



Legislative Budget and Finance Committee

A JOINT COMMITTEE OF THE PENNSYLVANIA GENERAL ASSEMBLY

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Study of the Cost-Effectiveness of Consolidating Pennsylvania School Districts

Conducted Pursuant to SR 208 of 2006

Part 1 of 2

Statewide Analysis

June 2007



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June 2007

To the Members of the General Assembly:

Senate Resolution 208 of 2006 calls on the Legislative Budget and Finance Committee to study the cost-effectiveness of consolidating Commonwealth school districts.

Due to the specialized nature of this study, the Committee issued a Request for Proposal for assistance in developing the report. In November 2006, the Committee contracted with Standard & Poor's School Evaluation Services to conduct the study.

The Standard & Poor's report is contained herein. As with all LB&FC reports, the release of this report should not be construed as an indication that the Committee or its individual Committee members necessarily concur with its findings and recommendations.

Sincerely,

Philip R. Durgin
Executive Director

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School Evaluation Services

STANDARD
&POOR'S



Study of the Cost-Effectiveness of Consolidating Pennsylvania School Districts

Part 1 of 2

Statewide Analysis

Prepared for the Pennsylvania
Legislative Budget and Finance Committee

Standard & Poor's
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June 1, 2007

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EXECUTIVE SUMMARY

Like most states, Pennsylvania is grappling with the escalating costs of operating its public education system. In recent years, the regular operating costs of the Commonwealth's 501 school districts have grown at nearly three times the national rate of inflation. Although average per-pupil costs exceed \$10,000 in Pennsylvania, actual spending per pupil varies significantly from one district to another.

In the interest of helping school districts save money and meet more of their students' needs, the Pennsylvania Legislature commissioned this study of the cost-effectiveness of consolidating school districts and sharing services. The potential benefits of consolidation rest on the hypothesis that per-pupil costs vary among school districts, in part, as a function of enrollment and economies of scale.¹ The assumption is that smaller districts spend more per pupil because they pro-rate fixed costs over fewer students, and because they are unable to leverage their purchasing power to obtain volume discounts to the same extent that larger districts can. To test this hypothesis and to analyze related issues, this study focuses on five legislative research objectives identified in Resolution S208 from the 2006 legislative session, as follows:

Legislative Objectives for the Study

1. Determine whether consolidation could help smaller and more rural districts save money with regard to purchasing power of supplies and services.
2. Evaluate whether the consolidation of school districts at the county, intermediate unit, or other level would enable larger school districts to provide more services such as extensive special-needs programs, after-school programs, and other services that poorer districts traditionally cannot provide or afford.
3. Analyze whether services could be shared among two or more school districts, much like many municipal services on other levels, without necessarily consolidating the districts.²
4. Investigate whether, by pooling state moneys together to provide better services for more rural school districts, the Commonwealth could run a more efficient and ultimately a better system of education for its young people.
5. Study the effects of consolidation on transportation issues, logistical issues, and other situations that may not be considered on the surface.

¹ *Economy of scale* can be defined as the benefits realized as a function of increased size of an organization. Conversely, *diseconomy of scale* can be defined as the financial disadvantages associated with increased size. See James Streifel, George Foldesy, and David Holman. The financial effects of consolidation. *Journal of Research in Rural Education*, Winter 1991, Vol. 7, No. 2, p. 14.

² The wording of this objective in Resolution S208 originally called for an analysis of "whether services could be consolidated... by consolidating school districts." The objective's intent was subsequently clarified by the Legislative Budget & Finance Committee to mean that the study should analyze whether services could be shared between school districts without necessarily consolidating the districts.

The purpose of this study is not to advocate for or against consolidation, or to recommend the merger of any particular combination of school districts. It is to address the foregoing research objectives with an independent analysis of data.

