several districts consolidate must be considered. Andrews, Duncombe, and Yinger state,

> Under some combinations, consolidation of very small rural districts may save money, as long as schools are kept a moderate size, and transportation times remain reasonable. The typical suburban or small city district between 4,000 and 8,000 students may have an appropriate size, but the use of a single high school between 1,500 and 3,000 students might be too large, especially if there are a significant number of disadvantaged students.[76]

In the next section, this paper will briefly examine some alternatives to consolidation that many claim offer notable financial and educational benefits.

An Alternative Strategy to Consolidation

Some researchers and policymakers promote educational service agencies (ESAs) as a way to save money and improve educational services for districts of all sizes. Small districts may find it extremely difficult to provide a full array of support and administrative services while large districts suffer from duplicative or inefficient administrative systems. By joining together through shared service agreements, schools and districts can pool resources, eliminate duplication, and streamline some of their functions and services. In addition, by forming ESAs, schools can consolidate administrative activities in order to realize savings while still maintaining local control over their education functions. Proponents maintain that ESAs allow school principals and local school boards to contract out support services so they can focus on teaching and learning.

While other alternatives to consolidation exist, for purposes of this report, we examine educational service agencies only because they have proven to reduce education costs while improving various school capacities nationwide and especially in the state of Massachusetts.[77]

Educational Service Agencies

ESAs are publicly funded agencies, organized on a regional basis and authorized in state statutes or rules and regulations. ESAs are defined in the *No Child Left Behind Act* of 2001 as: "regional public multiservice agencies authorized by state statute to develop, manage, and provide services or programs to local education agencies."[78]

ESAs are known by various other names including educational service districts (ESDs), intermediate units (IUs), boards of cooperative educational services (BOCEs), regional educational service agencies (RESAs), and intermediate school districts (ISDs). In Massachusetts, they are referred to as "educational collaboratives."[79]

ESAs are typically categorized into three types: Special district ESA, Regionalized SEA/ESA, and Cooperative ESA.

[76] Andrews, Duncombe, and Yinger, p. 256.
[77] Some urban districts have converted or are planning to convert all large high schools into small schools, either by creating new schools or by subdividing large high schools into several schools within one building.
[78] E. Robert Stephens, William G. Keane and Brian L. Talbott, "Exploring the Uniqueness of the Core Leadership Roles of CEOs of an Educational Service Agency," *Perspectives*, Volume 12, Fall 2006, p. 39.
[79] M. Craig Stanley, "Massachusetts Collaboratives: Making the Most of Education Dollars," White Paper for Pioneer Institute for Public Policy Research, no. 23, June 2005.

- *Special district ESA*. This type of ESA is formed by the state, or by the state education agency (SEA) and a group of local education agencies (LEA), to provide services to both the state and local education agencies. Its legal framework is structured in legislation or state regulations, its governance tends to be lay control, its programs and services tend to be for both the SEA and member LEAs, and its funding tends to be a mix of local, regional, state, and state/federal.
- *Regionalized SEA/ESA*. This type of ESA is a branch of the state education agency and thus delivers services for the SEA. Its legal framework is structured in SEA regulation only, its governance is professional advisory only, its programs and services are determined by the SEA, and its funding tends to be exclusively state or state/federal.
- *Cooperative ESA*. This type of ESA is a loose consortium of LEAs. Its legal framework is usually intergovernmental statutes, its governance is through LEA members, its programs and services are determined by member LEAs, and its funding is almost exclusively local and state/federal. These ESAs can be further divided into multi-purpose (five or more services), limited purpose (not more than four services), and single purpose.[80]

In 1983, over 30 states provided some kind of sharing agreement;[81] this number grew to 42 states in 2004.[82] Over the past two decades, the number of ESAs has also increased, from 280 to 551.[83]

Educational service agencies have augmented the programs and services they provide to schools and other clients. To illustrate, a growing number of schools and districts have established agreements to share student transportation, technology, library services, food services, curriculum development, teacher training, special education, academic programs, data analysis, custodial services, and purchasing. Some schools and districts also share personnel, such as administrators, teachers, health care professionals, and technical experts. A 2005 Pioneer Institute White Paper contends that ESAs are particularly effective at providing programs with the following characteristics: high-cost, require specialized staff, significant startup costs, and those that can benefit from economies of scale.[84]

Table 1 identifies the vast services and programs ESAs provide as of 2001 and the number of ESAs providing those services.[85]

Table 1
ESA services, Nationwide 2001[86]

# of ESAs	Type of service provided
527	Professional development
440	Special education
429	Educational technology
390	Early childhood
350	Leadership training

[80] E. Robert Stephens (1998), Expanding the Vision: New Roles for Education service Agencies in Rural District Improvement, Charleston, WV: Appalachia Educational Laboratory. *See* M. Craig Stanley, June 2005, p.16.
[81] Sarah Hanuske, "Shared Services for Rural and Small Schools," *ERIC Digest*, ED259874, 1983, http://www.ericdigests.org/pre-922/shared.htm
[82] M. Craig Stanley, June 2005, p. 3.
[83] Brian L. Talbott, "Preface," *Perspectives*, Volume 12, Fall 2006.
[84] M. Craig Stanley, June 2005, p.3.
[85] L.E. Christiansen, History of the Association of Educational Service Agencies, AESA, Arlington, VA, 2001, as cited in M. Craig Stanley, June 2005, p.3.
[86] This table has been copied from the Pioneer White Paper which is based on the Association of Educational Service Agencies data.

340	Cooperative purchasing
318	Computer
316	Adult education
308	Learning – Libraries
297	Vocational education
286	Gifted education
253	Incarcerated students
251	Student testing/evaluation
239	Computer and audiovisual repair
228	Personnel recruitment/screening
186	Printing
186	Insurance
164	Safety/Risk Management
159	Teaching training centers
147	Telecommunications
128	Energy management

Since enactment of the federal No Child Left Behind Act of 2001, ESAs in some states have begun to work with schools to aggregate data that will help them move toward meeting "adequate yearly progress" classification.[87]

Several studies document the savings of ESA initiatives. For example, the Southwest and West Central Educational Cooperative Service Unit conducted cost-effectiveness studies in 1989 and 1995; both studies found significant savings from purchasing products and services regionally.[88] In the greater Lawrence area of Massachusetts, ten school districts joined together to provide special education services. Between FY79 and FY98, it is estimated that these districts through interdistrict collaboration saved approximately $13 million in special education tuitions alone.[89]

Background and Growth of Educational Collaboratives in Massachusetts

In the 1970s, in light of declining school enrollments and increasing educational costs, local school districts began to support educational collaboratives as a cost effective delivery system. With the passage of Chapter 766 of the Acts of 1972, An Act Further Regulating Programs For Children Requiring Special Education and Providing Reimbursement Therefor, local school committees believed that a cooperative effort would help them meet the needs of their low incidence student populations and further support educational collaboratives.[90]

[87] See Michael L. Fuller and Margaret E. Ronning, "Using Data to Help Schools Meet Adequate Yearly Progress: A Role for Educational Service Centers," *Perspectives*, Volume 12, Fall 2006. See also Gene Sharratt, Kathy Budge, and Brian Talbott, "Educational Service Agencies: A Significant Partner in District-wide Improvement," *Perspectives*, Volume 12, Fall 2006

[88] Southwest and West Central Educational Cooperative Service Units, Cost Savings Analysis 1988-1989, Marshall, MN, 1989; Southwest and West Central Educational Cooperative Service Units, Cost Savings Analysis for the 1994-1995 Fiscal Year, Marshall, MN, 1995 as cited in M. Craig Stanley, June 2005, p. 35.

[89] M.C. Stanley, "Analysis of Savings through Collaboration: A Twenty Year Longitudinal Study," Greater Lawrence Educational Collaborative, Lawrence, Massachusetts, 1998 as cited in M.C. Stanley, "Massachusetts Collaboratives – Making the Most of Education Dollars," Pioneer Institute White Paper No. 23, June 2005, p. 37.

[90] http://www.doe.mass.edu/moec/policy/background.html

Chapter 40, Section 4E of the Massachusetts General Laws (1974) is the original legislation permitting two or more school committees to authorize agreements for joint educational activities. School districts soon formed educational collaboratives to assist with meeting the special education mandate.[91]

The Massachusetts Board of Education, in 1977, adopted a formal policy on educational collaboratives which emphasized that they were voluntary ventures undertaken jointly only upon the approval and authority of local school committees. Two pieces of legislation, Chapter 188 of 1985, the School Improvement Act and Chapter 727 of 1987, An Act Enhancing the Teaching Profession and Recognizing Educational Achievement, increased the state's involvement with educational collaboratives. As a result, collaboratives became eligible to participate in certain state-funded programs and school assessment activities. The Board of Education updated its policy on educational collaboratives in 1988 and supported its 1977 policy position that local school committees are responsible for the operation of their collaborative. The Board further stated that collaboratives could partner with the state Department of Education to implement state-mandated and other programs, such as regular education, occupation education, special education, administration, and professional development.[92] As such, Massachusetts Educational collaboratives fall within the Cooperative ESA model described earlier.

Since 1988, the state Board of Education has emphasized an expanded scope of services and programs beyond professional development and special education. Specifically, its policy position acknowledges

> educational collaboratives have a potential beyond special education to increase and expand the level of service in regular education, occupational education, staff development, research and innovative programs.[93]

The state Board of Education has also spoken to the educational and financial benefits of educational collaboratives:

> the collaborative structure has the potential to increase efficiencies and economies … Educational collaboratives serve as important partners to school systems and the state in their effort to increase equal educational opportunities for all students, and to maintain the quality of educational offerings.[94]

Educational collaboratives vary greatly in size and scope. Some are single purpose with annual budgets of a few hundred thousand dollars. Others provide a variety of programs and services with annual budgets close to $20 million.[95] Thirty-five collaboratives currently provide a variety of services to their member school districts.[96]

A 2004 Massachusetts Organization of Educational Collaborative (MOEC) survey found that its 29 members provided a broad range of educational programs and services to their member school districts.[97] Please see Table 2 for more detail.[98]

[91] http://www.doe.mass.edu/moec/policy/background.html
[92] http://www.doe.mass.ued/moec/policy/intro.html. The enactment of Chapter 631 of the Acts of 1985, An Act Relative to the Authority of Ecucational Collaboratives, deemed collaboratives to be public entries and clarified the authority of the collaborative board of directors.
[93] http://www.doe.mass.edu/moec/policy/policy.html
[94] http://www.doe.mass.edu/moec/policy/policy.html
[95] M. Craig Stanley, June 2005, p. 4.
[96] http://www.doe.mass.edu/moec/policy/background.html
[97] The Massachusetts Organization of Educational Collaboratives (MOEC) is the professional organization to which each collaborative *may* belong. MOEC serves to enhance the practice of collaboration among its members and their constituent districts through education and information sharing, responsive consultation and planning, and field support to member collaboratives. http://www.doe.mass.edu/moec/overview.html
[98] Massachusetts Organization of Educational Collaboratives (MOEC), Programs and Services, Natick, MA, 2004 as cited in M. Craig Stanley, June 2005, p.4.

Table 2 ***ESA services, Massachusetts 2004***	
# of ESAs	**Type of service provided**
29	Special education programs
29	Professional Development
18	Pupil transportation services (typically for special education students)
17	Technology services
15	Job-specific discussion and learning networks
12	Manage Medicaid reimbursements
11	Cooperative purchasing
7	Regular education programs

In 2003-2004, only 75%, or 246, of the state's 330 traditional public school districts were members of collaboratives. While 58 school districts belonged to more than one collaborative, 70 districts did not belong to any collaborative (the majority of these districts are located in the western part of the state).[99]

The 2005 Pioneer Institute White Paper points out that the Massachusetts legislation does not prescribe service regions and thus allows districts to join as many collaboratives as they want, or none at all.[100] In contrast, in most states with ESAs, a network of ESAs exists to support all school districts in the state. For example, all Connecticut school districts belong to one of the six educational service agencies operating within the state – this has been cited as one of the major reasons ESAs have been so effective in that state.[101] In addition, educational collaboratives are not eligible for most grant funds, and they have no direct access to school building assistance funds.[102] Thus, Massachusetts collaboratives support themselves by selling services to school districts.

Several studies document the savings of educational collaboratives in Massachusetts. A 1989 Massachusetts Organization of Educational Collaboratives survey indicated significant savings in the following three special education services: special education tuitions: 40% to 60%; special needs transportation services: 20% to 30%; Itinerant Therapists (OTs, PTs, SLPs: 25% to 50%). According to the 2005 Pioneer Institute study, savings from six collaboratives in Massachusetts "range from 15 to 50 percent" depending on the program area (special education programs and services, professional development, pupil transportation, educational technology, cooperative purchasing, and energy management).[103]

[99] In addition, 15 school districts did not belong to a collaborative as individual districts but were part of a regional district that did belong to a collaborative. These districts were Amherst, Brimfield, Brookfield, Chesterfield-Goshen, Conway, Freetown, Holland, Lakeville, Pelham, Southampton, Sturbridge, Sunderland, Wales, Westhampton, and Williamsburg. M. Craig Stanley, June 2005.

[100] Some non-member districts pay to utilize collaborative services; their tuition and fees, on average, are 15 to 20 percent higher than member tuition and fees. M. Craig Stanley, June 2005.

[101] M. Craig Stanley, June 2005.

[102] While in most other states elected representatives from the general populace or from member school districts comprise ESA governing boards, the situation is very different in MA – some collaboratives have superintendent boards, some have school committee boards, and some have member school district employees such as special education administrators and school business officials on their boards. In fact, nearly 80 percent of the collaborative boards in Massachusetts are comprised of superintendents and school committee members. See http://www.doe.mass.edu/moec/policy/issuesIV.html. See also M. Craig Stanley, June 2005, p. 2.

[103] M. Craig Stanley, June 2005. Stanley chose five Massachusetts collaboratives (Greater Lawrence Educational Collaborative, Hampshire Educational Collaborative, Lower Pioneer Valley Educational Collaborative, South Shore Educational Collaborative, and The Education Cooperative) that have developed strong programs worthy of replication in the areas of special education programs and services, professional development, pupil transportation, educational technology, cooperative purchasing, and energy management.

Provision of Educational Services in Massachusetts

Massachusetts has 350 separate school districts.[104] Most children attend school in the school district where they live, or home district. These districts are sometimes referred to as local or municipal school districts. Each local district is operated under the supervision of a superintendent and a local school committee, whose members are either elected by the voters or appointed by the city's mayor.[105]

A second group of school districts are regional districts that serve two or more towns. A regional school district can offer all grades (preK-12), just certain grades (for example, just elementary grades or just high school), or just certain types of instruction (for example, vocational and technical programs). Regional districts are governed by a regional school committee, whose members are either elected or appointed as provided in state law.[106]

A few towns neither operate their own school district nor are members of a regional school district; some operate a partial school program. In these cases, the town is required to have an agreement with a nearby school district, under which the town pays tuition to that district to educate its students.[107]

The median size of a Massachusetts school district is approximately 2,000 to 2,499 students, while the modal district size is between 2,500 and 4,999 students. The breakdown of school districts by size in Massachusetts, from the 244 districts that reported their size, is as follows: 47 districts serve less than 599 students; 157 districts serve between 600 and 4,999 students; 37 districts serve between 5,000 and 24,999; and 3 districts serve more than 25,000 students.[108]

Alternative learning Options

In order to provide students with the opportunity to receive an education meeting their needs and goals, the state offers a range of alternative learning options, including: alternative education, career/vocation technical education, charter schools, GED programs, educational collaboratives, private SPED placement, and school choice.[109] This report provides an overview of school choice, career/vocation technical education, charter schools, and education collaboratives.

Inter-district School Choice Program

The inter-district school choice program allows a parent to enroll his or her child in a school district that is not the child's home district. Because of space limitations, not all school districts accept out-of-district students under this program. Every year the school committee in each school district decides whether it will accept new enrollments and, if so, in what grades. For each student accepted to an out-of-town public school, the sending district provides funding to the receiving district of an amount equivalent to 75% of the receiving district's previous fiscal year's operating cost per full-time equivalent pupil, or up to $5,000.[110] During FY06 there were

[104] National Center for Education Statistics, *Digest of Education Statistics*, 2006, http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007017.
[105] http://finance1.doe.mass.edu/schoice/choice_guide.html. See also http://profiles.doe.mass.edu/home.asp?mode=ot&view=&mcasyear=&ot=5&o=0
[106] http://finance1.doe.mass.edu/schoice/choice_guide.html
[107] http://profiles.doe.mass.edu/home.asp?mode=ot&view=&mcasyear=&ot=5&o=0
[108] http://nces.ed.gov/Pubs2003/Overview03/tables/talbe_A5_1.asp
[109] http://www.doe.mass.edu/FamComm/
[110] The cost for each special education pupil is paid in full by the sending district. That amount is determined using the same rate methodology for specific services as is used in the special education circuit-breaker program.

9,738 full-time equivalent pupils participating from 150 receiving districts and 267 sending districts, with total tuition amounting to $55,512,844.[111]

Vocational Technical Education Programs

In grades 9-12, students may choose to participate in vocational technical education programs, such as automotive technology, culinary arts, or design and visual communications, in preparation for a future career.

Several school districts offer vocational technical education programs in grades 9-12 within the district itself, however most cities and towns join a regional vocational school district in order to offer vocational technical education programs. If a student would like to attend a vocational technical education program other than the one in his or her home district or the regional vocational district to which his or her town belongs, and that school does not accept school choice students, the student may apply for admission, under the Chapter 74 non-resident option, to any vocational technical high school or other high school in the state that offers the program. To enroll through this option, the student must meet the school's admissions criteria.

Charter Schools

Massachusetts became the fourth state to allow charter schools, with the passage of the Education Reform Act of 1993. Charter Schools were established to encourage innovative educational practices, provide parents and students greater choice in public education, and to provide models for replication in other public schools. These schools are public schools that operate under five-year charters granted by the Board of Education. Each charter school is an independent public school governed by a board of trustees.

Two main types of charter schools exist in Massachusetts: Commonwealth charter schools and Horace Mann charter schools. A Commonwealth charter school is a public school that operates independent of any school committee. For each student enrolled, a Commonwealth charter school receives a sum from the state equal to the average cost per student in the school district in which that student resides. The state then deducts the same amount from the sending district's state aid. School districts receive additional funds that fully or partially reimburse them for funds provided to Commonwealth charter schools.

Horace Mann charter schools, the second type of charter school, are public schools or part of a public school that operate under a charter that must receive the approval of the local school committee and the local collective bargaining agent. Horace Mann charter schools are funded directly by the school district in which the school is located.[112]

During the 2006-2007 school year, the state department of education reports that 59 charter schools – 51 Commonwealth and 8 Horace Mann charter schools – were in operation throughout the state.[113] Three additional charters have been approved but were not yet open.[114]

Educational Collaboratives

The state Department of Education defines educational collaboratives as follows:

[111] http://finance1.doe.mass.edu/schoice/choice06.html
[112] http://www.mass.gov/mgis/schools.htm
[113] http://profiles.doe.mass.edu/charter.asp; http://www.doe.mass.edu/charter/factsheet.pdf
[114] http://profiles.doe.mass.edu/charter.asp; http://www.doe.mass.edu/charter/factsheet.pdf

> Educational Collaboratives provide inter-district services to students with handicaps, gifted and talented students, students in need of vocational/occupational training, and to regular education students seeking enriched experiences outside the classroom setting.[115]

Please see page 14 in this report for background and growth information on educational collaboratives in Massachusetts.

[115] http://www.doe.mass.edu/FamComm/f_alted.html

A Review of Relevant Berkshire County Data

Berkshire County is home to approximately 131,000 residents and has a population density of approximately 140 people per square mile in its 931 square mile area. The municipalities of Berkshire County range in size from the City of Pittsfield, with an estimated population of 43,497 in 2006, to the Town of Mount Washington, with a population of 138.[116]

In order to help assess and plan for the potential future educational needs of the region, it is helpful to explore various characteristics of Berkshire County and how they might influence future demand for K-12 educational services. The focus of this section is on analyzing population trends, various school district background characteristics, educational expenditures, and quality of student achievement.

Population Trends

An examination of the region's population trends is important for predicting future educational needs. When analyzing the population trends in Berkshire County, it is important to consider total population changes as well as the percentage changes in the total population. Since many Berkshire County towns have small populations, examining only percentage changes can be misleading. As shown in Table 3 below, between 1970 and 2000, Berkshire County's population declined by approximately 14,000 persons, or 10%. This is in contrast to the 11.6% growth in Massachusetts' population during that same period. The change in population was distributed unevenly throughout the region. Several communities experienced large increases in their populations, while others witnessed large decreases. The Berkshire County towns that experienced the greatest growth between 1970 and 2000 were Peru (220.1%), Mount Washington (150. 0%), Savoy (118.9%), Becket (88.9%), and Windsor (87.0%). Sheffield had the largest total increase in its population (961 people) of any town in the county followed by Becket (826 people). During the same period of time, 10 communities lost population according to the U.S. Census figures (as of April 1): Adams (-25.2%), Clarksburg (-15.1%), Dalton (-8.2%), Great Barrington (-0.2%), Lee (-6.8%), Lenox (-12.5%), North Adams (-23.5%), Pittsfield (-19.7%), Stockbridge (-1.5%), and Williamstown (-0.4%). The town of Great Barrington lost the fewest people (12 people) and the city of Pittsfield lost the greatest (11,233 people). The population changes between 1970 and 2000 for each Berkshire municipality are detailed in Table 3.

[116] U.S. Census Bureau, 2006

Table 3
Population for Berkshire County, 1970 to 2000

Community	1970	1980	1990	2000	1970-2000	
					Change	Percent Change
Adams	11,772	10,381	9,445	8,809	-2963	-25.0
Alford	302	394	418	399	97	32.1
Becket	929	1,339	1,481	1,755	826	88.9
Cheshire	3,006	3,124	3,479	3,401	395	13.1
Clarksburg	1,987	1,871	1,745	1,686	-301	-15.1
Dalton	7,505	6,797	7,155	6,892	-613	-8.2
Egremont	1,138	1,311	1,229	1,345	207	18.2
Florida	672	730	742	676	4	0.6
Great Barrington	7,537	7,405	7,725	7,525	-12	-0.2
Hancock	675	643	628	721	46	6.8
Hinsdale	1,588	1,707	1,959	1,872	284	17.9
Lanesborough	2,972	3,131	3,032	2,994	22	0.7
Lee	6,426	6,247	5,849	5,987	-439	-6.8
Lenox	5,804	6,523	5,069	5,077	-727	-12.5
Monterey	600	818	805	936	336	56.0
Mount Washington	52	93	135	130	78	150.0
New Ashford	183	159	192	247	64	35.0
New Marlborough	1,031	1,160	1,240	1,494	463	44.9
North Adams	19,195	18,063	16,797	14,681	-4514	-23.5
Otis	820	963	1,073	1,365	545	66.5
Peru	256	633	779	821	565	220.1
Pittsfield	57,020	51,974	48,622	45,787	-11,233	-19.7
Richmond	1,461	1,659	1,677	1,604	143	9.8
Sandisfield	547	720	667	824	277	50.6
Savoy	322	644	634	705	383	118.9
Sheffield	2,374	2,743	2,910	3,335	961	40.5
Stockbridge	2,312	2,328	2,408	2,276	-36	-1.5
Tyringham	234	344	369	350	116	49.6
Washington	411	587	615	544	133	32.4
West Stockbridge	1,354	1,280	1,483	1,416	62	4.6
Williamstown	8.454	8,741	8,220	8,424	-30	-0.4
Windsor	468	598	770	875	407	87.0
Berkshire County	**149,407**	**145,110**	**139,352**	**134,953**	**-14,454**	**-9.7**
Massachusetts	5,689,170	5,737,037	6,016,425	6,349,097	659,927	11.6

Source: U.S. Census Bureau, Population Division

Between 2000 and 2006, it is estimated that half of the communities in Berkshire County experienced a loss in population, and the population of the county as a whole declined 2.8% (3,704 people). The 2006 population estimates for all communities in the region are provided in Table 4. Over the six-year period, Pittsfield's population declined an estimated 4.8% (2,212 people) and accounts for about 60% of the total population loss in Berkshire County. Of the fifteen communities that are estimated to have attracted residents between 2000 and 2006, Hancock experienced the greatest population gain (+312 people).