Data Analysis

This study includes an analysis of both quantitative and qualitative data, including:

- A statistical analysis of spending, enrollment and achievement data for all school districts.
- A survey administered to a subset of 88 school districts that could potentially benefit from consolidating with another district (49 districts returned a completed survey, for a 56% response rate).
- A survey administered to a subset of 16 intermediate unit (IU) executive directors, who serve one or more of the 88 school districts focused on for this analysis.
- Personal interviews with superintendents and school board members in a subset of 26 of the 88 districts that were sent the survey.
- Interviews with representatives of intermediate units, the Pennsylvania Association of School Administrators, Pennsylvania Association of School Business Officials, Pennsylvania State Education Association, Pennsylvania Department of Education, and Department of General Services;
- A review of the research literature on school consolidation in the U.S.

Summary of Findings

A brief summary of findings for each of the study's five objectives is provided below:

Legislative Objective 1: Determine whether consolidation could help smaller and more rural districts save money with regard to purchasing power of supplies and services.

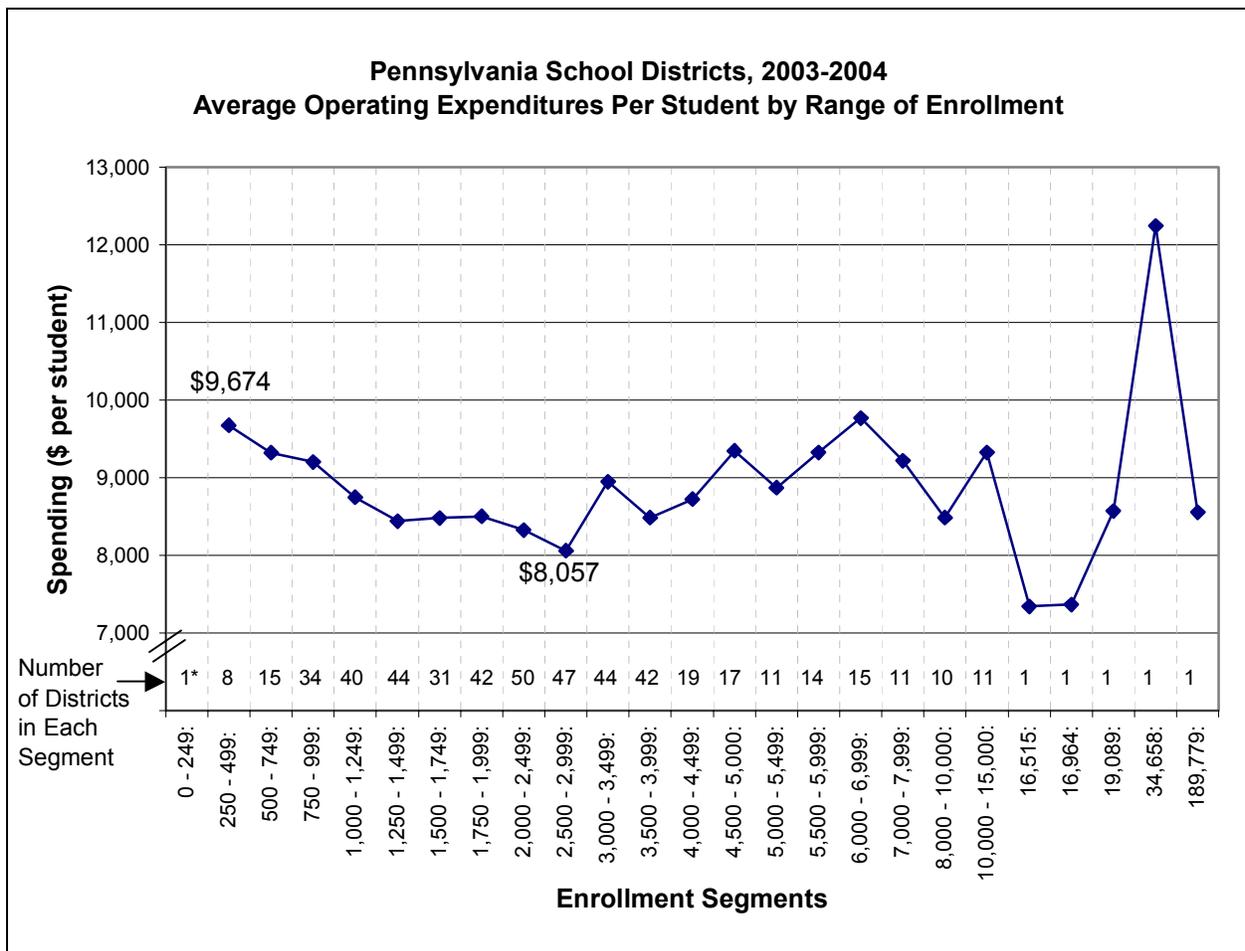
- An analysis of the state's 501 school districts reveals a relationship between per-pupil spending and size of enrollment, as shown in Exhibit 1. For analytical purposes, the graph divides the state's school districts into segments that are based on enrollment. Each segment's range of enrollment, and the number of districts in each segment, are displayed along the horizontal axis. (Note, however, that the state's five largest districts are not assigned to a range; instead, their actual enrollments are shown individually). Each segment's average spending per pupil is plotted according to the scale on the vertical axis.

Exhibit 1 shows that districts with fewer than 500 students spend an average of \$9,674 per pupil in operating costs.³ As districts get larger, their per-pupil spending tends to decrease, until it reaches an average of \$8,057 among districts with 2,500 – 2,999 students. However, average per-pupil spending tends to go back up again as enrollments exceed 3,000 students.

³ Operating expenditures include costs for instruction, instructional staff support, pupil support, general administration, school administration, transportation, food services, operations and maintenance, and other costs. Capital spending and debt service are not included in operating expenditures.

Using this empirically observed pattern, it appears that district consolidations that result in combined enrollments below 3,000 students would be more likely to save money than consolidations that produce districts with more than 3,000 students. Although the two districts with 16,515 and 16,964 students have comparatively low spending, they are not reliable indicators of scaled costs for reasons discussed in the report’s detailed findings. As a result, they were not selected as an optimal size for modeling consolidations; the range of 2,500 – 2,999 students was selected instead. **Therefore, if the state wishes to reduce overall costs, or to re-invest cost-savings so as to expand educational services, it might reasonably focus on the potential benefits of consolidating relatively high-spending, smaller districts into lower-spending, larger districts, but whose enrollments remain below 3,000 students.**⁴ The underlying principle is that per-pupil spending might decrease the closer consolidated districts come to an enrollment of 2,500 – 2,999 students.

Exhibit 1



* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

⁴ This finding applies to Pennsylvania only, and is not meant to be generalized to other states, whose spending patterns may be different.

- Although there are 312 districts with enrollments below 3,000 students, not all of them border another district with which they could consolidate without creating a combined enrollment above 3,000 students. Nor are all of them relatively high-spending when compared to similarly-sized districts. As a result, some consolidation scenarios would appear more likely than others to result in a *net* reduction in per-pupil costs for *each* of the districts involved (not just for one district at the expense of another).

Accordingly, this study focuses on a subset of 88 districts with enrollments below 3,000 students, which have the following characteristics:

- **Their per-pupil spending is above the average amount spent by similarly-sized districts (and, by extension, the average amount spent by districts with 2,500 – 2,999 students).**
- **They border a district whose spending is also above the average for their size, with whom they could potentially consolidate without exceeding an enrollment of 3,000 students.**

These 88 districts are used to create 97 hypothetical “pairings” of school systems that are profiled in Part 2 of this study (a separate document). The profiles of each pair of districts are provided for further analysis by local and state policymakers. However, Standard & Poor’s analysis of these districts does not constitute a recommendation that they be consolidated. Their data are analyzed for modeling purposes only.

- Some of the 88 districts analyzed in this study are included in more than one pairing in Part 2 of this report. When the pairings that would produce the greatest hypothetical savings are modeled, the study finds that 34 mutually exclusive pairs of districts could save approximately \$81 million, if - after consolidating - they could lower their per-pupil costs to the average amount spent by similarly-sized districts across the state.
- The superintendents in these 88 districts were sent a survey that asked for their opinions on consolidation and shared services. A total of 49 surveys were completed, for a 56% response rate. When asked if their district were to merge with another district at the administrative level only, *but not close any of their schools*, 42% of survey respondents think consolidation could achieve cost reductions. When asked if they were to consolidate with another district *and close one or more schools*, 57% of respondents think that costs would decrease.