Table 4

Population for Berkshire County, 2000 to 2006

Community	2000	2001	2002	2003	2004	2005	2006	2000-2006	
								Change	Percent Change
Adams	8,791	8,698	8,627	8,567	8,498	8,451	8,371	-420	-4.8
Alford	399	396	393	393	392	399	398	-1	-0.3
Becket	1,754	1,742	1,745	1,761	1,773	1,785	1,799	45	2.6
Cheshire	3,401	3,390	3,373	3,363	3,351	3,355	3,343	-58	-1.7
Clarksburg	1,685	1,678	1,676	1,675	1,665	1,662	1,652	-33	-2.0
Dalton	6,882	6,822	6,778	6,758	6,727	6,695	6,657	-225	-3.3
Egremont	1,345	1,341	1,339	1,343	1,346	1,355	1,362	17	1.3
Florida	675	670	666	664	660	666	676	1	0.1
Great Barrington	7,523	7,492	7,469	7,432	7,423	7,436	7,437	-86	-0.1
Hancock	722	724	772	945	1,011	1,025	1.034	312	43.2
Hinsdale	1,870	1,854	1,843	1,834	1,822	1,810	1,792	-78	-4.2
Lanesborough	2,993	2,977	2,969	2,966	2,961	2,951	2,921	-72	-2.4
Lee	5,981	5,936	5,901	5,900	5,882	5,881	5,858	-123	-2.1
Lenox	5,095	5,151	5,153	5,176	5,155	5,152	5,159	64	1.3
Monterey	937	938	943	949	955	961	963	26	2.8
Mount Washington	130	130	130	131	133	135	138	8	6.2
New Ashford	248	249	247	245	245	247	248	0	0.0
New Marlborough	1,497	1,502	1,495	1,495	1,512	1,524	1,533	36	2.4
North Adams	14,651	14,501	14,399	14,281	14,150	14,001	13,842	-809	-5.5
Otis	1,365	1,358	1,365	1,370	1,381	1,392	1,392	27	2.0
Peru	820	813	809	815	822	837	846	26	3.1
Pittsfield	45,709	45,286	44,925	44,608	44,224	43,832	43,497	-2212	-4.8
Richmond	1,605	1,604	1,609	1,619	1,628	1,619	1,604	-1	0.0
Sandisfield	824	821	822	822	822	831	840	16	1.9
Savoy	706	706	711	716	719	725	729	23	3.3
Sheffield	3,336	3,328	3,331	3,356	3,356	3,363	3,367	31	0.9
Stockbridge	2,274	2,261	2,255	2,250	2,247	2,255	2,259	-15	-0.7
Tyringham	351	355	361	358	355	352	348	-3	-0.9
Washington	544	540	540	540	542	545	548	4	0.7
West Stockbridge	1,420	1,431	1,437	1,446	1,449	1,451	1,459	39	2.7
Williamstown	8,414	8,341	8,313	8,294	8,264	8,233	8,189	-225	-2.7
Windsor	874	866	860	857	853	857	856	-18	-2.1
Berkshire County	**134,821**	**133,901**	**133,256**	**132,929**	**132,323**	**131,783**	**131,117**	**-3704**	**-2.7**

Source: U.S. Census Bureau, Population Division

The Berkshire Regional Planning Commission projects that the population of Berkshire County will reach 146,462 by 2030, a growth of 8.5% (11,509 people) from 2000. The pattern of growth is expected to be distributed unevenly as was the case between 1970 and 2000. Between 2000 and 2030, the greatest total population increases in the region are expected in the towns of Cheshire and Great Barrington, which are each forecasted to grow by more than 1,000 residents. The towns of Sheffield and Richmond are expected to increase by 968 and 876 people, respectively. The two cities in Berkshire County, North Adams (-503 people) and Pittsfield (-434 people), and the town of Adams (-253 people) are expected to lose population between 2000 and 2030. It is important to note that these communities are expected to lose fewer residents than they did during the previous thirty years. Furthermore, the population loss for these communities is projected through 2020 only; these communities are expected to gain residents between 2020 and 2030 but not enough to overcome the expected population loss they will experience between 2000 and 2020. The population forecasts out to 2030 for each community are provided in Table 5.

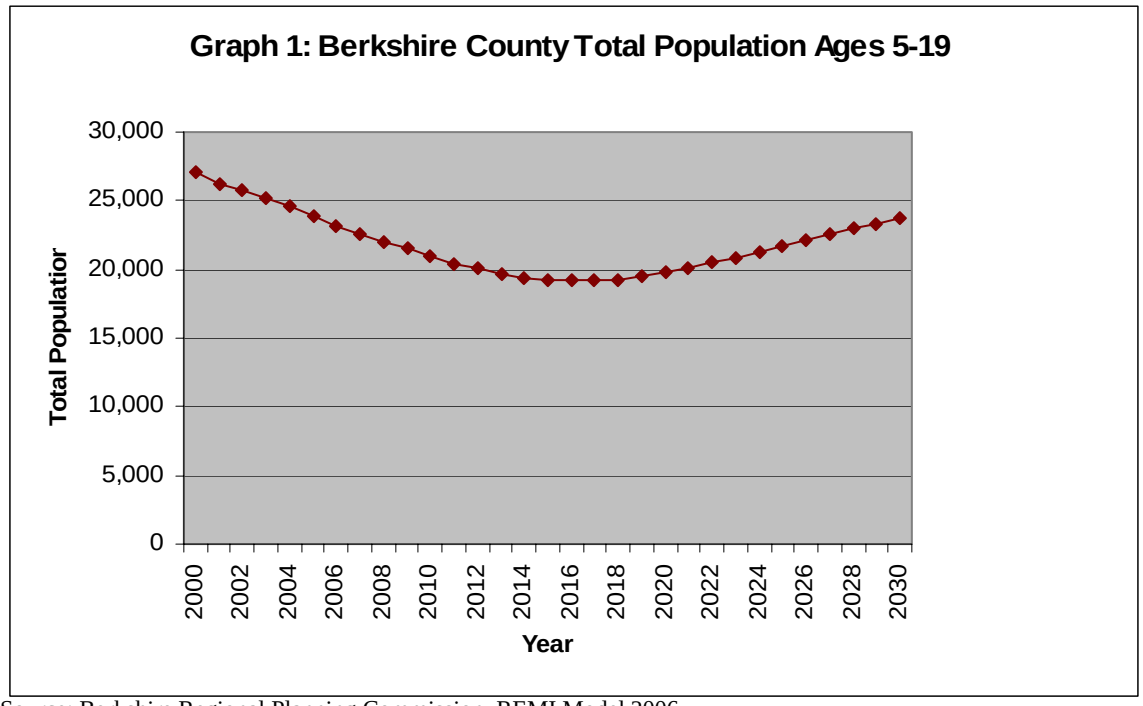
Table 5
Estimated Population for Berkshire County, 2000 to 2030

Community	2000	2010	2020	2030	2000-2030	
					Change	Percent Change
Adams	8,809	8,292	8,276	8,556	-253	-2.9
Alford	399	436	490	564	165	41.4
Becket	1,755	1,710	1,946	2,268	513	29.2
Cheshire	3,401	3,654	4.064	4,555	1154	33.9
Clarksburg	1,686	1,628	1,683	1,798	112	6.6
Dalton	6,892	6,673	6,915	7,402	510	7.4
Egremont	1,345	1,393	1,530	1,726	381	28.3
Florida	676	681	732	813	137	20.3
Great Barrington	7,525	7,395	7,851	8,605	1080	14.4
Hancock	721	737	819	936	215	29.8
Hinsdale	1,872	1,864	2,018	2,252	380	20.3
Lanesborough	2,994	2,971	3,116	3,368	374	12.5
Lee	5,987	5,858	6,169	6,699	712	11.9
Lenox	5,077	5,189	5,302	5,419	342	6.7
Monterey	936	976	1,114	1,303	367	39.2
Mount Washington	130	135	156	184	54	41.5
New Ashford	247	234	264	304	57	23.1
New Marlborough	1,494	1,577	1,770	2,039	545	36.5
North Adams	14,681	13,863	13,774	14,178	-503	-3.4
Otis	1,365	1,375	1,593	1,885	520	38.1
Peru	821	899	1,061	1,274	453	55.2
Pittsfield	45,787	43,128	43,255	45,353	-434	-0.9
Richmond	1,604	1,877	2,131	2,480	876	54.6
Sandisfield	824	810	926	1,093	269	32.6
Savoy	705	718	819	957	252	35.7
Sheffield	3,335	3,455	3,800	4,303	968	29.0
Stockbridge	2,276	2,236	2,350	2,550	274	12.0
Tyringham	350	362	401	457	107	30.6
Washington	544	629	710	823	279	51.3
West Stockbridge	1,416	1,390	1,485	1,638	222	15.7
Williamstown	8,424	8,496	9,026	9,535	1111	13.2
Windsor	875	858	979	1,144	269	30.7
Berkshire County	**134,953**	**131,499**	**136,526**	**146,462**	**11,509**	**8.5**

Source: Berkshire Regional Planning Commission

The School-Aged Population

Between 2000 and 2030, the Berkshire Regional Planning Commission projects the number of children ages 5-19 in Berkshire County to decline 12.2% (-3,303 school-aged persons – from 27,026 in 2000 to 23,723 in 2030). The population projections predict a declining school-aged population through 2016 in the county (19,171 school-aged persons in 2016). Thus, note the u-shaped curve in Graph 1 below. Unfortunately, the population projections broken down by age are not currently available at the town or district level.



Source: Berkshire Regional Planning Commission, REMI Model 2006

School District Background Characteristics

There are 48 traditional public schools serving the 32 communities within Berkshire County. One charter school, the Berkshire Arts and Technology Charter (BART), operates in Berkshire County in the town of Adams. Data for BART are not included in educational or financial analyses since the focus of this report is on the public school districts operating traditional public schools in the region. The traditional public schools are located in 21 of the 32 communities, operated by eighteen school districts, and managed by fourteen superintendents. Seven communities (Clarksburg, Florida, Hancock, Otis, Richmond, Sandisfield, and Savoy) have tuition agreements with neighboring districts for provision of middle, and/or high school educational services.[117] Three towns do not operate a school district and thus tuition out all grades: Mt. Washington, New Ashford, and Tyringham.[118] In addition, fifteen Berkshire County school districts participate in the School Choice program, allowing students from other communities to attend the schools on a space available basis. Clarksburg, Florida, and Northern Berkshire Vocational Regional do not participate in this program.

Please see Table 6 for the count of schools by community and Table 7 on page 29 for the count of schools and grades served by district. In addition, please see descriptive maps in Appendix B.

[117] Otis and Sandisfield are not listed under the municipal districts that tuition students to other districts; they formed a regional academic district, Farmington Regional, in 1992. Farmington Regional has tuition agreements with Berkshire Hills and Lenox. See http://finance1.doe.mass.edu/regional/list_tuition.xls and http://profiles.doe.mass.edu/home.asp?mode=o&ot=5&o=2149
[118] http://finance1.doe.mass.edu/regional/list_tuition.xls

Table 6
Count of Public Schools by Community[119]

Town	# of Public Schools
Adams	2
Becket	1
Cheshire	2
Clarksburg	1
Dalton	3
Egremont	1
Florida	1
Great Barrington	3
Hancock	1
Hinsdale	1
Lanesborough	1
Lee	2
Lenox	2
New Marlborough	1
North Adams	6
Otis	1
Pittsfield	12
Richmond	1
Savoy	1
Sheffield	3
Williamstown	2
Total	**48**

Source: MassGIS: http://www.mass.gov/mgis/schools.htm. Based on listings from the MA DOE website as of August 3, 2006. Calculations by the UMass Donahue Institute

The eighteen public school districts operating in Berkshire County are divided into eleven local and seven regional school districts.

Local School Districts

The local school districts include Clarksburg, Florida, Hancock, Lanesborough, Lee, Lenox, North Adams, Pittsfield, Richmond, Savoy, and Williamstown. Four of these districts, Lee, Lenox, Pittsfield, and North Adams, provide complete K-12 educational services within their borders. Seven local school districts are one-school districts serving K-5, K-6 or K-8; they are Clarksburg, Florida, Savoy, Hancock, Richmond, Lanesborough, and Williamstown. One superintendent manages Clarksburg, Florida, and Savoy and another manages Hancock, Richmond, and Lanesborough. Williamstown has its own superintendent.

[119] Does not include charter schools or Special Education Schools.

Regional School Districts

Six of the seven regional school districts operating within the county were established in the 1950s or 1960s. The exception, Farmington River Regional school district, was formed in 1992 to serve the communities of Otis and Sandisfield in grades K-6. Six regional school districts (Adams-Cheshire Regional, Berkshire Hills Regional, Central Berkshire Regional, Farmington River Regional, Mount Greylock Regional, and South Berkshire Regional) provide elementary, middle, and/or high school facilities and programs serving more than 20 communities. Northern Berkshire Vocational Regional provides high school level technical training to students from its seven member communities only, which include: Adams, Clarksburg, Florida, North Adams, Savoy, and Williamstown in Berkshire County and Monroe in Franklin County.

Please see Table 7 for the count of public schools and grades served in the eighteen operating public school districts of Berkshire County.

Educational Collaboratives

One educational collaborative exists in the county. In 1976, four districts – Berkshire Hills, Lee, Lenox, and Southern Berkshire Regional –formed the South Berkshire Educational Collaborative (SBEC). The SBEC provides the following programs and services to its member districts:

- acts as the fiscal agent and coordinator of occupational therapy and physical therapy services for member schools, as well as several other services including a Virtual High School project and Adult Basic Education[120]
- provides transportation between schools for brokered programs and Special Education
- arranges for professional development for teachers in the 4 school districts[121]

The SBEC notes that grant writing is essential, and funding for the programs that it provides is primarily provided through these grants.[122] Data were not collected to determine the cost savings, if any, to the four districts in Berkshire County.

[120] http://www.berkshirejobs.com/public/viewemployer.php3?EID2=502
[121] http://www.volunteersolutions.org/mass-service/org/24110383.html
[122] http://www.volunteersolutions.org/mass-service/org/24110383.html

Table 7
Count of Public Schools and Grades Served by District in FY06

District	Grades Served	# of Public Schools
Adams-Cheshire Regional	K-12	4
Berkshire Hills Regional	K-12	3
Central Berkshire Regional	K-12	5
Clarksburg	K-8	1
Farmington River Regional	K-6	1
Florida	K-8	1
Hancock	K-6	1
Lanesborough	K-6	1
Lee	K-12	2
Lenox	K-12	2
Mount Greylock Regional	7-12	1
North Adams	K-12	5
Northern Berkshire Vocational Regional	9-12	1
Pittsfield	K-12	12
Richmond	K-8	1
Savoy	K-5	1
Southern Berkshire Regional	K-12	5
Williamstown	K-6	1
Total		**48**

Source: MassGIS: http://www.mass.gov/mgis/schools.htm. Based on listings from the MA DOE website as of August 3, 2006. Calculations by the UMass Donahue Institute.

Size of Districts

In FY06, district enrollments range from a low of 44 pupils in Hancock to a high of 6,472 pupils in Pittsfield. There are six very small districts with fewer than 200 students operating in Berkshire County: Clarksburg (196 students), Florida (115 students), Hancock (44 students), Richmond (177 students), Savoy (76 students), and Farmington River (171 students). Please note that all of these districts operate one school only and serve grades K-5, K-6, or K-8.

There are three small districts with between 200 and 599 students: Lanesborough (303 students), Williamstown (484 students), and Northern Berkshire Vocational Regional (491 students). Similar to the very small districts in the county, these small districts operate one school only. The first two districts provide K-6 educational services and the latter serves grades 9-12. None of these districts provide complete middle level education.

There are eight medium districts with between 600 and 4,999 students: Lee (895 students), Lenox (850 students), North Adams (1,819 students), Adams-Cheshire (1,687 students), Berkshire Hills (1,466 students), Central Berkshire (2,167 students), Mount Greylock (667 students), and Southern Berkshire (914 students). Seven of these districts provide complete K-12 educational services; the exception, Mount Greylock Regional, a one school district, provides services to students in grades 7-12.

Pittsfield (6,352 students) is the only large district (5,000 students or more) operating in Berkshire County. There are no extra-large districts (15,000 students or more) or super-large districts (40,000 students or more) in the county.[123]

As shown in Table 8, Berkshire County lost 5.9% (-1,193 students) of its school enrollment between FY03 and FY06; Massachusetts lost 1.1% (-10,942 students) of its school enrollment. The districts of Pittsfield (-246 students) and North Adams (-305 students) experienced the largest decline in enrollment during these years. These districts serve communities estimated to have experienced the greatest population loss between 2000 and 2006. They also had the highest high school four-year dropout rates for their Classes of 2006.[124] Only three districts, Savoy (+21 students), Lenox (+25 students) and Northern Berkshire Vocational Regional (+70 students), experienced a rise in student enrollment during this time frame. While the towns of Savoy and Lenox are estimated to have experienced a small increase in population, five of the seven member communities of Northern Berkshire Vocational did not.

[123] National Center for Education Statistics (NCES) categories. The other district categories of very small, small, medium, and large were taken from Arizona Office of the Auditor General (OAG) as reported in Vicki Murray, "Competition or Consolidation? The School District Consolidation Debate Revisited," *Goldwater Institute Policy Report*, No. 189, January 12, 2004.

[124] http://profiles.doe.mass.edu/gradrates.aspx

Table 8
District Enrollments

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Clarksburg	211	202	199	196	-15	-7.1
Florida	115	119	111	115	0	0.0
Hancock	57	50	53	44	-13	-22.8
Lanesborough	307	296	297	303	-4	-1.3
Lee	899	875	873	895	-4	-0.4
Lenox	825	835	853	850	25	3.0
North Adams	2,124	2,077	1,997	1,819	-305	-14.4
Pittsfield	6,718	6,605	6,496	6,472	-246	-3.7
Richmond	190	205	195	177	-13	-6.8
Savoy	55	56	71	76	21	38.2
Williamstown	548	542	507	484	-64	-11.7
Adams-Cheshire	1,871	1,847	1,782	1,687	-184	-9.8
Berkshire Hills	1,519	1,415	1,391	1,466	-53	-3.5
Central Berkshire	2,316	2,286	2,210	2,167	-149	-6.4
Farmington River	178	188	190	171	-7	-3.9
Mount Greylock	801	768	730	667	-134	-16.7
Southern Berkshire	1,026	1,020	977	914	-112	-10.9
Northern Berkshire Vocational	427	440	468	491	70	16.6
Berkshire County	**20,187**	**19,826**	**19,400**	**18,994**	**-1,193**	**-5.9**
Massachusetts	983,313	980,818	975,911	972,371	-10,942	-1.1

Source: Massachusetts Department of Education Indicators Report

Selected Demographics and Special Populations in School Districts

Non-White Enrollment

With respect to school district student composition, districts in Berkshire County have a lower percentage of non-white students than the state of Massachusetts as a whole. As shown in Tables 9 and 10, between FY03 and FY06, the percentage of non-white students rose 3.4 percentage points in the county and 2.7 percentage points in the state to percent totals of 11.7% and 27.6%, respectively. In FY06, the Berkshire County school districts with the largest non-white student populations were those serving students in the urban districts of Pittsfield (1,243

non-white students) and North Adams (259 non-white students). The only districts to experience a decline in both the number and percentage of non-white students between FY03 and FY06 were Berkshire Hills and Northern Berkshire Vocational Regional. Please see Tables 9 and 10 for more detail. As is the case with all tables in this section of the report, districts are arranged from smallest to largest in terms of student enrollment in FY06, which corresponds to the 2005-2006 school year.

Table 9
Number of Non-White Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Hancock	0	1	0	1	1	--
Savoy	4	4	3	4	0	0.0
Florida	0	0	0	2	2	--
Farmington River	8	12	11	11	3	37.5
Richmond	1	1	2	5	4	400.0
Clarksburg	0	0	2	5	5	--
Lanesborough	17	16	14	17	0	0.0
Williamstown	53	58	49	59	6	11.3
Northern Berkshire Vocational	16	9	11	12	-4	-25.0
Mount Greylock	56	59	48	87	31	55.4
Lenox	40	38	40	54	14	35.0
Lee	94	103	103	105	11	11.7
Southern Berkshire	37	43	51	49	12	32.4
Berkshire Hills	100	97	96	90	-10	-10.0
Adams-Cheshire	86	92	103	97	11	12.8
North Adams	189	215	221	259	70	37.0
Central Berkshire	60	72	69	123	63	105.0
Pittsfield	914	1,048	1,1108	1,243	329	34.0
Berkshire County	**1,675**	**1,867**	**1,932**	**2,223**	**548**	**32.7**
Massachusetts	244,845	249,762	253,695	271,394	26,549	10.8

Source: Massachusetts Department of Education Indicators Report

Table 10
Percent of Non-White Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change in Percentage Points	Percent Change
Hancock	0.0	2.0	0.0	2.3	2.3	--
Savoy	7.3	7.1	5.6	6.6	-0.7	-9.6
Florida	0.0	0.0	0.0	1.7	1.7	--
Farmington River	4.5	6.9	6.3	6.4	1.9	42.2
Richmond	0.5	0.5	1.0	2.8	2.3	460.0
Clarksburg	0.0	0.0	1.0	2.6	2.6	--
Lanesborough	5.5	5.1	4.7	5.6	0.1	1.8
Williamstown	9.7	10.5	8.9	10.7	1.0	10.3
Northern Berkshire Vocational	3.7	2.0	2.6	2.9	-0.8	-21.6
Mount Greylock	7.0	7.4	6.0	10.8	3.8	54.3
Lenox	4.8	4.6	4.8	6.5	1.7	35.4
Lee	10.5	11.5	11.5	11.7	1.2	11.4
Southern Berkshire	3.6	4.2	5.0	4.8	1.2	33.3
Berkshire Hills	6.6	6.4	6.3	5.9	-0.7	-10.6
Adams-Cheshire	4.6	4.9	5.5	5.2	0.6	13.4
North Adams	8.9	10.1	10.4	12.2	3.3	37.1
Central Berkshire	2.6	3.1	3.0	5.3	2.7	103.8
Pittsfield	13.6	15.6	16.5	18.5	4.9	36.0
Berkshire County	**8.3**	**9.4**	**10.0**	**11.7**	**3.4**	**40.9**
Massachusetts	24.9	25.4	25.8	27.6	2.7	10.8

Source: Massachusetts Department of Education Indicators Report

Low-Income Enrollment

Both the number and percentage of low-income students grew in the state as a whole and in Berkshire County school districts between FY03 and FY06.[125] As shown in Tables 11 and 12, between FY03 and FY06, the change in the number and percentage of low-income students in the county outpaced the change in the state as a whole. Berkshire County school districts gained 655 low-income students during this period, an increase of 13.2%. More than three-quarters of this gain in population occurred in the district of Pittsfield (+543 low-income students). Seven districts, however, experienced a decline in the number of their low-income student population, totaling a loss of 169 students: Clarksburg (-3 students) Hancock (-3 students), Lanesborough (-4 students), North Adams (-73 students), Adams-Cheshire (-17 students), Berkshire Hills (-39 students), and Southern Berkshire (-30 students).

[125] The low-income selected student population indicates the percent of enrollment who meet any one of the following definitions of low income: the student is eligible for free or reduced price lunch; or the student receives Transitional Aid to Families benefits; or the student is eligible for food stamps.