Among the 28 respondents who think costs would decrease, 61% express a willingness to consider consolidating. However, it is important to remember that these responses come from superintendents, and in several cases they indicate that their responses reflect their own personal willingness, not necessarily that of the school boards or communities they serve.

A number of superintendents made it clear in their survey and interview comments that consolidation would be an extremely controversial issue that would face considerable opposition in their communities. Reasons cited include socio-economic and demographic differences between school districts, the potential for longer bus routes for schoolchildren, less local control, and a loss of local identity due to different community cultures and traditions. Additionally, some districts have invested millions of dollars in facility

improvements in recent years, which can create a disincentive to close those schools. The combination of these issues can pose formidable obstacles to consolidation, regardless of potential cost-savings. A number of individuals interviewed indicated that they do not think consolidation would happen in their community unless it was mandated by the state.

- The reaction to consolidation is not, however, uniformly disapproving, particularly in light of potential cost-savings. One board member went so far as to indicate that even if the district only “broke even,” consolidation could still be worth it if it resulted in enhanced educational programs for students. Additionally, several superintendents who were interviewed thought that the state might be able to encourage or facilitate consolidations by providing districts with funding for local feasibility studies and technical assistance.
- There are many topics that a local study could address; one of the most prominent is local property taxes. Due to differences in equalized millage rates, two communities that are considering the consolidation of their school districts may be anxious to know the impact that consolidation could have on their respective tax rates. Theoretically, a district’s rate could go up, down, or stay the same after consolidating with another district. There may be no way of knowing more precisely what the impact would be unless or until the two districts create an estimate of their consolidated budget for expenditures and margins. They could then estimate the amount of money that would be needed from local real estate taxes to fund that budget (net of all other sources of estimated revenue, such as state and federal aid, and other local revenues not derived from real estate taxes). This information could then be used in modeling the millage rate that would need to be applied against the two districts’ combined assessed valuation to fund the budget. Once an estimated millage rate is sufficiently refined with local knowledge and assessment practices, it could be compared to estimates of each district’s millage rate if no consolidation were to take place. Such a process may provide a better estimate of the impact of consolidation on property tax rates than simply averaging the two districts’ current rates, since one of the motivations for consolidating may be to reduce overall spending, and by extension, to reduce taxes.

Legislative Objective 2: Evaluate whether the consolidation of school districts at the county, intermediate unit, or other level would enable larger school districts to provide more services such as extensive special-needs programs, after-school programs, and other services that poorer districts traditionally cannot provide or afford.

- Evidence exists that many larger districts provide certain programs that some smaller districts do not offer. For example, 92% of all districts with 3,000 or more students report Advanced Placement (AP) test results, while only 51% of districts with fewer than 3,000 students report such data, which suggests that they do not offer AP courses. One of the superintendents interviewed for this study indicated that his district was unable to offer AP classes due to scheduling constraints, and was unable to offer certain kinds of electives. However, other superintendents indicated that their districts were taking advantage of dual enrollment programs with area colleges, and distance learning programs such as those offered by BlendedSchools.net, which can provide numerous videoconference-delivered courses.

- Still, many superintendents think that larger school systems are better equipped to provide more services for students. A total of 63% of the 49 school districts that responded to this study's survey agreed that consolidation with another district could help them provide additional *academic enrichment opportunities*⁵ for their students. Along with academic services, there is also support for the notion that larger districts are better equipped to provide *extra-curricular opportunities*⁶ for students. A total of 51% of respondents to the survey agreed that they could offer their students more extra-curricular opportunities by consolidating with another district.
- Despite the advantages that some school districts may be able to provide, five out of seven intermediate unit executive directors who responded to a survey for this study reported that they strongly disagree with the statement that *"Consolidating all districts within our intermediate unit would enable the single, newly formed district that resulted to provide more services (such as extensive special-needs programs or after-school programs) than some of our small or economically disadvantaged districts could provide on their own."*

Even if large (e.g., county-wide) consolidated districts could provide services that smaller, economically disadvantaged districts could not afford on their own, it could require an increase in overall spending, rather than a decrease. In fact, the central tendencies observed in Exhibit 1 suggest that districts with more than 3,000 students would tend to spend more per pupil than many smaller districts. Unless state aid were provided to fund these services for the disadvantaged districts, it would seem that the wealthier communities in the consolidated regional district would have to subsidize the costs of these services. If this were the case, the wealthier property owners' taxes would likely increase, which could make the prospects for voluntary regional consolidation less likely – especially if the wealthier schools already enjoy the services that would be extended to the less affluent schools.

- On a related note, some of the superintendents interviewed for this study indicated that additional programs offered through a larger, consolidated district could come at the expense of the individualized attention many students receive in smaller districts. None of the individuals interviewed for this study, including intermediate unit executive directors, expressed a favorable opinion toward an IU-wide consolidation of school districts.

⁵ The district survey defines academic enrichment as any supplemental academic program that directly supports student learning, including after-school classes or tutoring, remediation programs, gifted and talented programs, summer school classes, etc.

⁶ The survey defines extra-curricular opportunities as any non-academic program, including athletics and special clubs, that are likely to take place outside of the regular school day

Legislative Objective 3: Analyze whether services could be shared among two or more school districts, much like many municipal services on other levels, without necessarily consolidating the districts.

- As an alternative to consolidation, some districts are well poised to save money by sharing services with other districts. Many districts are already taking proactive steps to do so. Just over half (53%) of the 49 superintendents who responded to this study's survey indicate that they currently share one or more services with another district (in some cases through the local Intermediate Unit, Area Vocational Technical Center, or Career Technology Center). Shared services typically include such areas as special education, athletics, occupational programs, alternative education, distance learning, purchased services, shared personnel, technology, coaching, transportation, health care, food services, and student support.
- All but three of the districts that responded to the survey expressed a willingness to share services, suggesting strong potential for districts and the state to move forward in this area. (To encourage an increase in shared services, the governor has proposed allocating \$1 million to help school districts learn about ways they can share services and programs in such areas as instruction, transportation, food services, safety and security, health services, purchasing, finance, payroll, facilities, human resources, technology, and administration.)
- Given that there are logistical and operational challenges that districts can sometimes face around sharing services, as compared to the ability of IUs to offer more shared services relatively easily, the IUs might be an effective vehicle for the expansion of shared services. In some cases, IUs have the capacity and the willingness to increase the number of joint services offered to districts. As one IU executive director commented, "If it can be done, and we can pay for it, we will do it".

Legislative Objective 4: Investigate whether, by pooling state moneys together to provide better services for more rural school districts, the Commonwealth could run a more efficient and ultimately a better system of education for its young people.