Table 11
Number of Low-Income Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Hancock	9	7	10	6	-3	-33.3
Savoy	0	0	0	1	1	--
Florida	20	26	15	30	10	50.0
Farmington River	34	42	50	56	22	64.7
Richmond	4	5	3	11	7	175.0
Clarksburg	47	38	41	44	-3	-6.4
Lanesborough	33	24	29	29	-4	-12.1
Williamstown	64	82	66	71	7	10.9
Northern Berkshire Vocational	128	120	142	142	14	10.9
Mount Greylock	78	91	94	128	50	64.1
Lenox	41	31	42	52	11	26.8
Lee	160	200	201	234	74	46.3
Southern Berkshire	192	233	199	162	-30	-15.6
Berkshire Hills	279	250	289	240	-39	-14.0
Adams-Cheshire	531	541	529	514	-17	-3.2
North Adams	872	878	820	799	-73	-8.4
Central Berkshire	369	451	409	454	85	23.0
Pittsfield	2,084	2,375	2,334	2,627	543	26.1
Berkshire County	**4,945**	**5,394**	**5,273**	**5,600**	**655**	**13.2**
Massachusetts	257,368	266,294	270,660	274,524	17,156	6.7

Source: Massachusetts Department of Education Indicators Report

Table 12
Percent of Low-Income Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change in Percentage Points	Percent Change
Hancock	15.8	14.0	18.9	13.6	-2.2	-13.9
Savoy	0.0	0.0	0.0	1.3	1.3	--
Florida	17.4	21.8	13.5	26.1	8.7	50.0
Farmington River	19.1	22.3	26.3	32.7	13.6	71.2
Richmond	2.1	2.4	1.5	6.2	4.1	195.2
Clarksburg	22.3	18.8	20.6	22.4	0.1	0.4
Lanesborough	10.7	8.1	9.8	9.6	-1.1	-10.3
Williamstown	11.7	15.1	13.0	14.7	3.0	25.6
Northern Berkshire Vocational	30.0	27.3	30.3	28.9	-1.1	-3.7
Mount Greylock	9.7	11.8	12.9	19.2	9.5	97.9
Lenox	5.0	3.7	4.9	6.1	1.1	22.0
Lee	17.8	22.9	23.0	26.1	8.3	46.6
Southern Berkshire	18.7	22.8	20.4	17.7	-1.0	-5.3
Berkshire Hills	18.4	17.7	20.8	16.4	-2.0	-10.9
Adams-Cheshire	28.4	29.3	29.7	30.5	2.1	7.4
North Adams	41.1	42.3	41.1	43.9	2.8	6.8
Central Berkshire	15.9	19.7	18.5	21.0	5.1	32.1
Pittsfield	31.0	36.0	35.9	40.6	9.6	31.0
Berkshire County	**24.5**	**27.2**	**27.2**	**29.5**	**5.0**	**20.4**
Massachusetts	26.2	27.2	27.7	28.2	2.0	7.6

Source: Massachusetts Department of Education Indicators Report

Limited English Proficiency Enrollment

As shown in Tables 13 and 14, between FY03 and FY06, the number and percentage of limited English proficiency (LEP) students enrolled in Berkshire County schools increased. Berkshire County schools gained 117 LEP students during this period. The district of Pittsfield accounts for about 86% of this growth (+101 LEP students). In FY06, the percentage of LEP students enrolled in public schools in Berkshire County represented 1.7% of total student population, an increase of six-tenths of a percentage-point from FY03.

Table 13
Number of Limited English Proficiency Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Hancock	0	0	0	0	0	-
Savoy	0	0	0	0	0	-
Florida	0	0	0	0	0	-
Farmington River	0	0	0	0	0	-
Richmond	0	0	0	0	0	-
Clarksburg	0	0	0	0	0	-
Lanesborough	1	1	0	0	-1	-100.0
Williamstown	0	0	3	5	5	-
Northern Berkshire Vocational	0	0	0	0	0	-
Mount Greylock	0	0	0	1	1	-
Lenox	8	3	2	1	-7	-87.5
Lee	27	26	33	29	2	7.4
Southern Berkshire	0	2	6	3	3	-
Berkshire Hills	21	27	22	16	-5	-23.8
Adams-Cheshire	1	2	1	0	-1	-100.0
North Adams	23	35	41	30	7	30.4
Central Berkshire	0	0	2	12	12	-
Pittsfield	132	166	239	233	101	76.5
Berkshire County	**213**	**262**	**349**	**330**	**117**	**54.9**
Massachusetts	51,622	49,297	49,773	51,618	-4	-.01

Source: Massachusetts Department of Education Indicators Report

Table 14
Percent of Limited English Proficiency Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change in Percentage Points	Percent Change
Hancock	0.0	0.0	0.0	0.0	0.0	-
Savoy	0.0	0.0	0.0	0.0	0.0	-
Florida	0.0	0.0	0.0	0.0	0.0	-
Farmington River	0.0	0.0	0.0	0.0	0.0	-
Richmond	0.0	0.0	0.0	0.0	0.0	-
Clarksburg	1.0	0.4	0.2	0.1	-0.9	-90.0
Lanesborough	0.3	0.3	0.0	0.0	-0.3	-100.0
Williamstown	0.0	0.0	0.6	1.0	1.0	-
Northern Berkshire Vocational	0.0	0.0	0.0	0.0	0.0	-
Mount Greylock	0.0	0.0	0.0	0.1	0.1	-
Lenox	1.0	0.4	0.2	0.1	-0.9	-90.0
Lee	3.0	3.0	3.8	3.2	0.2	6.7
Southern Berkshire	0.0	0.2	0.6	0.3	0.3	-
Berkshire Hills	1.4	1.9	1.6	1.1	-0.3	-21.4
Adams-Cheshire	0.1	0.1	0.1	0.0	-0.1	-100.0
North Adams	1.1	1.7	2.1	1.6	0.5	45.5
Central Berkshire	0.0	0.0	0.1	0.6	0.6	-
Pittsfield	2.0	2.5	3.7	3.6	1.6	80.0
Berkshire County	**1.1**	**1.3**	**1.8**	**1.7**	**0.6**	**54.5**
Massachusetts	5.2	5.0	5.1	5.3	0.1	1.9

Source: Massachusetts Department of Education Indicators Report

Special Education Enrollment

Whereas the number of special education students increased 6.8% (+10,201 students) in Massachusetts between FY03 and FY06, the number declined 1.9% (-57 students) in Berkshire County. Nevertheless, six districts in the region experienced an increase in the number of students receiving special education services during this same period, ranging from a high of 155 additional special education students in Pittsfield to a low of one additional special education student in Hancock.

In FY06, 15.6% of the students attending schools in Berkshire County were students with special education needs. The percentage of special education students as a share of total students served by the region's public schools increased seven-tenths of a percentage point (4.7%) between FY03 and FY06. The number and percentage of students requiring special education services in each district are detailed in Tables 15 and 16, respectively.

Table 15
Number of Special Education Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Hancock	6	3	6	7	1	16.7
Savoy	10	2	3	5	-5	-50.0
Florida	11	14	17	16	5	45.5
Farmington River	31	33	37	27	-4	-12.9
Richmond	14	12	11	14	0	0.0
Clarksburg	21	19	18	19	-2	-9.5
Lanesborough	33	39	41	47	14	42.4
Williamstown	88	72	63	55	-33	-37.5
Northern Berkshire Vocational	85	97	107	99	14	16.5
Mount Greylock	97	103	97	93	-4	-4.1
Lenox	115	104	115	120	5	4.3
Lee	149	144	124	142	-7	-4.7
Southern Berkshire	171	160	145	113	-58	-33.9
Berkshire Hills	231	213	205	222	-9	-3.9
Adams-Cheshire	304	289	295	246	-58	-19.1
North Adams	356	313	335	266	-90	-25.3
Central Berkshire	362	361	358	381	19	5.2
Pittsfield	928	976	995	1,083	155	16.7
Berkshire County	**3,012**	**2,943**	**2,972**	**2,955**	**-57**	**-1.9**
Massachusetts	150,551	154,391	157,109	160,752	10,201	6.8

Source: Massachusetts Department of Education Indicators Report

Table 16
Percent of Special Education Students

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change in Percentage Points	Percent Change
Hancock	10.5	4.0	9.8	11.5	1.0	9.5
Savoy	18.2	3.6	4.2	6.6	-11.6	-63.7
Florida	9.6	11.8	15.3	13.9	4.3	44.8
Farmington River	17.4	17.6	19.4	15.8	-1.6	-9.2
Richmond	7.4	5.9	5.6	7.9	0.5	6.8
Clarksburg	10.0	9.4	9.0	9.7	-0.3	-3.0
Lanesborough	10.7	9.8	13.8	15.5	4.8	44.9
Williamstown	16.1	13.3	12.4	11.4	-4.7	-29.2
Northern Berkshire Vocational	19.9	22.0	22.8	20.1	0.2	1.0
Mount Greylock	12.1	13.4	13.3	13.8	1.7	14.0
Lenox	13.9	12.5	13.5	14.1	0.2	1.4
Lee	16.6	16.5	14.2	15.9	-0.7	-4.2
Southern Berkshire	16.7	15.7	14.8	12.3	-4.4	-26.3
Berkshire Hills	15.2	15.1	14.7	15.1	-0.1	-0.7
Adams-Cheshire	16.2	15.6	16.5	14.5	-1.7	-10.5
North Adams	16.8	15.1	16.6	14.5	-2.3	-13.7
Central Berkshire	15.6	15.8	16.2	17.6	2.0	12.8
Pittsfield	13.8	14.8	15.2	16.6	2.8	20.3
Berkshire County	**14.9**	**14.8**	**15.3**	**15.6**	**0.7**	**4.7**
Massachusetts	15.3	15.7	15.9	16.5	1.2	7.8

Source: Massachusetts Department of Education Indicators Report

Educational Expenditures

Total expenditures made by the eighteen operating school districts in Berkshire County came to approximately $255 million in FY05.[126] This is a 6.9% increase from FY03 in non-inflation adjusted dollars (nominal dollars).[127] This included all types of expenditures by the school districts and other public elementary/secondary education agencies, including: expenditures for capital outlays for school construction and equipments, debt financing, and expenditures for programs outside of elementary/secondary education (such as adult education and community service programs). Since capital and debt service spending can vary greatly both within and between states for a variety of reasons, researchers tend to exclude these expenditures and consider only "current expenditures" when comparing school districts.

The variety in the types of school districts in Berkshire County (some districts are local while others are regional; some provide complete K-12 educational services while others are one-school districts providing elementary, middle, and/or high school education, including high school technical training) makes comparisons difficult.[128] A general overview will be provided, nonetheless, using FY03, FY04, and FY05 financial data that is publicly available through the National Center for Education Statistics (NCES) and the Massachusetts Department of Education (MA DOE). FY05 expenditure data were used as they were the most current data available at the time.

Current Expenditures

In FY05 about $234 million in current expenditures were made on public elementary and secondary educational services in Berkshire County.[129] This is a 7.5% increase from FY03 in non-inflation adjusted dollars.[130]

As shown in Table 17, Berkshire County spent an average of $12,093 in current expenditures for every pupil in membership in FY05. This represents an 11.8% ($1,280) increase in current expenditures per pupil over FY03 in non-inflation adjusted dollars. The state spent an average of $11,821 in current expenditures per pupil in FY05. Only one Berkshire district, Savoy, the only K-5 district in the county, spent less than $10,000 for each pupil in membership ($9,732). The median per pupil expenditure in Berkshire County was $12,102 in FY05, indicating that one-half of all districts had a current per pupil expenditure below this amount.

In FY05, the five districts with the lowest current expenditures per pupil were Savoy ($9,732), Adams-Cheshire ($10,875), Central Berkshire ($11,169), Pittsfield ($11,259), and Florida ($11,369). These districts are on the smaller and larger ends of the district size continuum in Berkshire County. The same is basically true for the five districts with the highest current expenditures per pupil, which were: Berkshire Hills ($14,462), Farmington River ($13,942), Richmond ($13,687), Mount Greylock ($13,679), and North Adams ($13,579). Mount Greylock, however, is mid-range in size of the Berkshire County school districts and serves grades 7-12.

[126] Total expenditures for public elementary and secondary education in FY05 were $255,073. See http://www.census.gov/govs/www/school.html
[127] Total expenditures for public elementary and secondary education in FY03 were $228,508. See http://www.census.gov/govs/www/school.html
[128] See National Center for Education Statistics, Statistics in Brief, Revenues and Expenditures by Public School Districts: School Year 1999-2000, (NCES 2003—407) for further explanation of problems with district-level analyses and comparisons, http://nces.ed.gov/pubs2003/2003407.pdf.
[129] Current expenditures for public elementary and secondary education in FY05 were $234,416. See http://www.census.gov/govs/www/school.html
[130] Current expenditures for public elementary and secondary education in FY03 were $218,135. See http://www.census.gov/govs/www/school.html

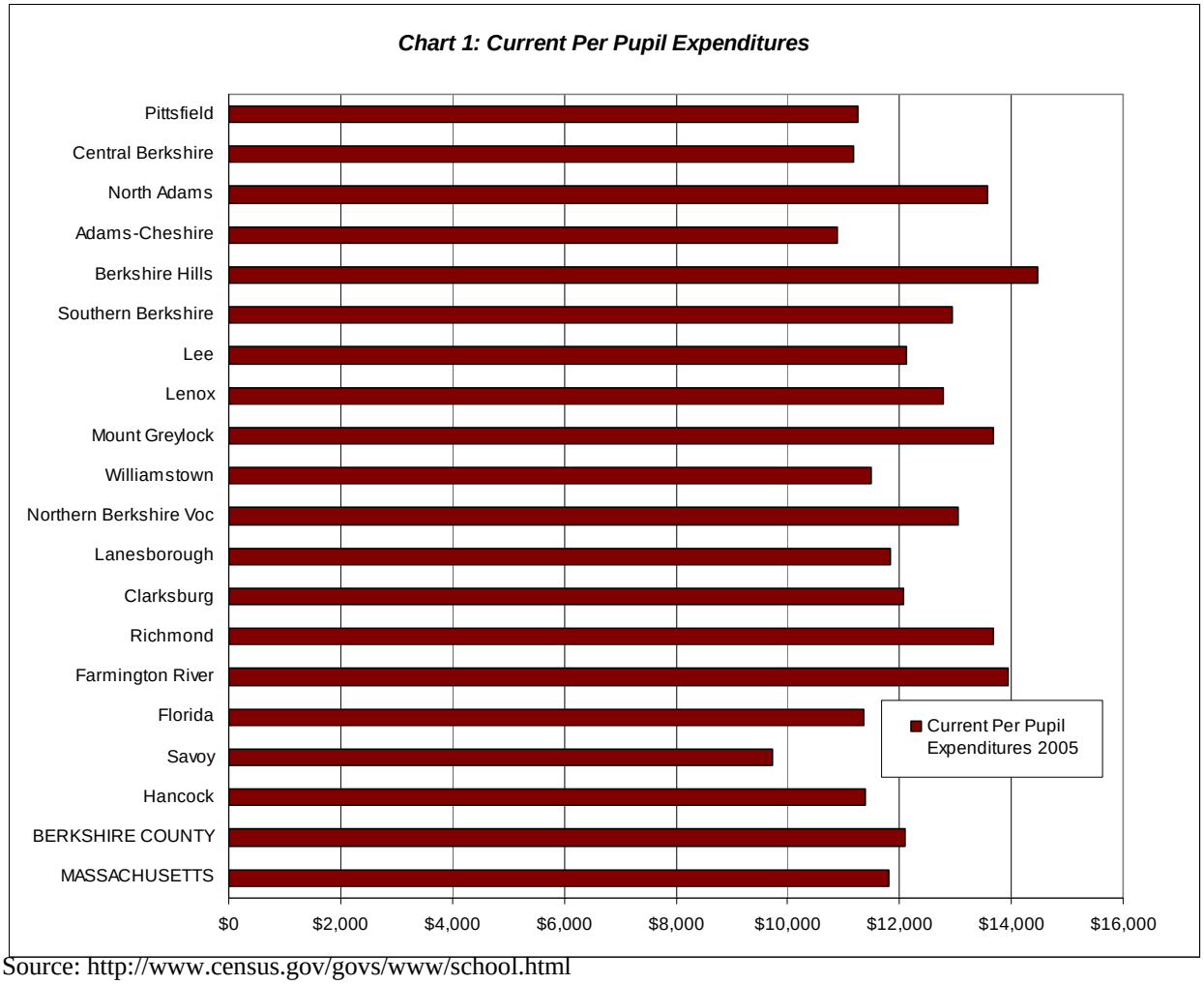
Farmington River, a smaller regional district on the Berkshire County district size continuum, experienced the largest drop in current per pupil expenditures over FY03 in non-inflation adjusted dollars: -$1,906, or -12.0%. In contrast, North Adams, a larger district on the Berkshire County district size continuum, experienced the largest increase in current per pupil expenditures between FY03 and FY05 in non-inflation adjusted dollars: $2,327, or 20.7%.

Please see Table 17 and Chart 1 for more detail. As is the case with all tables and charts in the educational expenditures section of this report, districts are arranged from smallest to largest in terms of student enrollment in FY05, which corresponds to the 2004-2005 school year.

Table 17
Current Per Pupil Expenditures

District	FY03	FY04	FY05	FY03-FY05	
				Change	Percent Change
Hancock	$10,351	$12,320	$11,377	$1,026	9.9
Savoy	$9,891	$10,107	$9,732	-$159	-1.6
Florida	$9,722	$8,748	$11,369	$1,648	16.9
Farmington River	$15,848	$15,447	$13,942	-$1,906	-12.0
Richmond	$11,853	$11,468	$13,687	$1,835	15.5
Clarksburg	$10,782	$11,109	$12,080	$1,298	12.0
Lanesborough	$10,433	$11,189	$11,838	$1,405	13.5
Northern Berkshire Voc	$14,044	$14,007	$13,036	-$1,008	-7.2
Williamstown	$10,288	$10,314	$11,497	$1,209	11.7
Mount Greylock	$11,804	$12,654	$13,679	$1,875	15.9
Lenox	$12,546	$12,923	$12,790	$244	1.9
Lee	$10,695	$11,288	$12,124	$1,429	13.4
Southern Berkshire	$12,511	$12,048	$12,930	$420	3.4
Berkshire Hills	$12,640	$13,486	$14,462	$1,822	14.4
Adams-Cheshire	$9,449	$10,377	$10,875	$1,427	15.1
North Adams	$11,252	$13,086	$13,579	$2,327	20.7
Central Berkshire	$9,948	$9,892	$11,169	$1,221	12.3
Pittsfield	$10,017	$10,544	$11,259	$1,242	12.4
Berkshire County	**$10,814**	**$11,375**	**$12,093**	**$1,280**	11.8
Massachusetts	$10,629	$11,175	$11,821	$1,192	11.2

Source: http://www.census.gov/govs/www/school.html



Source: http://www.census.gov/govs/www/school.html

Expenditures for Instruction

The percentage of current expenditures spent on instruction in FY05 was 63.4% for Berkshire County as a whole and 63.8% for the state as a whole. The percentage of current expenditures spent on instruction in the eighteen operating Berkshire County districts ranged from 54.0% in Savoy to 69.6% in North Adams. Savoy is a one-school district serving grades K-5, and North Adams operates five schools providing complete K-12 educational services within its borders.

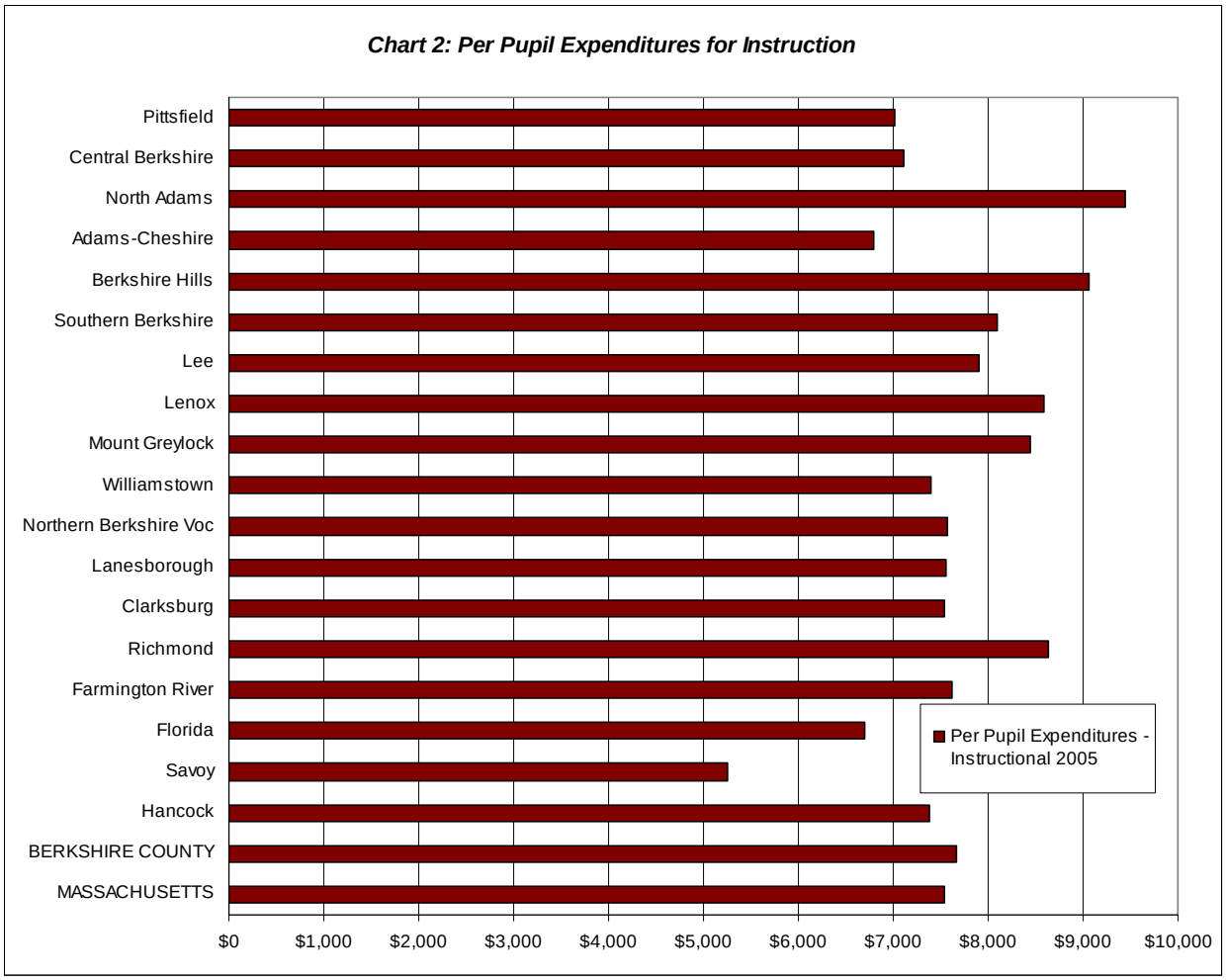
Current expenditures for instruction in the county as a whole were $7,673 per student in membership in FY05, an increase of 14.6% ($976) over FY03 in unadjusted dollars. The state spent $7,542 per student. As shown in Table 22, eleven districts in Berkshire County spent less than $7,673 per student on instruction in FY05. Current expenditures for instruction varied from $5,254 per pupil in Savoy to $9,451 per pupil in North Adams. In FY05, the five districts spending the least per pupil on instruction were Savoy ($5,254), Florida ($6,703), Adams-Cheshire ($6,798), Pittsfield ($7,021), and Central Berkshire ($7,108) – districts at the smaller and larger ends of the district size continuum in Berkshire County. The five districts spending the most per pupil on instruction in FY05 were North Adams ($9,451), Berkshire Hills ($9,058), Richmond ($8,636), Lenox ($8,589), and Mount Greylock ($8,440). These districts represent the full spectrum of district profiles, both in size and services provided. Please see Table 18 and Chart 2 for more detail.

As shown in Table 18, Farmington River, a smaller regional district on the Berkshire County district size continuum, experienced the largest drop in per pupil expenditures for instruction over FY03 in non-inflation adjusted dollars: -$1,947, or -20.3%. In contrast, North Adams, a larger local district on the Berkshire County district size continuum, experienced the largest increase in per pupil expenditures for instruction over FY03 in non-inflation adjusted dollars: 56.0%, or $3,393. These are the same two districts that experienced the greatest change in per pupil current expenditures between FY03 and FY05 in non-inflation adjusted dollars.

Table 18
Per Pupil Expenditures for Instruction

District	FY03	FY04	FY05	FY03-FY05	
				Change	Percent Change
Hancock	$7,000	$8,580	$7,377	$377	5.4
Savoy	$5,473	$5,464	$5,254	-$219	-4.0
Florida	$5,417	$5,580	$6,703	$1,285	23.7
Farmington River	$9,573	$9,793	$7,626	-$1,947	-20.3
Richmond	$7,126	$7,146	$8,636	$1,510	21.2
Clarksburg	$6,194	$6,545	$7,538	$1,343	21.7
Lanesborough	$6,671	$7,193	$7,559	$888	13.3
Northern Berkshire Voc	$8,607	$8,380	$7,564	-$1,042	-12.1
Williamstown	$6,810	$6,841	$7,393	$582	8.6
Mount Greylock	$7,238	$8,007	$8,440	$1,201	16.6
Lenox	$8,475	$8,727	$8,589	$114	1.4
Lee	$7,231	$7,189	$7,901	$671	9.3
Southern Berkshire	$6,364	$7,664	$8,098	$1,735	27.3
Berkshire Hills	$8,296	$8,594	$9,058	$762	9.2
Adams-Cheshire	$6,216	$6,283	$6,798	$582	9.4
North Adams	$6,058	$9,511	$9,451	$3,393	56.0
Central Berkshire	$6,134	$6,142	$7,108	$973	15.9
Pittsfield	$6,390	$6,701	$7,021	$631	9.9
Berkshire County	**$6,697**	**$7,308**	**$7,673**	**$976**	**14.6**
Massachusetts	$6,742	$7,152	$7,542	$799	11.9

Source: http://www.census.gov/govs/www/school.html.



Source: http://www.census.gov/govs/www/school.html

Expenditures for Administration

In FY05, current expenditures for administration for Berkshire County as a whole were $685 per student in membership, slightly higher than in the state as a whole ($666). Nevertheless, this represents a 21% (-$182) decline from FY03 in non-inflation adjusted dollars. As shown in Table 19, four local school districts in the county spent less than $685 per student on administration. Two of these districts – North Adams ($485) and Pittsfield ($487) provide complete K-12 educational services within their borders and the other two districts – Williamstown ($574) and Hancock ($604) are one-school districts serving grades K-6. Furthermore, in FY05, Hancock was the smallest district in the county with 53 students and Pittsfield was the largest with 6,496 students. Please see Chart 3 for more detail.

In FY05, current expenditures for administration ranged from a low of $485 in North Adams to a high of $1,360 in Florida. The median per pupil expenditure on administration in Berkshire County districts was $835.50, indicating that half of the school districts spent less than $835.50 per student on school and district administration. Northern Berkshire Vocational spent the second highest amount on administrative costs ($1,321) in FY05; it spent in the top quartile of districts in FY03 and FY04 as well. Five of the six very small districts (Hancock being the

exception), despite sharing superintendents, were in the top two quartiles in administrative spending per pupil during the fiscal years examined for this report.

Central Berkshire, a larger regional Berkshire County district, experienced the largest increase in per pupil expenditures for administration between FY03 and FY05 in non-inflation adjusted dollars: $263, or 44.8%. In contrast, Richmond, a smaller Berkshire County district, saw the largest decline in per pupil expenditures for administration over FY03 in unadjusted dollars: -$143, or -14.8%. This is the case only if North Adams' per pupil expenditures for administration are discarded; its officially reported FY03 costs appear to be an outlier at $2,725 per pupil and may reflect a reporting or other data error.

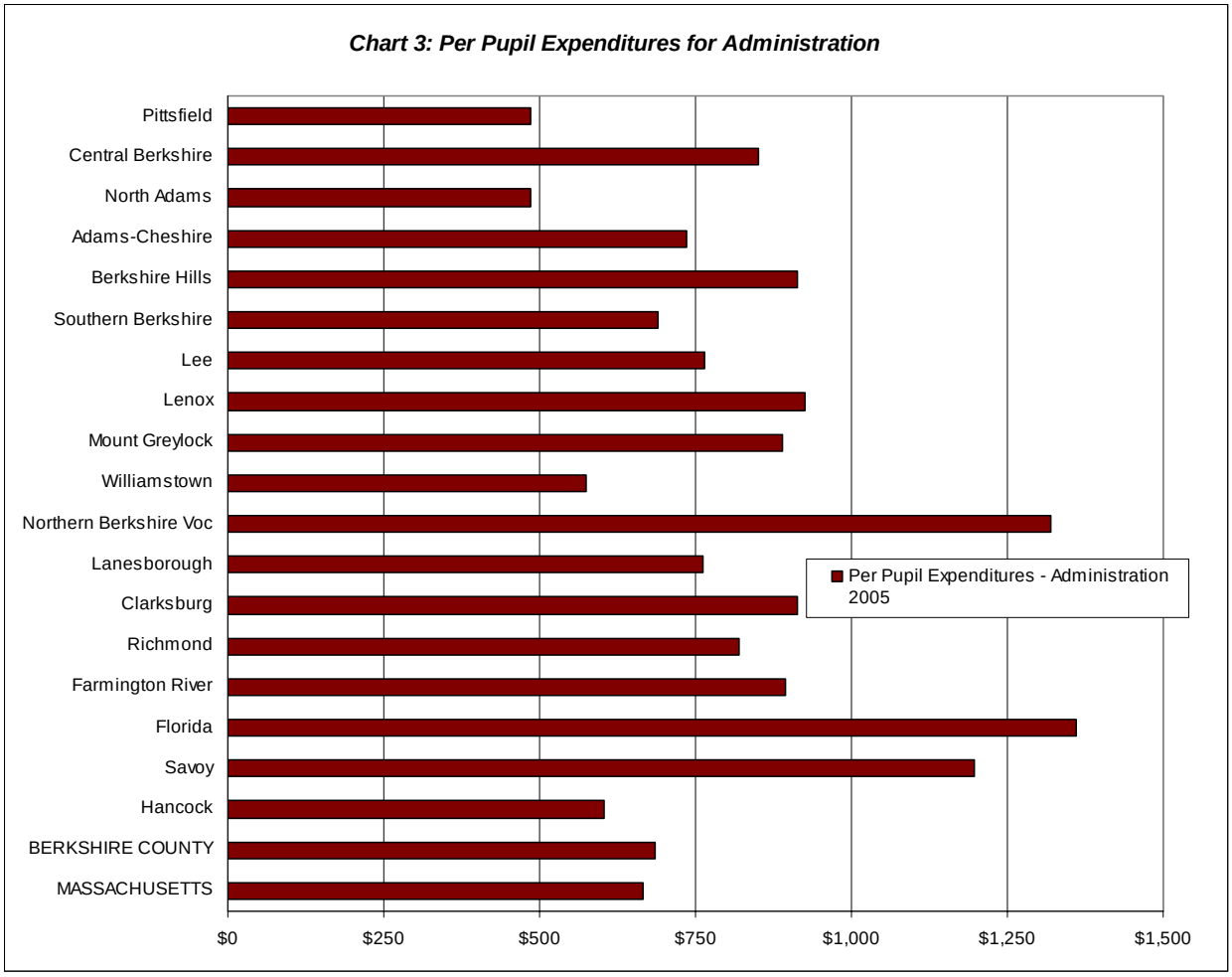
The percentage of current expenditures spent on administration was 5.7% in FY05 for Berkshire County as a whole and 5.6% in the state as whole. The percentage of current expenditures spent on administration in the eighteen Berkshire County districts ranged from 3.6% in North Adams to 12.3% in Savoy. North Adams was the third largest district in the county in FY05 with 1,997 students and Savoy was the second smallest district with 71 students. It would be premature at this point to conclude that larger districts spend less on administrative costs. To illustrate, the five districts (North Adams, Pittsfield, Williamstown, Hancock, and Southern Berkshire) whose percentage of current expenditures on administration was lower than both the state's (5.6%) and county's (5.7%) represent the full spectrum of district profiles, both in terms of size and services provided.

Table 19

Per Pupil Expenditures for Administration

District	FY03	FY04	FY05	FY03-FY05	
				Change	Percent Change
Hancock	$544	$680	$604	$60	11.0
Savoy	$1,291	$1,286	$1,197	-$94	-7.3
Florida	$1,252	$1,261	$1,360	$108	8.6
Farmington River	$916	$1,005	$895	-$21	-2.3
Richmond	$963	$805	$821	-$143	-14.8
Clarksburg	$924	$1,069	$915	-$10	-1.0
Lanesborough	$853	$740	$761	-$92	-10.8
Northern Berkshire Voc	$1,208	$1,189	$1,321	$112	9.3
Williamstown	$527	$587	$574	$47	8.8
Mount Greylock	$640	$729	$889	$249	38.8
Lenox	$871	$893	$926	$54	6.2
Lee	$751	$718	$764	$13	1.7
Southern Berkshire	$495	$625	$691	$196	39.5
Berkshire Hills	$1,045	$852	$914	-$132	-12.6
Adams-Cheshire	$671	$619	$737	$65	9.7
North Adams	$2,725	$461	$485	-$2,240	-82.2
Central Berkshire	$587	$795	$850	$263	44.8
Pittsfield	$485	$448	$487	$2	0.3
Berkshire County	**$867**	**$632**	**$685**	**-$182**	**-21.0**
Massachusetts	$613	$630	$666	$52	8.5

Source: http://www.census.gov/govs/www/school.html



Source: http://www.census.gov/govs/www/school.html

Expenditures for Operations and Maintenance

The percentage of current expenditures spent on operations and maintenance was 9.9% in FY05 for Berkshire County as a whole; it was 9.1% in the state as a whole. The percentage of current expenditures spent on operations and maintenance in the eighteen Berkshire County districts ranged from 6.5% in Clarksburg to 14.9% in Northern Berkshire Vocational. As previously mentioned, district-level analyses and comparisons are complicated by the variety of levels of education provided and types of public schools within Berkshire County district.

Current per pupil expenditures for operations and maintenance in FY05 were $1,197 in the county as whole, an increase of 22.1% ($216) over FY03 in non-inflation adjusted dollars. They were $1,097 in the state as a whole in FY05. As shown in Table 24, current per pupil expenditures for operations and maintenance ranged from $789 in Clarksburg to $1,940 in Northern Berkshire Vocational. The five districts – Clarksburg ($789), Williamstown ($919), North Adams ($966), Central Berkshire ($1,048), and Pittsfield ($1,108) with the lowest current per pupil expenditures for operations and maintenance represent the full spectrum of district profiles; the latter three are the three largest districts in the region. Please see Table 20 and Chart 4 for more detail.
As shown in Table 24, two districts at opposite ends of the district size continuum in Berkshire County, Hancock (53 students in FY05 school year) and Adams-Cheshire (1,782 students in FY05), experienced the largest

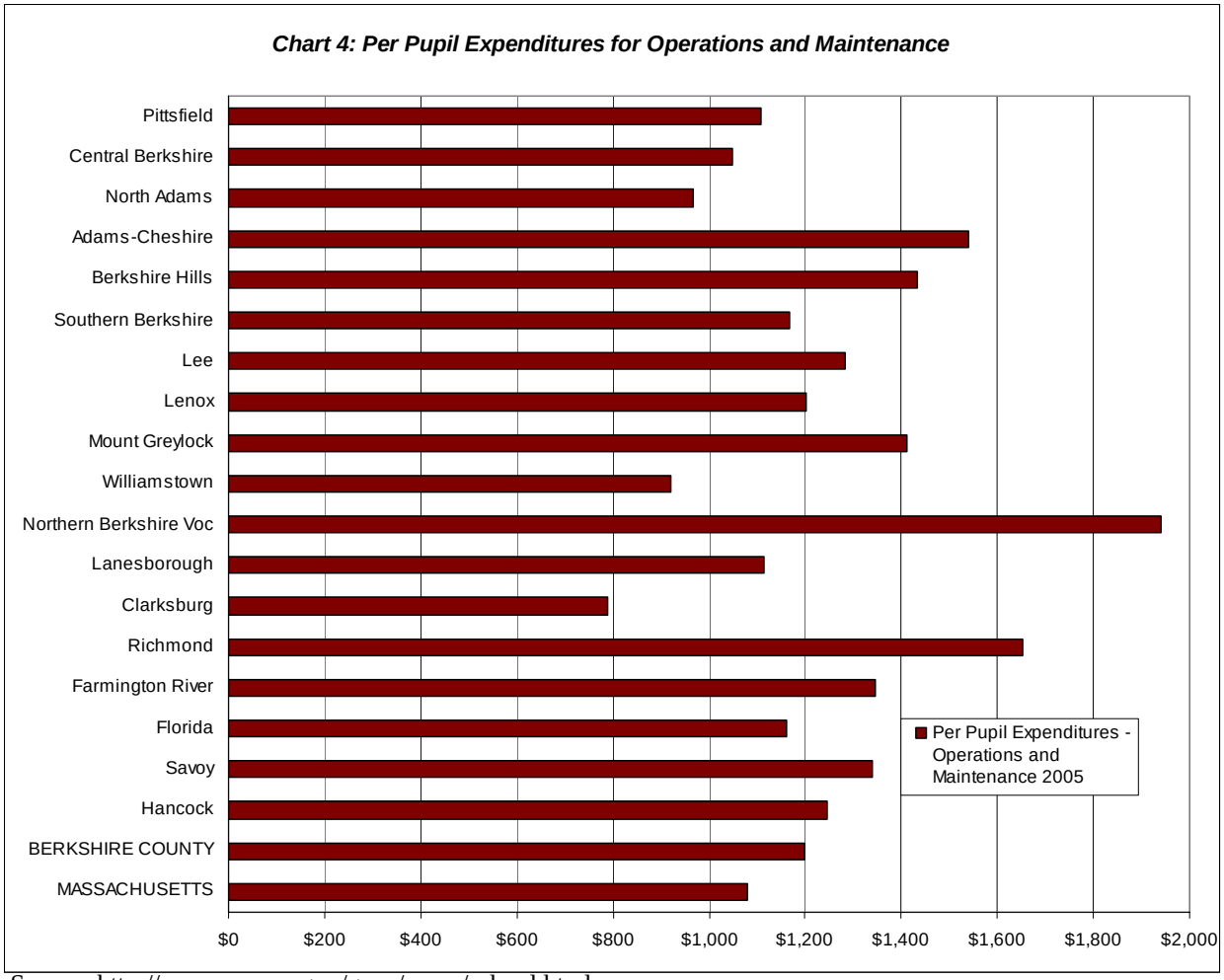
increases in current per pupil expenditures for operations and maintenance over FY03 in non-inflation adjusted dollars; they increased $389, or 44%, in Hancock and $632, or 69.5%, in Adams-Cheshire. Clarksburg on the other hand, a district with less than 200 students, was the only district to spend less per pupil each fiscal year in non-inflation adjusted dollars since FY03 for operations and maintenance. Williamstown and North Adams were consistently among the districts spending the least per pupil for operations and maintenance in FY03, FY04 and FY05.

Table 20

Per Pupil Expenditures for Operations and Maintenance

District	FY03	FY04	FY05	FY03-FY05	
				Change	Percent Change
Hancock	$860	$880	$1,245	$386	44.9
Savoy	$1,073	$1,446	$1,338	$265	24.7
Florida	$1,104	$1,076	$1,162	$58	5.2
Farmington River	$1,079	$1,149	$1,347	$269	24.9
Richmond	$1,426	$1,132	$1,651	$225	15.8
Clarksburg	$1,100	$837	$789	-$311	-28.2
Lanesborough	$1,055	$889	$1,114	$59	5.6
Northern Berkshire Voc	$1,766	$1,591	$1,940	$174	9.9
Williamstown	$719	$710	$919	$200	27.8
Mount Greylock	$1,306	$1,384	$1,412	$106	8.2
Lenox	$1,140	$1,190	$1,203	$63	5.5
Lee	$1,117	$1,138	$1,284	$167	15.0
Southern Berkshire	$841	$1,073	$1,168	$327	38.8
Berkshire Hills	$1,063	$1,481	$1,434	$370	34.8
Adams-Cheshire	$909	$2,007	$1,541	$632	69.5
North Adams	$787	$882	$966	$178	22.6
Central Berkshire	$935	$884	$1,048	$114	12.2
Pittsfield	$952	$980	$1,108	$156	16.4
Berkshire County	**$981**	**$1,135**	**$1,197**	**$216**	**22.1**
Massachusetts	$973	$1,002	$1,079	$106	10.9

Source: http://www.census.gov/govs/www/school.html



Source: http://www.census.gov/govs/www/school.html

Expenditures for Transportation

In FY05, current per pupil expenditures for transportation were $432 in the county as a whole, an increase of 6.9% ($28) over FY03 in non-inflation adjusted dollars. They were $455 in the state as a whole in FY05. As shown in Table 25, current per pupil expenditures for transportation ranged from $233 in Williamstown to $1,753 in Farmington River. The four local school districts providing complete K-12 educational services within their borders – Lee ($234), Lenox ($247), Pittsfield ($249), and North Adams ($336) were among the districts spending the least on transportation costs per student in membership. In addition, size alone does not appear to be a good indicator of lower-spending districts on transportation per student. To illustrate, the six districts (Williamstown ($233), Lee ($234), Lenox ($247), Pittsfield ($249), North Adams ($336), and Adams-Cheshire ($362)) having lower than average transportation costs per pupil were small, medium, or large in size. Only one however, Adams-Cheshire, was a regional school district. Nevertheless, the twelve districts having higher than average transportation costs per pupil were either very small districts (fewer than 200 students) and/or regional school districts. The very small districts were consistently in the top quartile of transportation spending during FY03, FY04, and FY05. Please see Table 21 and Chart 5 for more detail.

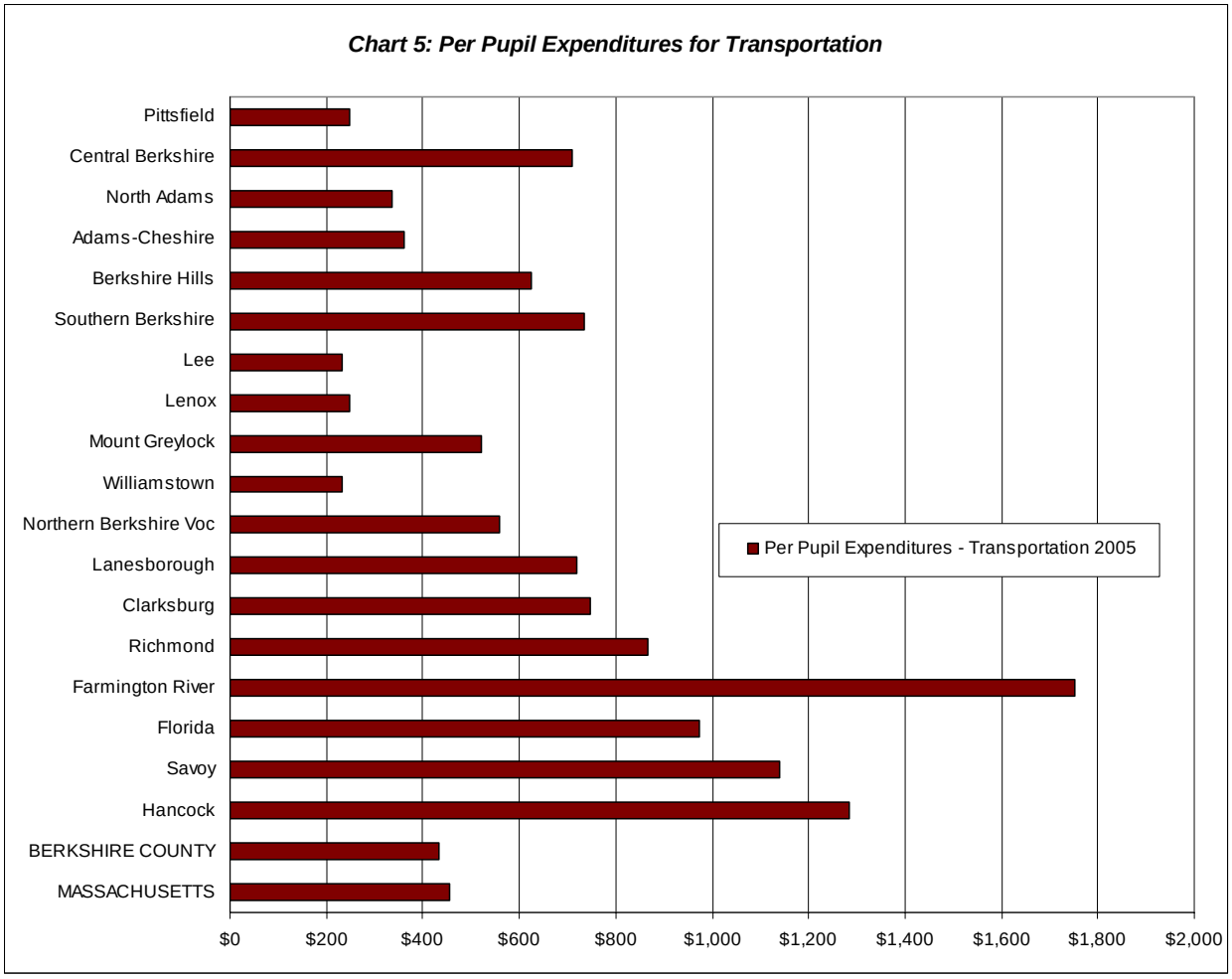
The percentage of current expenditures spent on transportation in FY05 was 3.6% for Berkshire County as a whole; it was 3.8% in the state as a whole. The percentage of current expenditures spent on transportation in the

eighteen Berkshire County districts ranged from 1.9% in Lee and Lenox to 12.6% in Farmington River. Farmington River is a one-school regional school district providing K-6 educational services to students in the towns of Otis and Sandisfield.

Table 21
Per Pupil Expenditures for Transportation

District	FY03	FY04	FY05	FY03-FY05	
				Change	Percent Change
Hancock	$1,053	$1,260	$1,283	$230	21.9
Savoy	$1,200	$1,179	$1,141	-$59	-4.9
Florida	$809	$0	$973	$164	20.3
Farmington River	$1,792	$1,681	$1,753	-$40	-2.2
Richmond	$774	$805	$867	$93	12.0
Clarksburg	$692	$688	$749	$57	8.2
Lanesborough	$609	$669	$721	$111	18.3
Northern Berkshire Voc	$614	$595	$560	-$54	-8.8
Williamstown	$266	$221	$233	-$34	-12.6
Mount Greylock	$476	$427	$521	$45	9.4
Lenox	$283	$249	$247	-$35	-12.5
Lee	$225	$230	$234	$8	3.8
Southern Berkshire	$731	$693	$736	$5	0.7
Berkshire Hills	$512	$553	$625	$113	22.0
Adams-Cheshire	$383	$326	$362	-$22	-5.6
North Adams	$347	$349	$336	-$11	-3.0
Central Berkshire	$654	$657	$709	$55	8.5
Pittsfield	$212	$225	$249	$38	17.7
Berkshire County	**$404**	**$397**	**$432**	**$28**	**6.9**
Massachusetts	$415	$430	$455	$40	9.7

Source: http://www.census.gov/govs/www/school.html



Source: http://www.census.gov/govs/www/school.html

Educational Achievement and Student Outcomes

For purposes of this report, the indicator used to measure educational achievement and change over time is the pass rate on the English Language Arts (ELA) and math sections of the Massachusetts Comprehensive Assessment System (MCAS), or the percentage of students with an MCAS score in the Needs Improvement, Proficient, or Advanced performance categories. On Grade 3 MCAS tests, the performance level "Advanced" does not exist; instead the performance category of "Above Proficient" is used. The following section of the report examines the performance of students in Berkshire County elementary schools (composite score Grade 3 Reading and Grade 4 ELA; Grade 4 math), middle schools (Grade 7 ELA; composite score Grade 6 and 8 math), and high schools (Grade 10 ELA and math). MCAS data from academic years 2002-2003, 2003-2004, and 2004-2005, which correspond to fiscal years 2003, 2004, and 2005, respectively, are examined. District-level performance for the eighteen districts in Berkshire County was made available by the Massachusetts Department of Education (MA DOE).

In addition, the Institute utilized the Effectiveness Index (EI) to assess district performance in light of the socioeconomic composition of the student population. The EI measures the extent to which individual districts meet, exceed or fail to meet or exceed their expected performance given the socioeconomic composition of their student population and the strength of the relationship between socioeconomic factors and MCAS performance of districts statewide. Districts that score below a level predicted based on the performance of districts statewide in educating these same types of students are judged as under-performing. Districts that achieve a score higher than predicted are identified as over-performing. A linear regression model was developed to compute the EI. This model used percentage of low-income students as a proxy for socioeconomic background and included the number of test takers as a factor in an effort to assess whether district size was correlated with MCAS achievement.[131] Graduation and dropout rates were also analyzed.

In Berkshire County, sixteen of the eighteen public school districts provide primary education.[132] Two of these districts, Hancock and Savoy, had fewer than ten students taking the Grade 3 Reading or Grade 4 ELA MCAS during at least two of the three academic years under study. Three of these districts – Hancock, Savoy, and Florida, had fewer than ten test takers in at least one year of the Grade 3 or Grade 4 math MCAS administrations under review. Consistent with MA DOE policy and standard research protocol, data are not reported for these districts when the number of test takers is below ten. As a result, trends in data are not provided for these districts.