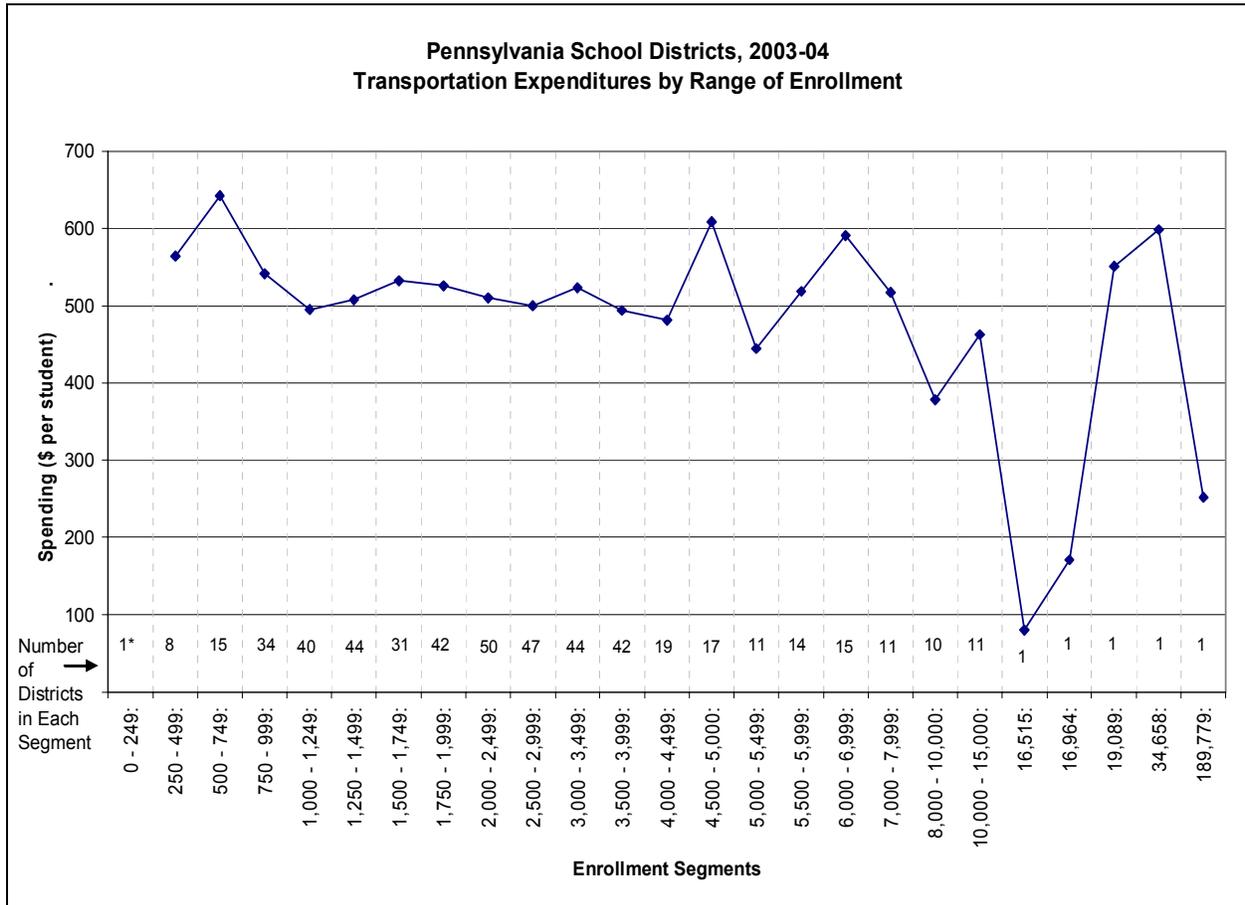
- Additional ways that school districts can save money include programs that "pool" public resources to leverage the collective purchasing power of state and local governments. This can be done through streamlined purchasing programs, state-negotiated contracts, procurement networks, and purchasing cooperatives. Examples include the following:
 - Thirty-nine percent of the 49 districts that responded to this study's survey indicate that they participate in COSTARS, the state's Cooperative Sourcing to Achieve Reductions in Spending program.
 - Seventy-eight percent of respondents indicate that they participate in the PEPPM Technology Bidding and Purchasing Program.

- Eight percent of survey respondents participate in U.S. Communities, which combines the purchasing power of public agencies nationwide.
 - Additionally, 24% of respondents participate in Investment Trusts. Finally, 4% of respondents participate in Easy Purchase, and 12% participate in other procurement networks to acquire competitively priced goods and services, some of which are operated by their local intermediate unit.
- Pennsylvania's 29 intermediate units were created in 1971 to efficiently provide services to school districts, in part by leveraging greater economies of scale. As part of their ongoing efforts to help school districts save money, a number of IUs operate collective purchasing programs that provide benefits similar to those of COSTARS, PEPPM and US Communities. However, the efficiencies created by IUs go well beyond the procurement of consumable goods and materials; they also extend to the cost-effective delivery of numerous educational services that would be far more expensive for many school districts to provide on their own.
 - Steps have been taken by many of this study's 88 small, relatively high-spending districts to increase cost effectiveness and improve the quality and scope of educational services. But in some cases they may be able to do more. For example, interviews with IU executive directors reveal that participation in IU programs is not always at an optimal level, and that some districts are opting to pay more to fund a service in-house than they would if it were purchased through the IU. At least two districts were identified as paying for their own special education services when, according to the IU, they could get those services for significantly less through the intermediate unit (and possibly at a higher quality level).