Furthermore, four Berkshire districts – Hancock, Farmington River, Lanesborough, and Williamstown do not provide educational services beyond the sixth grade. Since middle school performance on ELA is measured in this study by performance on the Grade 7 ELA MCAS only, scores are not reported for these districts. In addition, middle school performance on math, for the purposes of this report, is measured by a composite score for both the Grade 6 and Grade 8 math MCAS tests. Since Hancock, Farmington River, Lanesborough, and Williamstown do not provide education services in Grade 8, their math MCAS scores reflect their performance on the Grade 6 math MCAS test only. Similarly, Mount Greylock's scores on the math MCAS are from the Grade 8 math MCAS test only. In addition, data are not reported for Hancock since the number of test takers was less than 10 during MCAS administrations examined for this report. Finally, ten Berkshire districts provide complete high school education.[133]

[131] The low-income selected student population indicates the percent of enrollment who meet any one of the following definitions of low income: the student is eligible for free or reduced price lunch; or the student receives Transitional Aid to Families benefits; or the student is eligible for food stamps.
[132] Please refer to Table 7 on page 30 in this report.
[133] Please refer to Table 7 on page 30 in this report.

Elementary School Districts

ELA MCAS Performance

In Berkshire County, 92.6% of students taking the Grade 3 Reading or Grade 4 ELA MCAS test in 2005 passed; this represents an increase of half a percentage point from 2003. The county's 2005 pass rate is 1.3 percentage points higher than the state's. However, the county (53.0%) had a lower percentage of students scoring in the advanced, above proficient or proficient categories than the state (55.8%) on these tests.

As shown in Table 22, in 2005, only two districts – Lee (89.9%) and North Adams (84.2%) – had a lower percentage of their students passing the Grade 3 Reading or Grade 4 ELA MCAS test than the statewide average. Both of these districts are medium in size and provide K-12 services within its borders. Eight districts had a higher percentage of their students passing the Grade 3 Reading or Grade 4 ELA MCAS test than the county's average: Farmington River (100.0%), Lanesborough (98.9%), Richmond (97.2%), Southern Berkshire (96.6%), Central Berkshire (96.4%), Williamstown (96.2%), Adams-Cheshire (93.4%), and Lenox (93.1%). These districts represent the full spectrum of district profile in Berkshire County, both in size and services provided.

Ten Berkshire County districts providing elementary education had a higher percentage of its students performing in the advanced, above proficient or proficient categories than the state and county averages on these tests.[134] Farmington River (73.2%), Richmond (72.2%), and Lanesborough (68.2%) had the highest percentage of students scoring in these performance levels on the 2005 tests. These three districts are at the smaller end of the district size continuum in Berkshire County.

While their pass rates on the Grade 3 Reading or Grade 4 ELA MCAS were higher or the same as the state or county, Clarksburg, Adams-Cheshire, and Pittsfield had much lower percentages of their students scoring in the advanced, above proficient or proficient categories than the state or county. Please see Chart 6 for more detail.

As shown in Table 22, the district of Florida experienced the largest decline in the percentage of students passing the Grade 3 Reading or Grade 4 ELA MCAS test from 2003. In contrast, the percentage of students passing in Lenox rose 4.3 percentage points from 2003. With regard to the percentage of students scoring in the advanced, above proficient and proficient categories, Farmington River and Berkshire Hills experienced the largest gains from 2003.

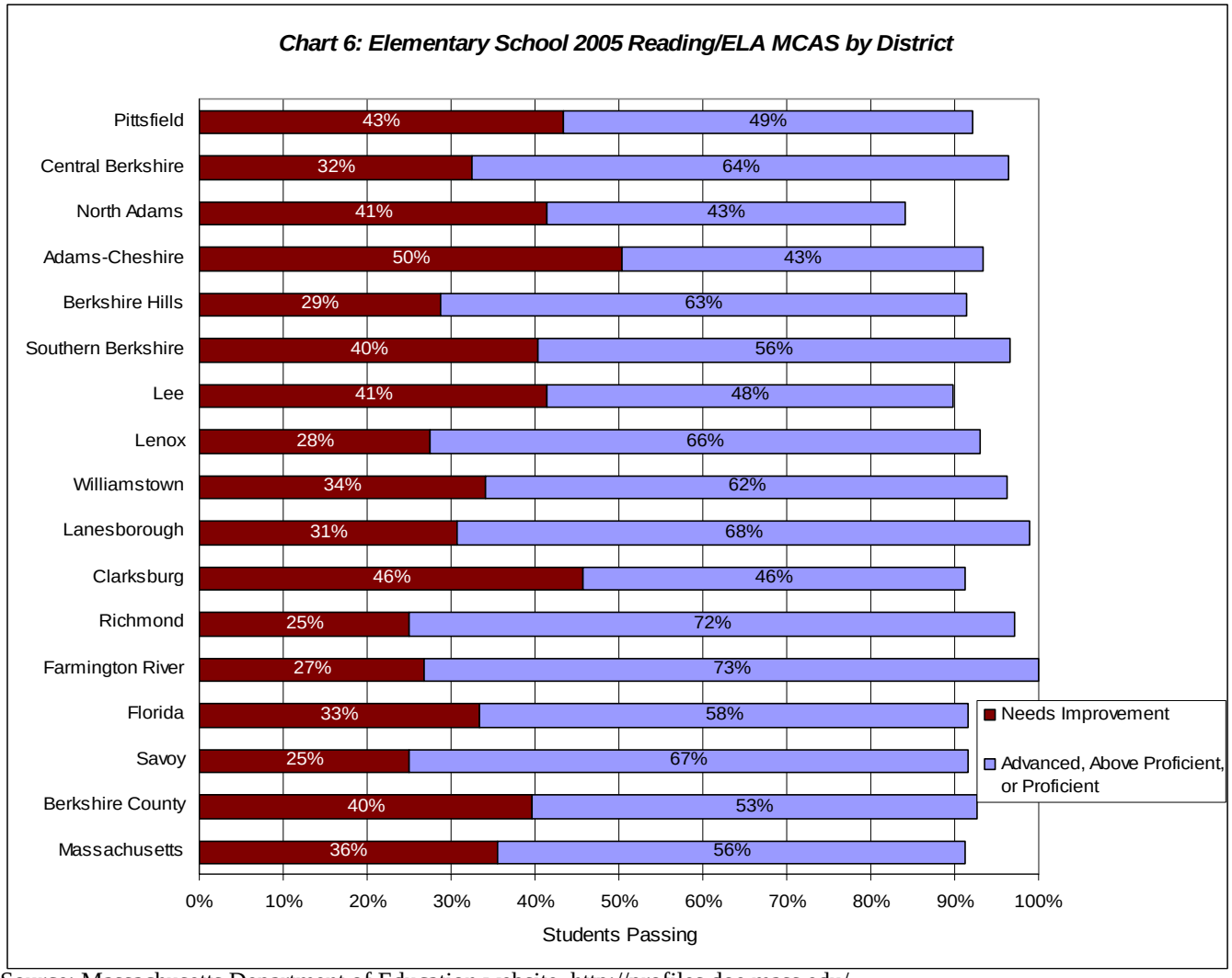
As is the case with all tables and charts in this section of the report, districts are arranged from smallest to largest in terms of student enrollment in FY05, which corresponds to the 2004-2005 school year.

[134] Performance level percentages were not calculated in Hancock because its student group was less than ten for the 2005 Reading/ELA MCAS test. Performance level percentages are composite scores for both the Grade 3 and Grade 4 Reading/ELA MCAS tests.

Table 22
Elementary School Performance on ELA MCAS

District	Percent Combined Advanced, Above Proficient, and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Savoy	#N/A	#N/A	66.7	-	#N/A	#N/A	91.7	-
Florida	50.0	41.7	58.3	8.3	95.8	100.0	91.7	-4.2
Farmington River	57.1	60.4	73.2	16.0	100.0	97.9	100.0	0.0
Richmond	84.1	73.7	72.2	-11.9	97.7	94.7	97.2	-0.5
Clarksburg	69.4	43.1	45.7	-23.7	93.9	93.1	91.3	-2.6
Lanesborough	76.1	75.9	68.2	-7.9	100.0	97.5	98.9	-1.1
Northern Berkshire Voc	-	-	-	-	-	-	-	-
Williamstown	69.2	67.9	62.1	-7.1	94.4	95.5	96.2	1.8
Mount Greylock	-	-	-	-	-	-	-	-
Lenox	64.5	53.8	65.5	1.0	88.8	89.1	93.1	4.3
Lee	45.2	55.3	48.5	3.3	88.7	88.6	89.9	1.2
Southern Berkshire	50.9	58.3	56.4	5.4	92.5	94.7	96.6	4.1
Berkshire Hills	47.6	55.2	62.6	15.0	88.7	91.7	91.4	2.7
Adams-Cheshire	42.9	51.3	43.0	0.2	94.3	94.8	93.4	-0.9
North Adams	36.3	41.5	42.8	6.5	81.4	84.3	84.2	2.8
Central Berkshire	64.9	65.3	63.9	-1.0	96.3	95.6	96.4	0.1
Pittsfield	54.9	52.3	48.8	-6.1	93.1	91.4	92.2	-0.9
Berkshire County	**54.1**	**54.8**	**53.0**	**-1.1**	**92.1**	**92.0**	**92.6**	**0.5**
Massachusetts	59.1	59.4	55.8	-3.3	91.4	92.0	91.3	-0.1

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
#N/A: data not reported; class size too small.



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Math MCAS Performance

In 2005, 84.9% of students in Berkshire County passed the Grade 3 or Grade 4 math MCAS test, an increase of 3.2 percentage points from 2003. This figure is also two-tenths of a percentage point lower than the statewide pass rate. Five districts – Farmington River (81.0%), Lee (75.5%), Berkshire Hills (83.1%), Adams-Cheshire (80.6%), and North Adams (73.8%) had a lower percentage of students passing these MCAS tests than the county. Four of these districts are medium in size (Lee, Berkshire Hills, Adams-Cheshire, and North Adams) and three of them are regional school districts (Farmington River, Berkshire Hills, Adams-Cheshire). Central Berkshire (94.2%) and Lenox (93.3%), two medium-sized districts, one of which is also a regional district, had the highest percentage of students passing these tests. Williamstown, a small K-6 district, was the only other Berkshire district to have a pass rate higher than 90%.

Countywide, 31.6% of students passing the Grade 3 or Grade 4 math MCAS test scored in the advanced, above proficient or proficient performance levels; this figure is 8.9 percentage points lower than the state's average. It also represents one-tenth of a percentage point decline from 2003. As shown in Chart 7, five Berkshire County districts – Lee (22.6%), Berkshire Hills (13.8%), Adams-Cheshire (23.1%), North Adams (20.6%), and Pittsfield

(31.5%) had lower percentages of students scoring in these performance categories than the county's average.[135] These districts are on the larger end of the district size continuum in Berkshire County. Williamstown (54.9%), a small district, had the largest percentage of students scoring in the advanced, above proficient or proficient categories on these tests. The two other districts that outperformed the state were Lenox (43.3%), a medium sized district, and Richmond (41.2%), a very small district in size.

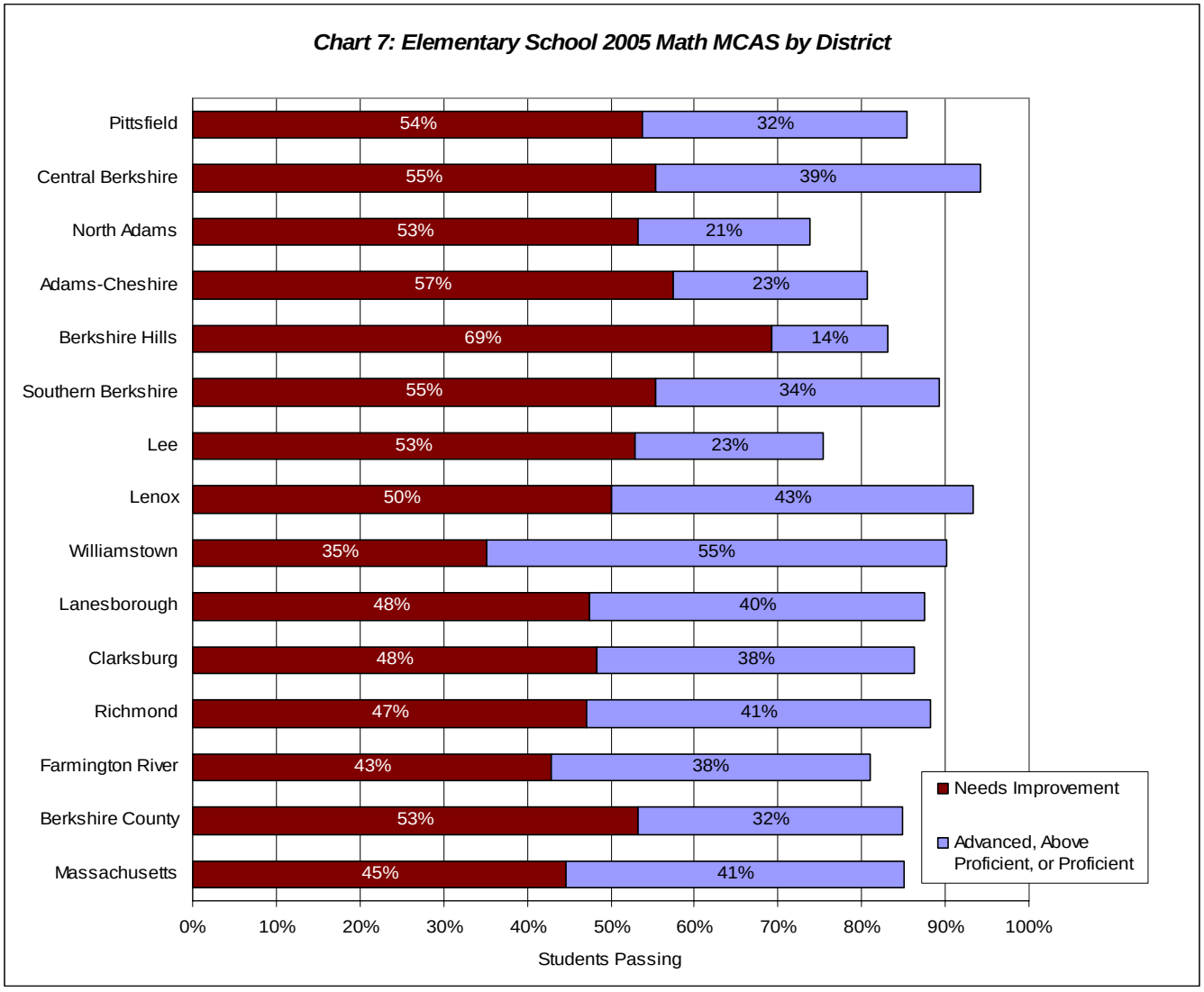
As shown in Table 23, Berkshire Hills experienced the largest improvement in pass rate from 2003, an increase of 17.6 percentage points. Farmington River, in contrast, experienced the largest decline in pass rate (-19 percentage points) from 2003. The largest gains in percentage of students scoring in the advanced, above proficient or proficient categories from 2003 occurred in Williamstown (8.7 percentage points). Adams-Cheshire experienced the greatest setback in these performance categories from 2003 (-9.3 percentage points).

Table 23
Elementary School Performance on Math MCAS

District	Percent Combined Advanced, Above Proficient, and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Savoy	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Florida	33.3	25.0	#N/A	*	75.0	100.0	#N/A	*
Farmington River	36.4	22.6	38.1	1.7	100.0	100.0	81.0	-19.0
Richmond	48.1	55.0	41.2	-7.0	92.6	90.0	88.2	-4.4
Clarksburg	31.8	25.0	37.9	6.1	90.9	75.0	86.2	-4.7
Lanesborough	47.2	35.0	40.0	-7.2	86.1	87.5	87.5	1.4
Northern Berkshire	-	-	-	-	-	-	-	-
Williamstown	46.3	59.8	54.9	8.7	92.5	90.2	90.1	-2.4
Mount Greylock	-	-	-	-	-	-	-	-
Lenox	45.1	46.6	43.3	-1.8	84.3	86.2	93.3	9.0
Lee	14.8	18.3	22.6	7.8	72.2	75.0	75.5	3.2
Southern Berkshire	42.1	36.0	33.8	-8.3	85.5	95.5	89.2	3.7
Berkshire Hills	21.8	32.9	13.8	-8.0	65.5	74.7	83.1	17.6
Adams-Cheshire	32.4	33.8	23.1	-9.3	85.9	86.2	80.6	-5.3
North Adams	18.9	20.5	20.6	1.7	63.5	70.5	73.8	10.2
Central Berkshire	46.9	41.1	38.8	-8.1	90.1	90.5	94.2	4.1
Pittsfield	26.8	32.7	31.5	4.8	82.9	84.6	85.4	2.5
Berkshire County	**31.6**	**34.0**	**31.6**	**-0.1**	**81.8**	**84.4**	**84.9**	**3.2**
Massachusetts	40.4	42.2	40.5	0.2	83.8	85.9	85.1	1.3

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
#N/A: data not reported; class size too small.

[135] Performance level percentages were not calculated in Hancock, Savoy, and Florida because their student group was less than ten for the 2005 Math MCAS test. Performance level percentages are composite scores for both the Grade 3 and Grade 4 Math MCAS tests.



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Middle School Districts

ELA MCAS Performance

In Berkshire County, in 2005, 93.4% of students passed the Grade 7 ELA MCAS test; this represents a drop of one-tenth of a percentage point from 2003. The county's 2005 pass rate is also one tenth of a percentage point higher than the state's average. As shown in Table 24, the two urban districts – North Adams (87.4%) and Pittsfield (88.0%) were the only districts to have lower pass rates than the state and county. Florida and Richmond, two very small districts in size, had pass rates of 100% in 2005. Clarksburg showed the greatest improvement in pass rate with an increase of 6.8 percentage points from 2003. In contrast, North Adams experienced the largest drop in pass rate with a decline of 6.1 percentage points from 2003.

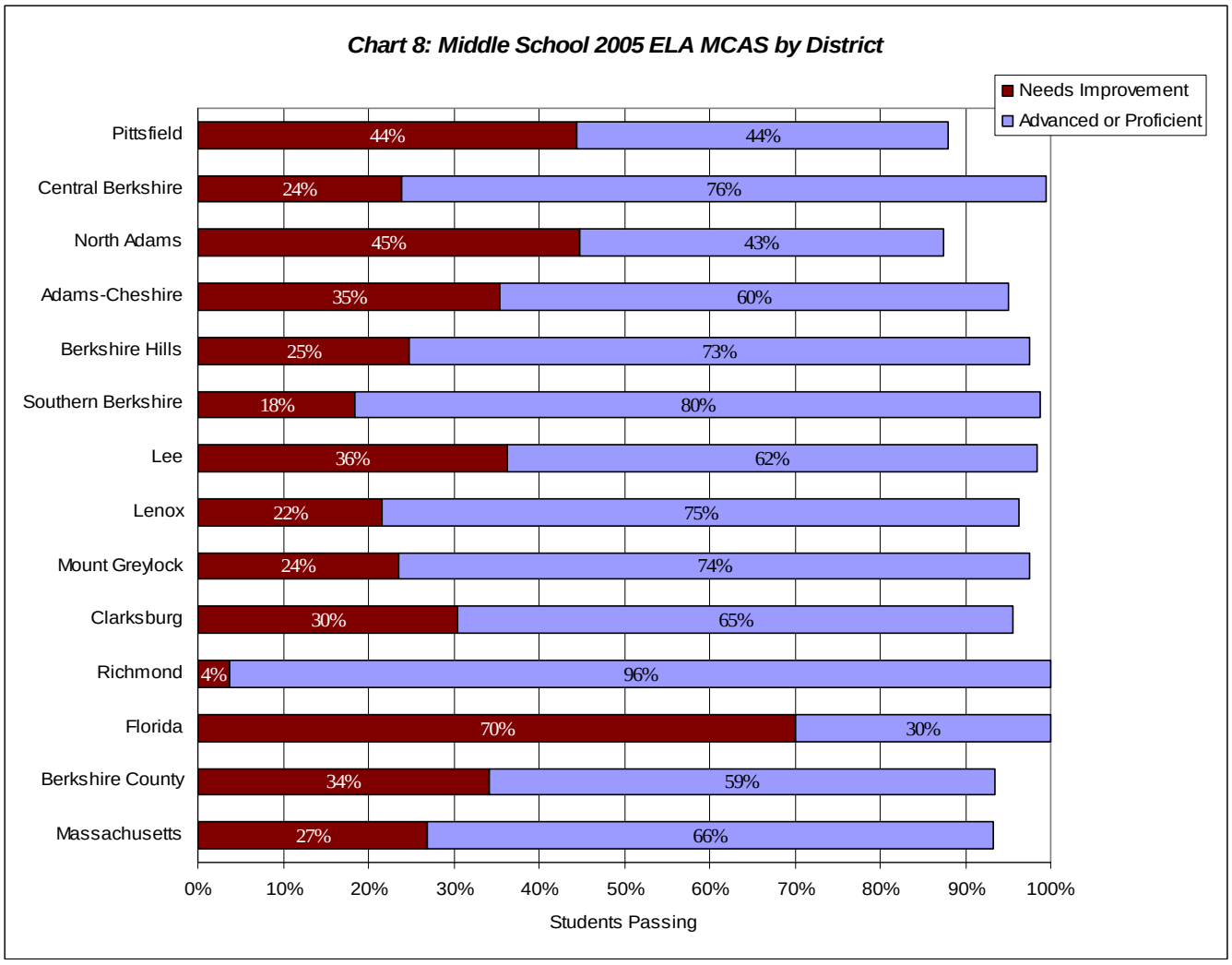
Whereas Berkshire County had a higher pass rate on the Grade 7 ELA MCAS than the state, it had a lower percentage of students scoring in the advanced or proficient categories. To illustrate, 59.2% of Berkshire County students scored either advanced or proficient on this test, or 7.1 percentage points lower than the state's average. Three districts – Florida (30.0%), North Adams (42.5%), and Pittsfield (43.6%) had lower percentages of students scoring in these categories than the state or county. These districts are at opposite ends of the district size continuum in Berkshire County. In addition, whereas Florida had a 100% pass rate in 2005, only 30% of its students scored in the advanced or proficient categories. This represents a drop of 70 percentage points from 2003.

Please see Table 24 and Chart 8 for more detail.

Table 24
Middle School Performance on ELA MCAS

District	Percent Combined Advanced and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock	-	-	-	-	-	-	-	-
Savoy	-	-	-	-	-	-	-	-
Florida	100.0	61.5	30.0	-70.0	100.0	100.0	100.0	0.0
Farmington River	-	-	-	-	-	-	-	-
Richmond	75.0	85.7	96.3	21.3	100.0	95.2	100.0	0.0
Clarksburg	50.0	68.8	65.2	15.2	88.9	100.0	95.7	6.8
Lanesborough	-	-	-	-	-	-	-	-
Northern Berkshire	-	-	-	-	-	-	-	-
Williamstown	-	-	-	-	-	-	-	-
Mount Greylock	78.8	75.2	74.0	-4.8	99.3	91.2	97.6	-1.7
Lenox	87.1	80.3	74.7	-12.5	98.6	98.5	96.2	-2.4
Lee	60.5	60.3	62.1	1.6	97.4	93.1	98.5	1.1
Southern Berkshire	69.3	69.1	80.3	10.9	92.0	93.8	98.7	6.7
Berkshire Hills	65.8	60.6	72.7	6.9	97.4	93.6	97.5	0.2
Adams-Cheshire	59.2	59.5	59.6	0.4	95.9	94.2	95.0	-0.9
North Adams	51.8	46.3	42.5	-9.3	93.5	87.7	87.4	-6.1
Central Berkshire	75.7	79.1	75.7	0.0	98.7	98.4	99.5	0.8
Pittsfield	52.5	52.3	43.6	-9.0	86.9	86.8	88.0	1.1
Berkshire County	**62.9**	**61.4**	**59.2**	**-3.6**	**93.5**	**91.5**	**93.4**	**-0.1**
Massachusetts	65.0	67.8	66.3	1.3	92.9	92.7	93.3	0.3

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Math MCAS performance

In 2005, 67.3% of students in Berkshire County passed the Grade 6 math MCAS or Grade 8 math MCAS. This figure is 5.7 percentage points lower than the statewide average. Yet, it represents an increase of 2.9 percentage points from 2003. Three districts – Lee (63.0%), North Adams (57.3%), and Pittsfield (57.1%) had lower pass rates than the county. Conversely, the districts on the smaller end of the district size continuum in Berkshire County had the highest pass rates: Florida (82.1%), Richmond (91.3%), and Clarksburg (77.1%). The pass rates for Williamstown (87.3%), Farmington River (87.1%), and Lanesborough (82.1%) are for the Grade 6 math MCAS only; they should not be compared with the composite scores of the other districts. Whereas Lee (-12.8 percentage points) experienced the biggest drop in pass rate, Clarksburg (+22.1 percentage points) experienced the largest improvement in pass rate from 2003.

32.3% of Berkshire County students scored advanced or proficient on the Grade 6 math MCAS or Grade 8 math MCAS, an increase of 2.2 percentage points from 2003. This figure is 10.4 percentage points lower than the statewide average. Four districts did not perform as well as the county in these categories: Lee (21.5%), Adams-Cheshire (31.7%), North Adams (23.8%), and Pittsfield (23.4%). These districts are medium to large in size. As occurred with the pass rate over time, Lee (-10.5 percentage points) experienced the biggest drop in percentage of

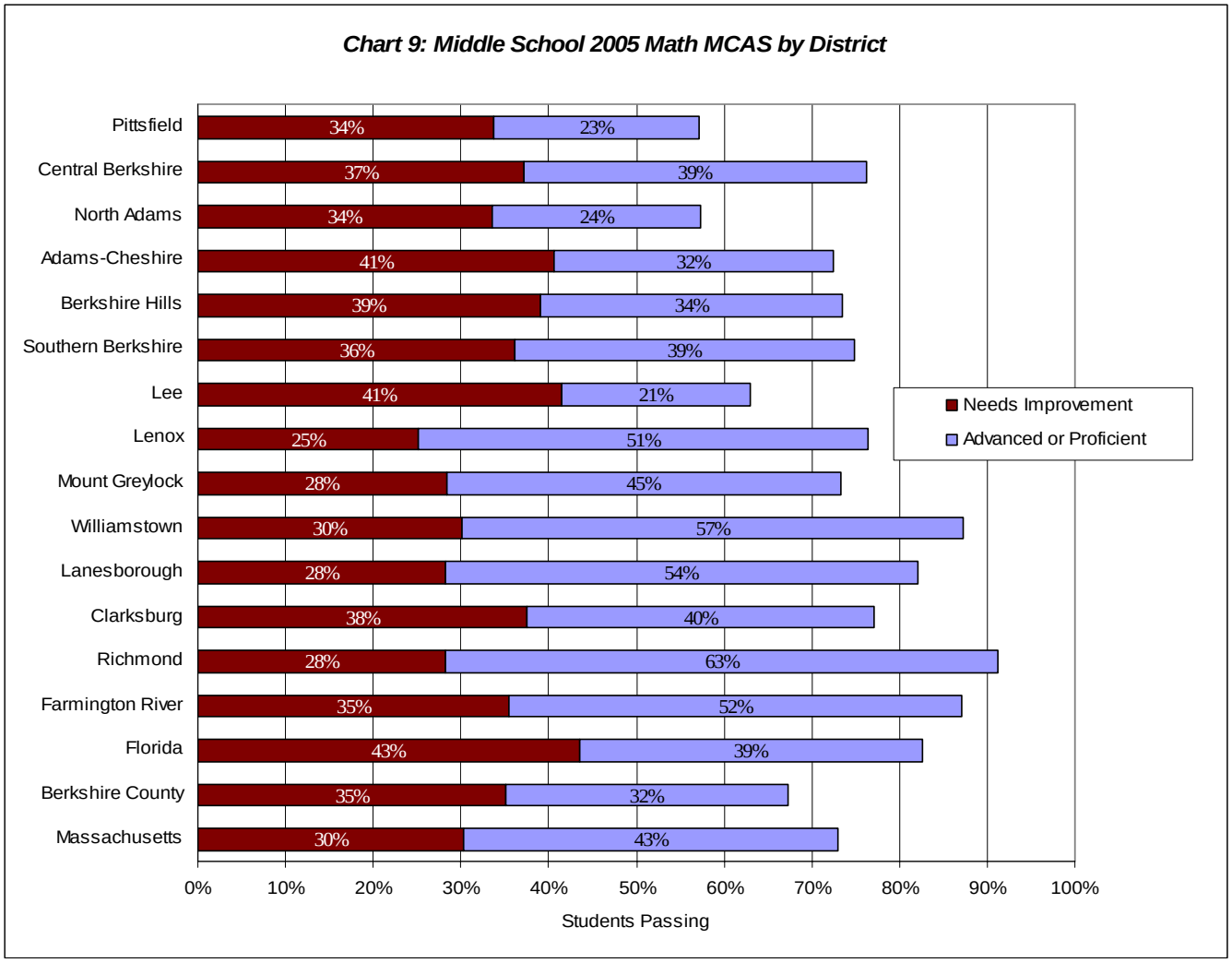
students scoring advanced or proficient, and Clarksburg (+19.6 percentage points) experienced the largest improvement from 2003.

Please see Table 25 and Chart 9 for more detail.

Table 25
Middle School Performance on Math MCAS

District	Percent Combined Advanced and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock*	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Savoy	-	-	-	-	-	-	-	-
Florida	38.5	38.1	39.1	0.7	73.1	81.0	82.6	9.5
Farmington River*	36.8	43.8	51.6	14.8	94.7	100.0	87.1	-7.6
Richmond	56.5	67.8	63.0	6.5	78.3	91.5	91.3	13.0
Clarksburg	20.0	21.4	39.6	19.6	55.0	64.3	77.1	22.1
Lanesborough*	45.0	34.7	53.8	8.8	75.0	81.6	82.1	7.1
Northern Berkshire	-	-	-	-	-	-	-	-
Williamstown*	58.4	39.0	57.1	-1.3	77.9	75.3	87.3	9.4
Mount Greylock**	39.3	45.0	45.0	5.7	71.4	84.7	73.3	1.9
Lenox	45.9	52.0	51.1	5.2	80.7	84.9	76.3	-4.4
Lee	32.0	23.0	21.5	-10.5	75.8	67.4	63.0	-12.8
Southern Berkshire	32.9	53.5	38.7	5.8	70.5	81.5	74.8	4.4
Berkshire Hills	22.1	28.6	34.3	12.2	59.9	66.8	73.4	13.5
Adams-Cheshire	35.0	34.7	31.7	-3.2	75.4	75.8	72.4	-2.9
North Adams	15.7	16.5	23.8	8.1	48.6	50.6	57.3	8.7
Central Berkshire	45.7	38.3	39.1	-6.5	78.8	76.1	76.3	-2.5
Pittsfield	21.1	20.6	23.4	2.3	53.5	55.7	57.1	3.6
Berkshire County	**30.0**	**30.5**	**32.3**	**2.2**	**64.4**	**67.1**	**67.3**	**2.9**
Massachusetts	39.6	40.6	42.7	3.1	70.3	73.0	73.0	2.7

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
*District does not provide education services in Grade 8; thus, data reflect performance on Grade 6 math MCAS test only.
**District does not provide education services in Grade 6; thus, data reflect performance on Grade 8 math MCAS test only



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
Hancock, Farmington River, Lanesborough, and Williamstown do not provide education services in Grade 8; thus, data reflect performance on Grade 6 math MCAS test only. Mount Greylock does not provide education services in Grade 6; thus, data reflect performance on Grade 8 math MCAS test only

High School Districts

ELA MCAS Performance

In 2005, 94.4% of Berkshire County students passed the Grade 10 ELA MCAS test; an increase of 2.7 percentage points from 2003. This figure is also 3.1 percentage points higher than the statewide average. Pittsfield (90.5%) is the only Berkshire district to have a pass rate lower than the state. Adams-Cheshire (92.6%) and North Adams (92.9%), in addition to Pittsfield, had lower pass rates than the county. These districts are on the larger end of the district size continuum in Berkshire County. Central Berkshire is the only district to experience a decline in pass rate from 2003 with a loss of 2.6 percentage points. Southern Berkshire posted the largest gains with an increase of 7.3 percentage points from 2003. Please see Table 26 for more detail.

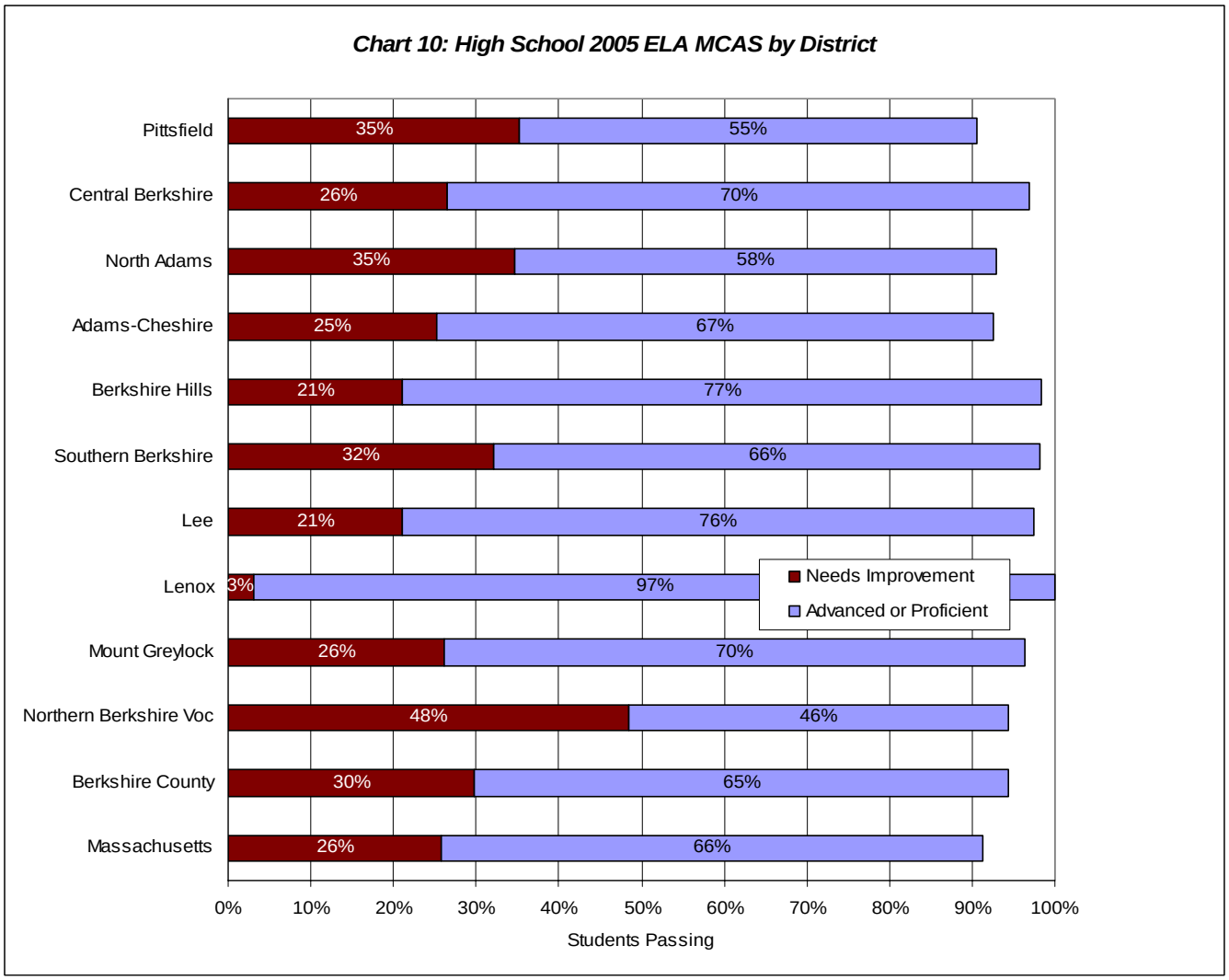
Berkshire County (64.6%) had a lower percentage of its students scoring advanced or proficient on the 2005 Grade 10 ELA MCAS than the state (65.5%). This was the first year that the state outperformed the county in these categories. As shown in Chart 10, Northern Berkshire Vocational (46.0%), North Adams (58.2%), and Pittsfield (55.4%) had fewer percentages of students scoring advanced or proficient than the county average. While Northern Berkshire is the smallest district in size that provides high school education, it is also the only district to provide technical training. The other two districts are on the larger end of the district size continuum.

Lenox, a medium sized district, was the only district to have a 100% pass rate in 2005. Additionally, 96.9% scored advanced or proficient, the highest among the Berkshire County districts; this figure is 17.3 percentage points higher than in 2003.

Table 26
High School Performance on ELA MCAS

District	Percent Combined Advanced and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock	-	-	-	-	-	-	-	-
Savoy	-	-	-	-	-	-	-	-
Florida	-	-	-	-	-	-	-	-
Farmington River	-	-	-	-	-	-	-	-
Richmond	-	-	-	-	-	-	-	-
Clarksburg	-	-	-	-	-	-	-	-
Lanesborough	-	-	-	-	-	-	-	-
Northern Berkshire	42.5	47.7	46.0	3.5	90.6	95.4	94.4	3.8
Williamstown	-	-	-	-	-	-	-	-
Mount Greylock	69.6	74.0	70.3	0.6	95.6	99.2	96.4	0.8
Lenox	79.7	76.0	96.9	17.3	98.3	93.3	100.0	1.7
Lee	60.6	67.0	76.3	15.7	97.0	91.8	97.4	0.4
Southern Berkshire	73.8	71.4	66.0	-7.8	90.8	98.2	98.1	7.3
Berkshire Hills	69.4	68.8	77.1	7.8	93.2	95.1	98.3	5.1
Adams-Cheshire	57.3	62.7	67.4	10.1	89.5	92.7	92.6	3.1
North Adams	56.7	61.4	58.2	1.4	87.2	84.8	92.9	5.7
Central Berkshire	86.0	71.8	70.5	-15.6	99.5	96.6	96.9	-2.6
Pittsfield	49.0	55.2	55.4	6.4	87.7	89.9	90.5	2.8
Berkshire County	**61.1**	**63.2**	**64.6**	**3.5**	**91.7**	**92.8**	**94.4**	**2.7**
Massachusetts	60.8	62.6	65.5	4.7	89.1	90.0	91.3	2.3

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Math MCAS Performance

In 2005, 89.6% of Berkshire County students passed the Grade 10 math MCAS. This figure is 3 percentage points higher than the statewide average. It also represents an increase of 8.6 percentage points from 2003. Four districts – Northern Berkshire Vocational (84.6%), Adams-Cheshire (89.6%), North Adams (85.1%), and Pittsfield (85.5%) had pass rates at or below the county average. While Northern Berkshire is the smallest district in size that provides high school education, it is also the only district to provide technical training. The other three districts are on the larger end of the district size continuum and are the same districts that had lower pass rates than the county on the Grade 10 ELA MCAS.

While the county had higher pass rates than the state on the Grade 10 math MCAS in 2003, 2004, and 2005, it had lower percentages scoring advanced or proficient. For example, in 2005, 61.7% of Berkshire County students scored advanced or proficient versus 62.3% in the state. Nevertheless, the county's average represents an increase of 12.4 percentage points from 2003. Similar to the performance on the 2005 Grade 10 ELA MCAS, Northern Berkshire Vocational (35.8%), North Adams (47.5%), and Pittsfield (56.0%) had the lowest percentage of students scoring in these categories. While Northern Berkshire is the smallest district in size that provides high

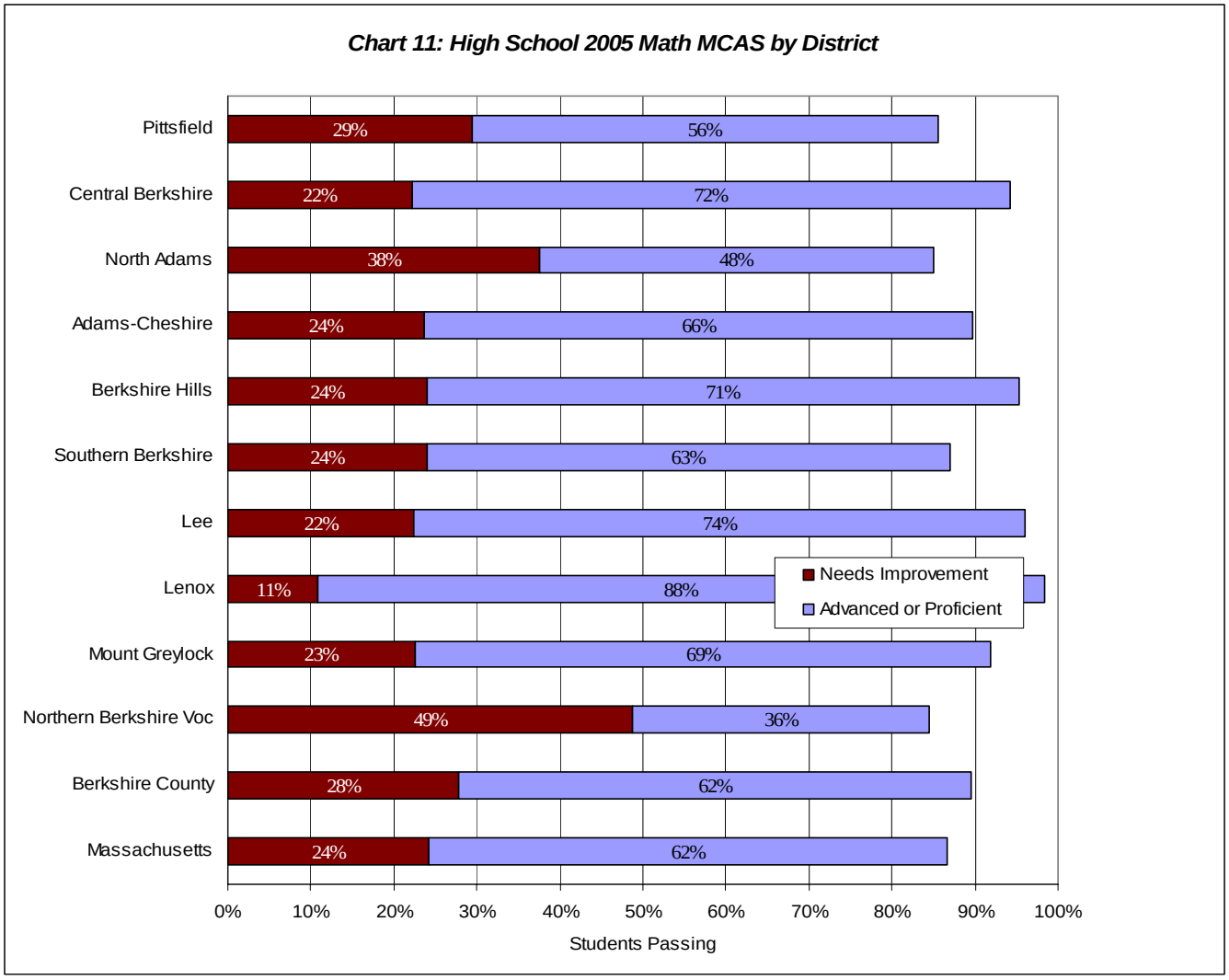
school education, it is also the only district to provide technical training. The other two districts are on the larger end of the district size continuum.

Adams-Cheshire, a district with a pass rate lower than the county average, experienced the largest gain in percentage scoring advanced or proficient from 2003 with an increase of 31 percentage points. As a result, it surpassed the countywide average scoring in these categories by 4.2 percentage points.

Table 27
High School Performance on Math MCAS

District	Percent Combined Advanced and Proficient				Percent Passing			
	2003	2004	2005	2003 - 2005 Change	2003	2004	2005	2003 - 2005 Change
Hancock	-	-	-	-	-	-	-	-
Savoy	-	-	-	-	-	-	-	-
Florida	-	-	-	-	-	-	-	-
Farmington River	-	-	-	-	-	-	-	-
Richmond	-	-	-	-	-	-	-	-
Clarksburg	-	-	-	-	-	-	-	-
Lanesborough	-	-	-	-	-	-	-	-
Northern Berkshire Voc	31.1	37.6	35.8	4.6	69.8	88.1	84.6	14.7
Williamstown	-	-	-	-	-	-	-	-
Mount Greylock	50.4	72.5	69.4	19.0	84.4	96.9	91.9	7.4
Lenox	66.1	66.2	87.7	21.6	96.6	93.2	98.5	1.9
Lee	46.3	57.7	73.7	27.4	80.6	88.7	96.1	15.5
Southern Berkshire	60.0	54.4	63.0	3.0	76.9	87.7	87.0	10.1
Berkshire Hills	53.4	63.7	71.3	18.0	81.1	93.8	95.3	14.2
Adams-Cheshire	34.9	49.1	65.9	31.0	79.4	90.0	89.6	10.3
North Adams	44.1	52.3	47.5	3.5	75.5	78.0	85.1	9.6
Central Berkshire	81.3	71.8	72.0	-9.3	96.8	94.4	94.3	-2.5
Pittsfield	41.5	42.9	56.0	14.6	77.0	82.9	85.5	8.5
Berkshire County	**49.3**	**54.5**	**61.7**	**12.4**	**81.0**	**88.1**	**89.6**	**8.6**
Massachusetts	51.1	57.1	62.3	11.2	79.8	85.6	86.6	6.7

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/



Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Effectiveness Index (EI): Berkshire County Districts

Some school districts might achieve at relatively high rates, but these districts could be better off socio-economically, and this may help to explain their high MCAS scores. Other districts may appear to achieve moderate overall success, but they in fact achieve well beyond that level when one considers the socioeconomic status (SES) of their students. In other words, achievement alone does not tell the full story; achievement also needs to be considered in light of student characteristics.

The Effectiveness Index (EI) measures the extent to which individual districts meet, exceed or fail to meet or exceed their expected performance given the socioeconomic composition of their student population and the strength of the relationship between socioeconomic factors and MCAS performance in districts statewide. Districts that score above or below a level predicted based on the performance of statewide districts in educating these same types of students are judged as over or under-performing.

A linear regression model was developed to compute the EI. This model used percentage of low-income students as a proxy for socioeconomic background. In addition, the number of test takers was included as a factor in an effort to assess whether district size was correlated with MCAS achievement.[136]

The results of this analysis reveal that district size had little to no correlation with test performance in Berkshire County, a finding that was replicated in every test grade examined. The presence of low-income students, on the other hand, was highly correlated with district test performance – the more low-income students, the lower the test performance. While the results of this district level analysis highlight the importance of student socioeconomic status and provide important context to educational policy discussions in Berkshire County, it does not consider some potentially important correlates of test performance, particularly *school* characteristics such as teacher quality or student-teacher ratio. Accordingly, the reader should exercise caution when interpreting the data, tables and charts presented in the pages that follow. Please see Appendix A for more detail on the regression analysis.

Please see Table 12 on page 37 for the percentage of low-income students in each of the Berkshire County districts during FY03 – FY06, which correspond to academic years 2002-2003, 2003-2004, 2004-2005, and 2005-2006 respectively.[137]

Residual Values

When using a linear regression approach, the difference between an actual score on a test and the predicted score can be computed. This is called the "residual" value and it can be either a positive or negative number. In this case, a positive residual value indicates that a particular district performed better on that test than their socio-demographic background would predict. For example, if a particular district has 40% of its students scoring advanced or proficient on the Grade 10 ELA MCAS test, but because of a high SES rate, they are predicted to only have 30% scoring at these performance levels, their residual score is a positive 10. In other words, they are performing 10 percentage points higher than what would be predicted based on the number of lower income students they serve and given the relationship between the presence of these types of students and MCAS achievement in school districts statewide. Residual values that are positive indicate districts that "over-perform", while negative residual values indicate districts that "under-perform."

One note of caution to bear in mind when interpreting these residual values involves the "power of small numbers." Since EI scores are modeled using SES, districts that serve very small numbers of low income students face a higher "hurdle" to over-perform than a district that serves a large number of low income students. In some cases, relatively small changes in very small, high income districts can yield large negative residual values which can make it appear that performance is worse than it may in fact be. This may be the case in Lenox which, as can be seen below, appears to be underperforming despite very high absolute test performance. Accordingly, it is important to keep in mind that the best-case scenario for performance is a district that has both high actual scores and exceeds its predicted performance.

Grade 3 MCAS Performance

As shown in Table 28, eight Berkshire County districts performed better on the 2006 Grade 3 Reading MCAS than their socio-demographic background would predict. Williamstown (9.8 percentage points), Richmond (7.0 percentage points), Central Berkshire (6.9 percentage points), and Pittsfield (6.7 percentage points) were the top four performers. Savoy, in contrast, had the largest negative residual value (-32 percentage points) on the 2006 Grade 3 Reading MCAS test.

[136] The low-income selected student population indicates the percent of enrollment who meet any one of the following definitions of low income: the student is eligible for free or reduced price lunch; or the student receives Transitional Aid to Families benefits; or the student is eligible for food stamps.
[137] For purposes of computing the EI, 2006 data were used.

On the 2006 Grade 3 math MCAS test, only three districts – Central Berkshire (11.6 percentage points), North Adams (6.1 percentage points), and Lanesborough (4.8 percentage points) over-performed their predicted scores. As a result, these three districts over-performed on both Grade 3 MCAS tests.