Legislative Objective 5: Study the effects of consolidation on transportation issues, logistical issues, and other situations that may not be considered on the surface.

- As shown in the exhibit that follows, the average transportation expenditure per pupil tends to be higher among school districts with fewer than 750 students than for districts with 750 – 4,999 students. Among districts with 5,000 or more students, per-pupil costs fluctuate significantly.
- The potential impact of school district consolidation on transportation expenditures is particularly difficult to model based only on enrollment, because economies of scale where transportation is concerned are determined more by cost per mile driven, not just by cost per student transported. As a result, consolidation's impact on the transportation expenditures of two or more school districts would depend on these important variables: (a) whether or not any of their schools would be closed; (b) whether or not the attendance zones of any of their schools would be changed, even if schools did not close; (c) whether or not the grade levels served at any of their schools would be changed; (d) the newly formed district's geographic expanse; (e) its effect on the length and number of transportation routes; (f) its effect on the number of vehicles and drivers needed; and (g) the number of miles driven.

Exhibit 2



- When asked what they think would happen to their transportation costs if they were to consolidate with another district *but not close any schools*, 26% of the 49 districts that responded to the study's survey think that costs would increase, 17% think they would decrease, and 57% think they would remain the same. But when asked what they would expect to happen to their transportation costs if they were to consolidate *and close one or more schools*, 64% of the survey respondents think that costs would increase, 19% think they would decrease, and 17% think they would stay the same.
- When asked what they think would happen to the length of transportation routes if they were to consolidate with another district *but not close any schools*, 42% of survey respondents think that the length would increase, 2% think it would decrease, and 56% think it would remain the same. When asked what they think would happen to the length of transportation routes if they were to consolidate *and close one or more schools*, 75% of respondents would expect to see an increase in the length, 4% would expect to see a decrease, and 21% would expect it to remain the same.

- Where the amount of time that students spend in transit is concerned, many districts are already near the threshold of what their communities will tolerate. On average, districts reported that one hour is the maximum reasonable time for any student to spend on a bus for a one-way trip, and this upper limit of time is not considered desirable. And yet, the 22 districts that responded to a follow-up survey question about transportation time and distance indicate that the maximum amount of time spent on a one-way bus trip for one child is as high as 97 minutes (194 minutes round-trip), and as long as 72 miles (148 miles round-trip).

Additional Analytical Findings: Consolidation and Student Achievement

No discussion of consolidation would be complete without relating it to academic achievement. Therefore, readers may be interested to know that when statistical regressions⁷ of the state's 501 school districts are analyzed, there is virtually no predictive relationship between size of district enrollment and reading and math proficiency rates on the Pennsylvania System of Student Assessment.⁸ However, if a higher-performing district were to consolidate with a lower-performing district, their combined proficiency rates could still end up being lower than the higher-performing district's rates were prior to consolidation, simply because of averaging.

This can present a significant deterrent to consolidation because of the performance objectives of the federal No Child Left Behind Act (NCLB). One of the goals of NCLB is for 100% of students to demonstrate proficiency in reading, math, and science at specified grade levels by the year 2014. All schools and districts are held accountable for making Adequate Yearly Progress (AYP) toward this goal. Those that do not make AYP may be designated as "needing improvement," and can be subject to regulatory actions, including reorganization. Therefore, a higher-performing district may be reluctant to consolidate with a lower-performing district, since it would be harder to make AYP from the higher-performing district's perspective. This is a very real concern raised by some of the district leaders who were interviewed for this study.

When combined with the other factors previously cited, it is clear that communities will have to address many complex issues and trade-offs if they wish to consider consolidating their school districts. The detailed findings that follow are provided to help local communities and the Legislature address those issues with an analysis of both quantitative and qualitative data.

* * *

⁷ The regression of proficiency rates and enrollment sizes has an R-squared value of only 0.0122. *R-squared* is a statistical measure of the predictive relationship between two variables; it represents the percentage of change in one variable that is associated with the change in another variable. R-squared values can range from 0 to 1. The farther the value is from 1, the weaker the predictive relationship is between two variables.