Four districts – Richmond (-25.1 percentage points), Adams-Cheshire (-23.3 percentage points), Savoy (-22.7 percentage points), and Lenox (-21.2 percentage points) underperformed their predicted math MCAS scores, based on what their socio-demographic background would predict, by more than 20 percentage points.

Residual values by district for the 2006 Grade 3 Reading and math MCAS tests are displayed in Table 28. The districts are arranged from smallest to largest in size based on total district enrollment in FY06.

Table 28
Grade 3 Combined Above Proficient and Proficient Performance on 2006 MCAS

District	Low Income (%)	2006 ELA MCAS			2006 Math MCAS		
		Test Takers (N)	Predicted (%)	Residual	Test Takers (N)	Predicted (%)	Residual
Hancock	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Savoy	1.3	10	72.1	-32.1	10	0.6	-22.7
Florida	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Farmington River	32.7	19	55.1	-18.3	19	0.5	-5.9
Richmond	6.2	17	69.5	7.0	17	0.6	-25.1
Clarksburg	22.4	20	60.7	-5.7	20	0.5	-7.8
Lanesborough	9.6	44	67.6	0.5	44	0.6	4.8
Williamstown	14.7	71	64.9	9.8	72	0.6	-0.9
Northern Berkshire	-	-	-	-	-	-	-
Mount Greylock	-	-	-	-	-	-	-
Lenox	6.1	56	69.5	-17.7	56	0.6	-21.2
Lee	26.1	58	58.7	-10.4	57	0.5	-7.2
Southern Berkshire	17.7	72	63.3	0.6	73	0.6	-12.6
Berkshire Hills	16.4	70	64.0	3.2	69	0.6	-3.5
Adams-Cheshire	30.5	140	56.3	-17.1	140	0.5	-23.3
North Adams	43.9	125	49.1	2.1	125	0.4	6.1
Central Berkshire	21.0	152	61.5	6.9	152	0.5	11.6
Pittsfield	40.6	464	50.9	6.7	465	0.4	-0.9

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
#N/A: Number not available. Class size too small

Grade 5 MCAS Performance

On the 2006 Grade 5 ELA MCAS test, only two Berkshire County districts, Farmington River (16.1 percentage points) and Lenox (3.5 percentage points), over-performed what their socio-demographic background would predict. Farmington River (23.3 percentage points) and Lenox (10.2 percentage points) were also the top performers on the Grade 5 math MCAS test administered in 2006. They were the only districts to over-perform on both Grade 5 MCAS tests. Florida had very large negative residual values on both the 2006 Grade 5 ELA and math MCAS tests (ELA: -27.1 percentage points; math: -24.6 percentage points). Berkshire Hills did as well (ELA: -15.4 percentage points; math: -25.8 percentage points). Please see Table 29 for more detail.

Table 29
Grade 5 Combined Advanced and Proficient Performance on 2006 MCAS

District	Low Income (%)	2006 ELA MCAS			2006 Math MCAS		
		Test Takers (N)	Predicted (%)	Residual	Test Takers (N)	Predicted (%)	Residual
Hancock	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Savoy	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Florida	26.1	12	60.4	-27.1	12	41.3	-24.6
Farmington River	32.7	18	56.1	16.1	18	37.8	23.3
Richmond	6.2	18	73.4	-1.2	18	51.9	-13.0
Clarksburg	22.4	30	62.8	-9.5	30	43.3	-10.0
Lanesborough	9.6	40	71.2	-1.2	40	50.1	-17.6
Williamstown	14.7	71	67.9	-4.5	71	47.6	6.0
Northern Berkshire	-	-	-	-	-	-	-
Mount Greylock	-	-	-	-	-	-	-
Lenox	6.1	61	73.5	3.5	61	52.1	10.2
Lee	26.1	55	60.4	-11.3	55	41.5	-12.4
Southern Berkshire	17.7	59	65.9	-6.6	60	45.9	5.7
Berkshire Hills	16.4	72	66.8	-15.4	72	46.7	-25.8
Adams-Cheshire	30.5	133	57.6	-3.5	133	39.4	-11.6
North Adams	43.9	130	48.8	-5.8	134	32.3	-4.0
Central Berkshire	21.0	138	63.8	-0.8	140	44.5	4.1
Pittsfield	40.6	488	51.3	-5.4	490	35.4	-5.6

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/
#N/A: Number not available. Class size too small

Grade 8 MCAS Performance

As shown in Table 30 below, on the 2006 Grade 8 ELA MCAS test, six districts performed better than their socio-demographic background would predict. Florida was the top performer with a residual value of positive 5.5 points. North Adams (-12.7 percentage points), Pittsfield (-9.8 percentage points), and Clarksburg (-7.0 percentage points) were the low performers on this test. On the 2006 math MCAS, four districts performed better than their predicted scores. Richmond was the top performer with a residual value of positive 24.7 points. Florida, on the other hand, had the largest negative residual value, indicating that it under-performed predicted scores by 41.9 percentage points.

Only three districts – Richmond, Lenox, and Southern Berkshire over-performed on both Grade 8 MCAS tests.

Table 30
Grade 8 Combined Advanced and Proficient Performance on 2006 MCAS

District	Low Income (%)	2006 ELA MCAS			2006 Math MCAS		
		Test Takers (N)	Predicted (%)	Residual	Test Takers (N)	Predicted (%)	Residual
Hancock	-	-	-	-	-	-	-
Savoy	-	-	-	-	-	-	-
Florida	26.1	8	94.5	5.5	5	61.9	-41.9
Farmington River	-	-	-	-	-	-	-
Richmond	6.2	22	98.5	1.5	18	75.3	24.7
Clarksburg	22.4	17	95.2	-7.0	13	64.3	4.9
Lanesborough	-	-	-	-	-	-	-
Williamstown	-	-	-	-	-	-	-
Northern Berkshire	-	-	-	-	-	-	-
Mount Greylock	19.2	102	95.2	-2.1	75	66.2	-2.2
Lenox	6.1	73	98.2	0.5	51	75.2	3.2
Lee	26.1	58	94.1	-2.8	44	61.7	-18.5
Southern Berkshire	17.7	61	95.9	0.9	46	67.4	13.0
Berkshire Hills	16.4	111	95.8	0.6	93	68.1	-6.8
Adams-Cheshire	30.5	105	92.9	-0.5	81	58.6	-6.7
North Adams	43.9	119	90.0	-12.7	103	49.4	-24.2
Central Berkshire	21.0	169	94.4	3.3	106	64.9	-5.5
Pittsfield	40.6	349	88.9	-9.8	313	50.8	-15.0

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Grade 10 MCAS Performance

Four districts – Lenox (10.4 percentage points), Mount Greylock (9.3 percentage points), Central Berkshire (3.4 percentage points), and Adams-Cheshire (0.5 percentage points) performed better on the 2006 Grade 10 ELA MCAS test than their socio-demographic background would predict.

On the 2006 Grade 10 math MCAS test, three districts – Mount Greylock (14.4 percentage points), Lenox (2.7 percentage points), and Lee (1.6 percentage points) over-performed their predicted scores. Mount Greylock and Lenox were the only two districts to over-perform on both Grade 10 MCAS tests. Please see Table 31 for more detail.

Table 31
Grade 10 Combined Advanced and Proficient Performance on 2006 MCAS

District	Low Income (%)	2006 ELA MCAS			2006 Math MCAS		
		Test Takers (N)	Predicted (%)	Residual	Test Takers (N)	Predicted (%)	Residual
Hancock	-	-	-	-	-	-	-
Savoy	-	-	-	-	-	-	-
Florida	-	-	-	-	-	-	-
Farmington River	-	-	-	-	-	-	-
Richmond	-	-	-	-	-	-	-
Clarksburg	-	-	-	-	-	-	-
Lanesborough	-	-	-	-	-	-	-
Williamstown	-	-	-	-	-	-	-
Northern Berkshire	28.9	128	67.5	-17.5	128	63.7	-11.3
Mount Greylock	19.2	111	73.5	9.3	110	70.2	14.4
Lenox	6.1	75	81.6	10.4	76	78.9	2.7
Lee	26.1	92	69.2	-0.8	91	65.4	1.6
Southern Berkshire	17.7	56	74.4	-3.0	56	71.0	-6.7
Berkshire Hills	16.4	147	75.3	-4.6	149	72.2	-6.4
Adams-Cheshire	30.5	103	66.5	0.5	103	62.5	-4.3
North Adams	43.9	125	58.2	-1.4	124	53.5	-2.7
Central Berkshire	21.0	199	72.5	3.4	196	69.3	-4.5
Pittsfield	40.6	501	60.7	-6.6	501	57.1	-7.8

Source: Massachusetts Department of Education website, http://profiles.doe.mass.edu/

Overall MCAS Performance

Districts Serving Grade K-12

Eight districts in Berkshire County provide complete K-12 educational services. They are Lee, Lenox, Pittsfield, North Adams, Southern Berkshire, Berkshire Hills, Adams-Cheshire, and Central Berkshire. The first four are local districts and the latter four are regional districts. Students in these districts participated in all eight MCAS tests, four for ELA and four for math. The performance of the remaining ten Berkshire County districts cannot be compared with these districts through overall scores. Rather, they will be compared with districts serving the same grades.

Tables 32 and 33 display the composite points over or under the predicted score (earning advanced or proficient) for the Grade 3, 5, 8, and 10 ELA and math MCAS tests in the eight Berkshire County districts that took all eight tests. In addition, using residual values, each district was rank-ordered by the extent to which they over-performed or under-performed expectations given the socioeconomic status of the students they serve.

Based on overall ELA performance in 2006, none of the Berkshire districts over-performed on all four tests. Central Berkshire (12.8 percentage points) is the only district to over-perform overall, but it under-performed on one of the tests (Grade 5 ELA MCAS). Central Berkshire (5.7 percentage points) is also the only Berkshire district to over-perform overall on math performance; however, it under-performed on two of the tests (Grade 8 and Grade 10 math MCAS). Lenox had the lowest SES rate in 2006 among these districts. Thus, it had the highest hurdle to over-perform its demographic background. Nevertheless, Lenox over-performed on all but one of the eight MCAS tests (Grade 3 ELA). Please see Tables 32 and 33 for more detail.

Table 32
Rank of Districts Serving Grades K-12 on 2006 ELA MCAS Tests

Rank	District	Points Over/Under Predicted Score
1	Central Berkshire	12.8
2	Lenox	-3.3
3	Southern Berkshire	-8.1
4	Pittsfield	-15.1
5	Berkshire Hills	-16.2
6	North Adams	-17.8
7	Adams-Cheshire	-20.6
8	Lee	-25.3

Table 33
Rank of Districts Serving Grades K-12 on 2006 Math MCAS Tests

Rank	District	Points Over/Under Predicted Score
1	Central Berkshire	5.7
2	Southern Berkshire	-0.6
3	Lenox	-5.1
4	Lee	-14.8
5	North Adams	-24.8
6	Pittsfield	-29.5
7	Berkshire Hills	-42.5
8	Adams-Cheshire	-45.9

Districts Serving Grade K-8

Two districts in Berkshire County provide K-8 educational services within their borders. They are Richmond and Clarksburg. As a result, students in these districts participated in six MCAS tests, three for ELA and three for math. The performance of the remaining Berkshire County districts cannot be compared with these districts through overall scores.

Tables 34 and 35 display the composite points over or under the predicted score (earning advanced or proficient) for the Grade 3, 5, and 8 ELA and math MCAS tests in the two Berkshire County districts that took the six tests. In addition, using residual values, each district was rank-ordered by the extent to which they over-performed or under-performed expectations given the socioeconomic status of the students they serve.

Based on overall ELA performance in 2006, neither Berkshire district over-performed on the three tests. Richmond (7.3 percentage points) is the only district to over-perform overall, but it under-performed on one of the tests (Grade 5 ELA MCAS). Neither district over-performed overall on math performance; they each under-performed on the Grade 3 and 5 ELA MCAS.

Table 34
Rank of Districts Serving Grades K-8 on 2006 ELA MCAS Tests

Rank	District	Points Over/Under Predicted Score
1	Richmond	7.3
2	Clarksburg	-22.2

Table 35
Rank of Districts Serving Grades K-8 on 2006 math MCAS Tests

Rank	District	Points Over/Under Predicted Score
1	Clarksburg	-12.9
2	Richmond	-13.4

Districts Serving Grade K-6

Five districts in Berkshire County provide K-6 educational services within their borders. They are Hancock, Florida, Farmington River, Lanesborough, and Williamstown. As a result, students in these districts participated in four MCAS tests, two for ELA and two for math. The performance of the remaining Berkshire County districts cannot be compared with these districts through overall scores.

Tables 36 and 37 display the composite points over or under the predicted score (earning advanced or proficient) for the Grade 3 and 5 ELA and math MCAS tests in the five Berkshire County districts that took the four tests. In addition, using residual values, each district was rank-ordered by the extent to which they over-performed or under-performed expectations given the socioeconomic status of the students they serve.

Based on overall ELA performance in 2006, none of the Berkshire districts over-performed on both tests. Williamstown (5.3 percentage points) is the only district to over-perform overall, but it under-performed on one of the tests (Grade 5 ELA MCAS). Farmington River (17.4 percentage points) and Williamstown (5.1 percentage points) over-performed overall on math performance; however, they each under-performed on one of the tests.

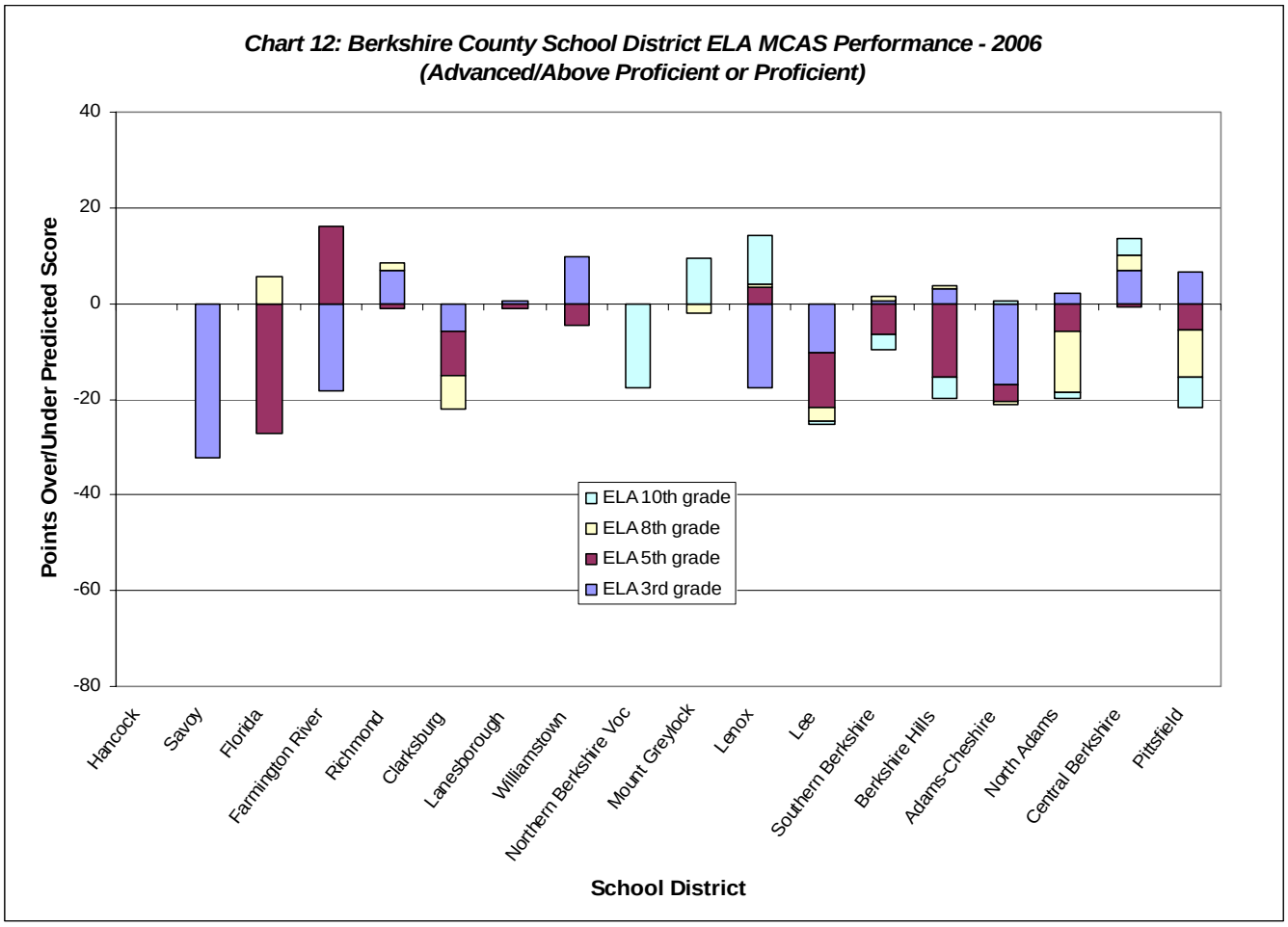
Table 36
Rank of Districts Serving Grades K-6 on 2006 ELA MCAS Tests

Rank	District	Points Over/Under Predicted Score
1	Williamstown	5.3
2	Lanesborough	-0.7
3	Farmington River	-2.2
4	Florida	-21.6
Data not available	Hancock	

Table 37
Rank of Districts Serving Grades K-6 on 2006 Math MCAS Tests

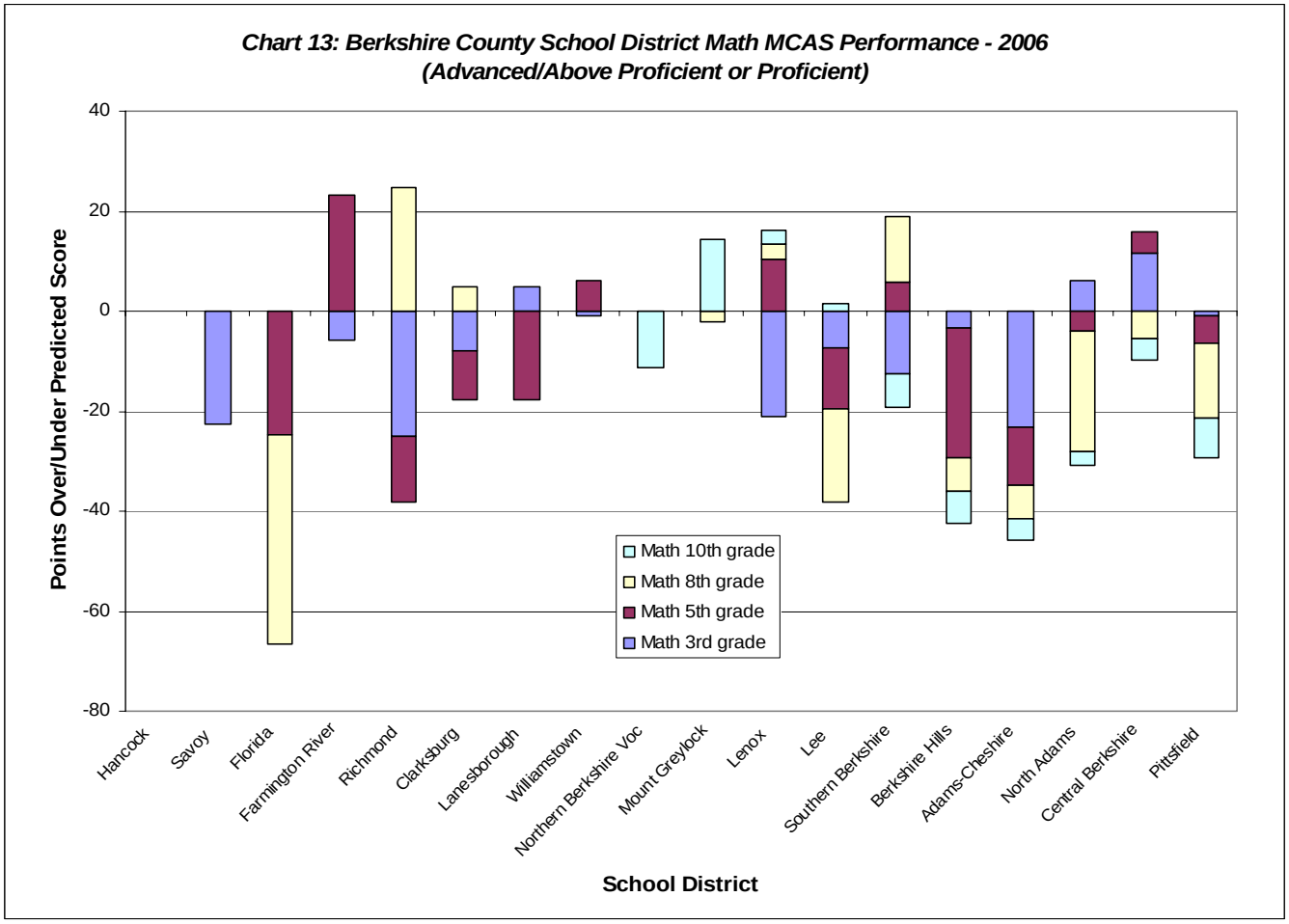
Rank	District	Points Over/Under Predicted Score
1	Farmington River	17.4
2	Williamstown	5.1
3	Lanesborough	-12.8
4	Florida	-66.5
Data not available	Hancock	

Chart 12 displays the composite points over or under the predicted advanced/above proficient or proficient score for each district on the Grade 3, 5, 8, and 10 ELA MCAS tests taken in 2006. Each bar shows the contribution that each grade level test had to the total number of points either over or under the predicted score.



Source: Calculations by University of Massachusetts Donahue Institute

Chart 13 displays the composite points over or under the predicted advanced/above proficient or proficient score for each district on the Grade 3, 5, 8, and 10 ELA MCAS test administered in 2006. Each bar shows the contribution that each grade level test had to the total number of points either over or under the predicted score.



Source: Calculations by University of Massachusetts Donahue Institute

High School Dropout Rates and Graduation Rates

With five years of student-level data from the state's Student Information Management System (SIMS), the state DOE is now able to track an individual class from the initial entrance into 9th grade through to graduation. In October 2006, the state DOE finalized its methodology for calculating high school graduation rates and in the winter of 2007 released the first cohort graduation rate for the Class of 2006.[138] As a result, there are no trends in graduation rates to report at this time.

As shown in Tables 38 and 39, during FY06, 3.4% (209) of students in grades 9-12 in Berkshire County dropped out of school, down from 4.9% (308 students) in FY03. This 2006 dropout rate was one-tenth of a percentage point higher than the rate for the state. Pittsfield and North Adams saw the greatest decline in the number of their students in grades 9-12 dropping out of school each school year between FY03 and FY06.

Three of the ten districts serving high school students in the county had a higher four-year dropout rate (cumulative effect of four years of students dropping out of school) for their Classes of 2006 than the 11.7% rate in the state. These districts were Pittsfield (24.1%), North Adams (15.6%), and Adams-Cheshire (13.2%). Lenox (1.5%) had the lowest four-year dropout rate in the county. Please see Table 40 for more detail.

Statewide, 79.9% of the students who entered high school as ninth graders in 2002 or transferred into the Class of 2006 graduated within four years. Eight of the ten districts serving high school students in Berkshire County exceeded the state's graduation rate. The districts with the lowest high school graduation rates were also the ones with the highest four-year dropout rates. Pittsfield had the lowest graduation rate in the county, with a rate of 67.6%. Lenox (94.0%) and Southern Berkshire Regional (94.0%) had the highest graduation rates in the county. Please see Table 41 for more detail.

Districts in Tables 38-41 are arranged from smallest to largest in terms of student enrollment in FY06, which corresponds to the 2005-2006 school year.

[138] http://www.doe.mass.edu/infoservices/reports/gradrates/calculating_overview.html; http://www.doe.mass.edu/infoservices/reports/gradrates/

Table 38
Number of High School Dropouts

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change	Percent Change
Hancock	-	-	-	-	-	-
Savoy	-	-	-	-	-	-
Florida	-	-	-	-	-	-
Farmington River	-	-	-	-	-	-
Richmond	-	-	-	-	-	-
Clarksburg	-	-	-	-	-	-
Lanesborough	-	-	-	-	-	-
Williamstown	-	-	-	-	-	-
Northern Berkshire	5	12	2	3	-2	-40.0
Mount Greylock	3	3	8	11	8	266.7
Lenox	0	1	0	0	0	0.0
Lee	0	9	11	4	4	-
Southern Berkshire	8	10	7	8	0	0.0
Berkshire Hills	5	15	14	14	9	180.0
Adams-Cheshire	31	26	19	12	-19	-61.3
North Adams	60	36	49	29	-31	-51.7
Central Berkshire	29	26	22	16	-13	-44.8
Pittsfield	167	156	146	112	-55	-32.9
Berkshire County	308	294	278	209	-99	-32.1
Massachusetts	9,389	10,633	11,145	9,910	521	5.5

Source: Massachusetts Department of Education Indicators Report

Table 39
Dropout Rates

District	FY03	FY04	FY05	FY06	FY03 – FY06	
					Change in Percentage Points	Percent Change
Hancock	-	-	-	-	-	-
Savoy	-	-	-	-	-	-
Florida	-	-	-	-	-	-
Farmington River	-	-	-	-	-	-
Richmond	-	-	-	-	-	-
Clarksburg	-	-	-	-	-	-
Lanesborough	-	-	-	-	-	-
Williamstown	-	-	-	-	-	-
Northern Berkshire	1.2	2.7	0.4	0.6	-0.6	-50.0
Mount Greylock	0.6	0.6	1.7	2.5	1.9	316.7
Lenox	0.0	0.4	0.0	0.0	0.0	0.0
Lee	0.0	2.6	3.3	1.2	1.2	-
Southern Berkshire	3.0	3.8	2.9	3.6	0.6	20.0
Berkshire Hills	0.8	2.3	2.3	2.2	1.4	175.0
Adams-Cheshire	5.9	5.0	3.9	2.5	-3.4	-57.6
North Adams	10.0	5.8	8.0	5.0	-5.0	-50.0
Central Berkshire	3.8	3.3	2.9	2.3	-1.5	-39.5
Pittsfield	8.6	8.0	7.3	5.6	-3.0	34.9
Berkshire County	4.9	4.6	4.5	3.4	-1.5	-30.6
Massachusetts	3.3	3.7	3.8	3.3	0.0	0.0

Source: Massachusetts Department of Education Indicators Report

Table 40
Four-Year Dropout Rate

District	Class of 2006
Hancock	-
Savoy	-
Florida	-
Farmington River	-
Richmond	-
Clarksburg	-
Lanesborough	-
Williamstown	-
Northern Berkshire	-
Mount Greylock	4.8
Lenox	1.5
Lee	6.1
Southern Berkshire	6.0
Berkshire Hills	4.9
Adams-Cheshire	13.2
North Adams	15.6
Central Berkshire	11.4
Pittsfield	24.1
Berkshire County	-
Massachusetts	11.7

Source: Massachusetts Department of Education Indicators Report, http://profiles.doe.mass.edu/gradrates.aspx

Table 41
Graduation Rates

District	Class of 2006
Hancock	-
Savoy	-
Florida	-
Farmington River	-
Richmond	-
Clarksburg	-
Lanesborough	-
Williamstown	-
Northern Berkshire	91.8
Mount Greylock	93.5
Lenox	94.0
Lee	87.9
Southern Berkshire	94.0
Berkshire Hills	90.1
Adams-Cheshire	80.2
North Adams	74.7
Central Berkshire	85.1
Pittsfield	67.6
Berkshire County	-
Massachusetts	79.9

Source: Massachusetts Department of Education Indicators Report

Conclusion

The preceding analysis suggests that increasing size of school districts in Berkshire County in an effort to achieve cost savings and improve student outcomes would not in and of itself lead to the achievement of these dual goals. There does appear however, potential benefits to be gained by considering both the expansion of existing and the establishment of new educational partnerships and collaboratives.

Our literature review found that many districts across the Commonwealth have benefited from participation in Educational Collaboratives which have been more widely utilized in other regions of the state and offer the potential to help the region's school districts to:

- Save money
- Maintain local control over education functions
- Preserve existing school district structures
- Improve educational services for districts of all sizes
- Pool resources
- Eliminate duplication
- Streamline some of their functions and services

Opportunities to collaborate with the region's higher educational institutions should also be considered. For example, partnerships with regional higher educational institutions could provide "economies of scale" in key areas including: research and analysis, professional development, as well as educational opportunities for gifted students.

Finally, our analysis revealed a substantial achievement gap between the region's lower-income students and the student population as a whole. This achievement gap was present across the County, in districts that were large, small, urban and rural. These findings make it clear that whatever new policies and programs County leaders choose to pursue, improving the educational outcomes of the region's low-income students should be a top priority.

Appendix A

Performance Data

SUMMARY OUTPUT for ELA Grade 3

Regression Statistics	
Multiple R	0.7562
R Square	0.5719
Adjusted R Square	0.5690
Standard Error	0.0902
Observations	299.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	3.2178	1.6089	197.6754	0.0000
Residual	296.0000	2.4092	0.0081		
Total	298.0000	5.6271			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.7283	0.0074	98.9109	0.0000	0.7138	0.7428	0.7138	0.7428
Test takers	0.0000	0.0000	0.1152	0.9084	0.0000	0.0000	0.0000	0.0000
Low-income	-0.5407	0.0272	-19.8614	0.0000	-0.5943	-0.4871	-0.5943	-0.4871

SUMMARY OUTPUT for Math Grade 3

Regression Statistics	
Multiple R	0.6085
R Square	0.3703
Adjusted R Square	0.3661
Standard Error	0.1180
Observations	299.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	2.4231	1.2116	87.0357	0.0000
Residual	296.0000	4.1204	0.0139		
Total	298.0000	6.5436			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.6335	0.0096	65.7916	0.0000	0.6146	0.6525	0.6146	0.6525
Test takers	0.0000	0.0000	0.2618	0.7937	0.0000	0.0000	0.0000	0.0000
Low-income	-0.4695	0.0356	-13.1864	0.0000	-0.5395	-0.3994	-0.5395	-0.3994

SUMMARY OUTPUT for ELA Grade 5

Regression Statistics	
Multiple R	0.8167
R Square	0.6669
Adjusted R Square	0.6647
Standard Error	0.0918
Observations	304.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	5.0832	2.5416	301.3690	0.0000
Residual	301.0000	2.5385	0.0084		
Total	303.0000	7.6217			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.7746	0.0079	98.5114	0.0000	0.7591	0.7901	0.7591	0.7901
Test takers	0.0000	0.0000	0.5274	0.5983	0.0000	0.0000	0.0000	0.0000
Low-income	-0.6546	0.0277	-23.5967	0.0000	-0.7092	-0.6000	-0.7092	-0.6000

SUMMARY OUTPUT for Math Grade 5

Regression Statistics	
Multiple R	0.6402
R Square	0.4099
Adjusted R Square	0.4060
Standard Error	0.1234
Observations	304.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	3.1836	1.5918	104.5459	0.0000
Residual	301.0000	4.5830	0.0152		
Total	303.0000	7.7666			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.5507	0.0106	52.1317	0.0000	0.5299	0.5715	0.5299	0.5715
Test takers	0.0000	0.0000	1.5522	0.1217	0.0000	0.0001	0.0000	0.0001
Low-income	-0.5290	0.0373	-14.1890	0.0000	-0.6023	-0.4556	-0.6023	-0.4556

SUMMARY OUTPUT for ELA Grade 8

Regression Statistics	
Multiple R	0.7485
R Square	0.5602
Adjusted R Square	0.5570
Standard Error	0.0438
Observations	277.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	0.6695	0.3348	174.5404	0.0000
Residual	274.0000	0.5255	0.0019		
Total	276.0000	1.1950			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.0000	0.0042	237.0843	0.0000	0.9917	1.0083	0.9917	1.0083
Test takers	-0.0001	0.0000	-6.8766	0.0000	-0.0001	-0.0001	-0.0001	-0.0001
Low-income	-0.2074	0.0133	-15.5997	0.0000	-0.2336	-0.1813	-0.2336	-0.1813

SUMMARY OUTPUT for Math Grade 8

Regression Statistics	
Multiple R	0.6847
R Square	0.4688
Adjusted R Square	0.4649
Standard Error	0.1501
Observations	277.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	5.4518	2.7259	120.9134	0.0000
Residual	274.0000	6.1771	0.0225		
Total	276.0000	11.6288			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.7957	0.0136	58.4275	0.0000	0.7689	0.8225	0.7689	0.8225
Test takers	0.0000	0.0000	-1.1167	0.2651	-0.0001	0.0000	-0.0001	0.0000
Low-income	-0.6774	0.0466	-14.5489	0.0000	-0.7691	-0.5857	-0.7691	-0.5857

SUMMARY OUTPUT for ELA Grade 10

Regression Statistics	
Multiple R	0.7685
R Square	0.5905
Adjusted R Square	0.5876
Standard Error	0.1023
Observations	280.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	4.1768	2.0884	199.7340	0.0000
Residual	277.0000	2.8963	0.0105		
Total	279.0000	7.0731			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.8533	0.0096	88.4659	0.0000	0.8343	0.8723	0.8343	0.8723
Test takers	0.0000	0.0000	0.5192	0.6040	0.0000	0.0001	0.0000	0.0001
Low-income	-0.6204	0.0320	-19.3649	0.0000	-0.6835	-0.5574	-0.6835	-0.5574

SUMMARY OUTPUT for Math Grade 10

Regression Statistics	
Multiple R	0.7838
R Square	0.6144
Adjusted R Square	0.6116
Standard Error	0.1048
Observations	280.0000

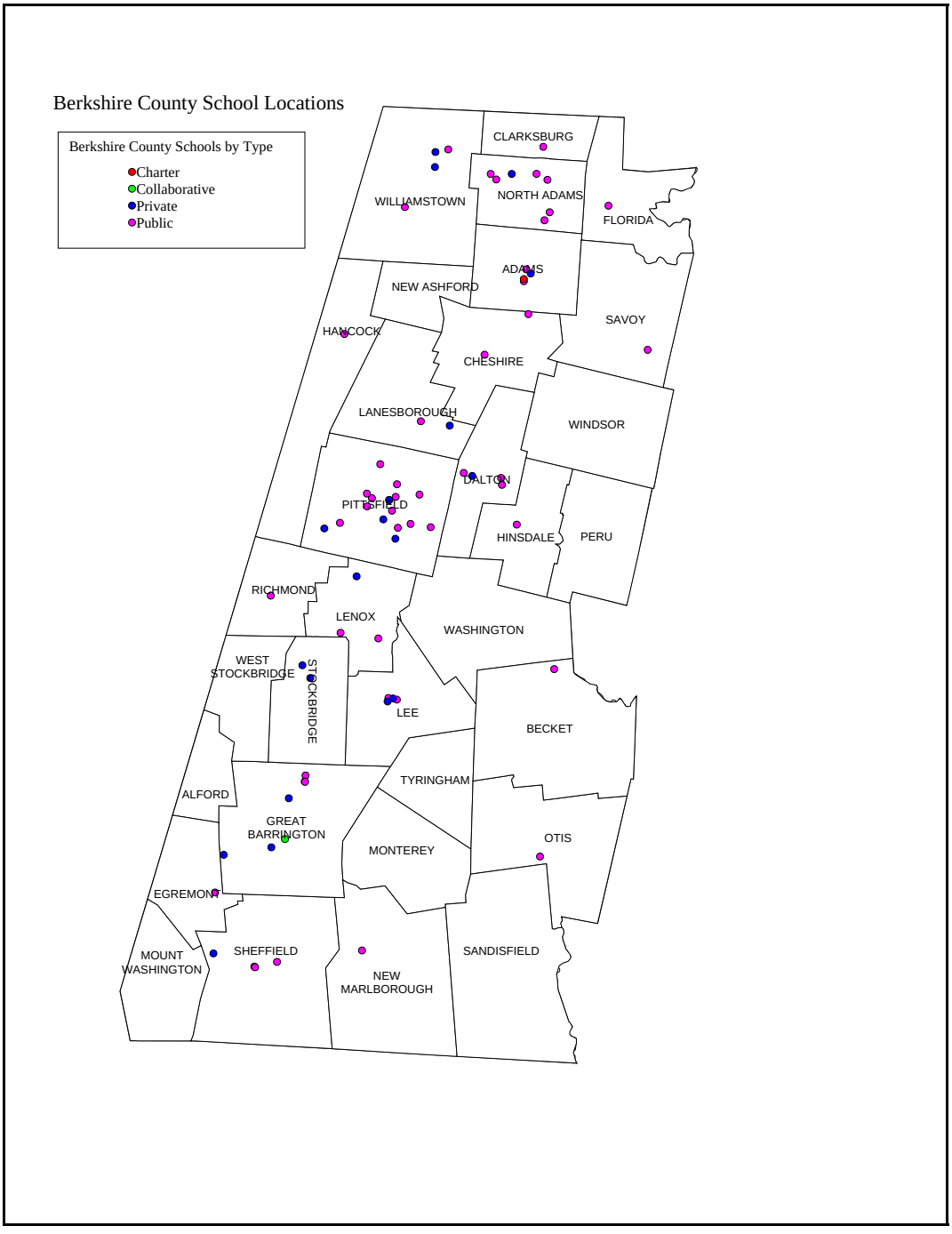
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.0000	4.8481	2.4240	220.6583	0.0000
Residual	277.0000	3.0430	0.0110		
Total	279.0000	7.8911			

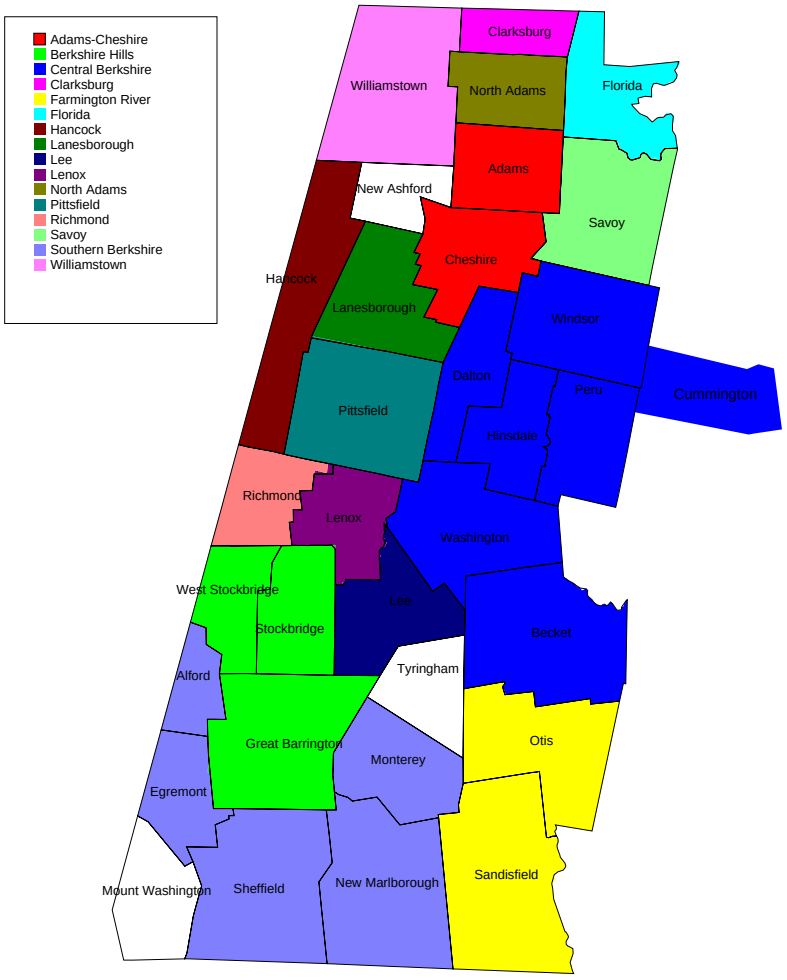
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.8276	0.0099	83.4841	0.0000	0.8081	0.8471	0.8081	0.8471
Test takers	0.0000	0.0000	1.5802	0.1152	0.0000	0.0001	0.0000	0.0001
Low-income	-0.6758	0.0328	-20.6025	0.0000	-0.7404	-0.6113	-0.7404	-0.6113

Appendix B

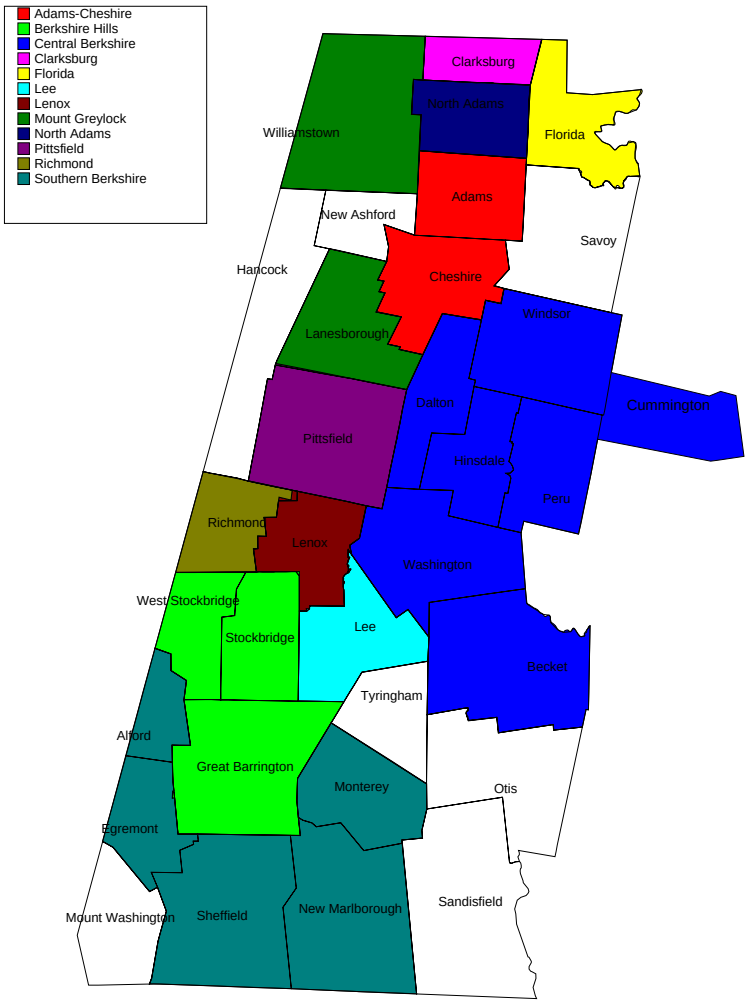
Descriptive Maps



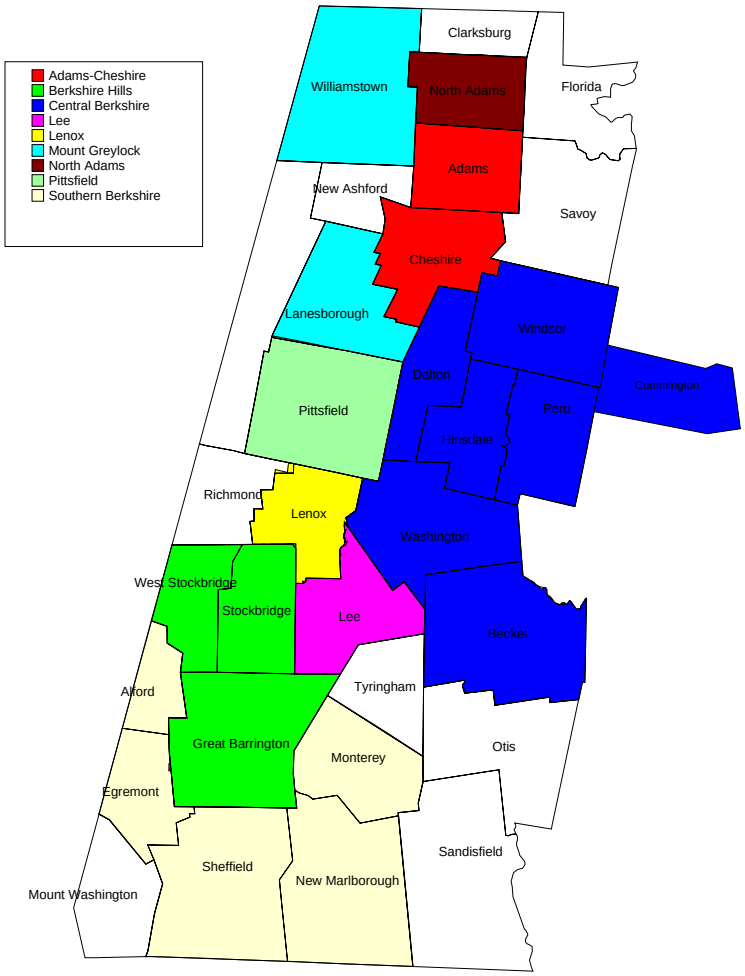
Elementary School Districts in Berkshire County



Middle School Districts in Berkshire County



High School Districts in Berkshire County



Appendix C

School Choice and Charter School Enrollment table

FY07 School Choice Pupils and Tuition and FY07 Charter Tuition and Reimbursements, with FY06 Per Pupil Expenditures

District	FY07 Receiving FTE	FY07 Receiving Tuition	FY07 Receiving Tuition PP	FY07 Sending FTE	FY07 Sending Tuition	FY07 Sending Tuition PP	FY07 FTE Receiving-Sending Difference	FY07 Receiving-Sending Tuition Difference	FY07 Charter FTE	FY07 Charter Local Payment	FY07 Charter PPE Local Payment	FY06 PPE
Adams Cheshire	53.6	$345,262	$6,444	41.4	$316,296	$7,636	12.2	$28,966	67.8	$680,569	$10,033	$10,234
Berkshire Hills	285.5	$1,571,966	$5,505	100.3	$667,273	$6,655	185.3	$904,693	0.0	$0	$0	$13,849
Central Berkshire	85.9	$492,291	$5,732	135.3	$776,508	$5,741	(49.4)	($284,217)	16.4	$166,091	$10,124	$10,142
Clarksburg	0.0	$0	$0	13.2	$74,937	$5,664	(13.2)	($74,937)	3.1	$28,197	$9,048	$10,875
Farmington River	33.1	$223,323	$6,749	45.0	$273,367	$6,069	(12.0)	($50,044)	0.0	$0	$0	$12,094
Florida	0.0	$0	$0	4.2	$20,900	$5,000	(4.2)	($20,900)	3.0	$36,339	$12,113	$10,209
Hancock	5.0	$29,233	$5,847	14.2	$77,747	$5,487	(9.2)	($48,514)	1.6	$16,907	$10,536	$9,588
Lanesborough	20.8	$262,140	$12,633	17.0	$108,021	$6,354	3.8	$154,119	0.0	$0	$0	$11,412
Lee	113.1	$645,704	$5,712	79.5	$439,559	$5,528	33.5	$206,145	0.0	$0	$0	$10,746
Lenox	145.7	$761,559	$5,226	39.3	$204,544	$5,202	106.4	$557,015	0.0	$0	$0	$11,948
Mount Greylock	56.6	$313,273	$5,531	20.6	$116,227	$5,639	36.0	$197,046	11.6	$138,674	$11,964	$14,202
North Adams	38.2	$237,055	$6,211	90.0	$597,480	$6,640	(51.8)	($360,425)	89.3	$981,473	$10,988	$12,890
Northern Berkshire Vocational	0.0	$0	$0	0.0	$0	$0	0.0	$0	0.0	$0	$0	$14,254
Pittsfield	77.1	$419,999	$5,450	250.9	$1,433,923	$5,716	(173.8)	($1,013,924)	22.2	$167,518	$7,535	$10,663
Richmond	34.6	$174,084	$5,036	10.2	$51,050	$5,000	24.4	$123,034	0.0	$0	$0	$12,065
Savoy	4	$17,316	$4,329	17.3	$93,593	$5,423	(13.3)	($76,277)	6.6	$56,964	$8,651	$7,990
Southern Berkshire	95.7	$615,554	$6,433	170.9	$921,720	$5,394	(75.2)	($306,166)	0.0	$0	$0	$12,354
Williamstown	51.2	$314,979	$6,157	3.2	$15,950	$5,000	48.0	$299,029	1.4	$19,132	$13,843	$11,398
Berkshire County	**1099.9**	**$6,423,738**	**$5,840**	**1052.4**	**$6,189,095**	**$5,881**	**47.5**	**$234,643**	**223.1**	**$2,291,865**	**$10,274**	**NA**

Note: (FTE) Full-time equivalent , (PP) Per Pupil , (PPE) Per Pupil Expenditure

Source: MA Department of Education: *http://finance1.doe.mass.edu/schoice/choice07.html.*

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