⁸ PSSA proficiency rates are certainly not the only measure of student achievement that exist; nor do they reflect the totality of educational aims. But they represent the best standardized data available for every school district in the state. However, it is certainly possible that smaller school districts provide students with unique advantages that are not reflected in their PSSA proficiency rates or cannot be quantified or directly measured.

INTRODUCTION

The future of school district consolidation in Pennsylvania will inevitably be contemplated in the context of historical precedent. In the early 1960s, sweeping organizational reforms were passed by the Legislature that resulted in the consolidation of hundreds of school districts. By 1967, the state's Bureau of School District Reorganization reduced the number of districts with which it began working from 2,056 to 742. By 1988 the number was further reduced to 501.^{9, 10}

In the interest of helping school districts save money and meet more of their students' needs, the Pennsylvania Legislature is revisiting the related topics of consolidation and shared services, and has authorized this study of their cost-effectiveness. The potential benefits of consolidation rest on the hypothesis that per-pupil costs vary among school districts, in part, as a function of enrollment and economies of scale. The assumption is that smaller districts spend more per pupil because they pro-rate fixed costs over fewer students, and because they are unable to leverage their purchasing power for volume discounts to the same extent that larger districts can. To test this hypothesis and to analyze related issues, this study focuses on five legislative research objectives identified in Resolution S208 from the 2006 legislative session, as follows:

Legislative Objectives of the Study

1. Determine whether consolidation could help smaller and more rural districts save money with regard to purchasing power of supplies and services.
2. Evaluate whether the consolidation of school districts at the county, intermediate unit, or other level would enable larger school districts to provide more services such as extensive special-needs programs, after-school programs, and other services that poorer districts traditionally cannot provide or afford.
3. Analyze whether services could be shared among two or more school districts, much like many municipal services on other levels, without necessarily consolidating the districts.
4. Investigate whether, by pooling state moneys together to provide better services for more rural school districts, the Commonwealth could run a more efficient and ultimately a better system of education for its young people.
5. Study the effects of consolidation on transportation issues, logistical issues, and other situations that may not be considered on the surface.

⁹ Pennsylvania State Archives. RG-22. *Records of the Department of Education: Agency History*. Retrieved from <http://www.phmc.state.pa.us/bah/DAM/rg/rg22ahr.htm>

¹⁰ During this same period, the state took additional measures to help create economies of scale in the provision of educational services. For most of its history, the state's public school system has consisted of three levels: the State level, an intermediate level, and the local school districts. Until 1971, county superintendents supplied the structure between the State and local levels. In 1970, the General Assembly passed Act 102, creating a system of 29 intermediate units (IUs), which replaced the county superintendents at the intermediate level the following year.

DATA SOURCES AND UNITS OF MEASURE

This study includes an analysis of both quantitative and qualitative data, including:

- A statistical analysis of spending, enrollment and achievement data for all school districts.
- A survey administered to a subset of 88 school districts that could potentially benefit from consolidating with another district (49 districts returned a completed survey, for a 56% response rate).
- A survey administered to a subset of 16 intermediate unit (IU) executive directors, who serve one or more of the 88 school districts focused on for this analysis.
- Personal interviews with superintendents and school board members in a subset of 26 of the 88 districts that were sent the survey.
- Interviews with representatives of intermediate units, the Pennsylvania Association of School Administrators, Pennsylvania Association of School Business Officials, Pennsylvania State Education Association, Pennsylvania Department of Education, and Department of General Services.
- A review of the research literature on school consolidation in the U.S.

The primary source of quantitative information used for this study is the SchoolMatters.com database, managed by Standard & Poor's for the Council of Chief State School Officers. It is a publicly accessible repository of academic, financial, and demographic data for the nation's school districts. The most recent academic achievement data used in this study are from the school year ending in 2006, and include school districts' overall proficiency rates on the reading and math tests administered through the Pennsylvania System of Student Assessment. The most recent financial data, enrollment statistics, and demographic indicators used in this study are from the school year ending in 2004.

The state collects and reports per-pupil spending for each of its 501 school districts, but not for its individual schools. Therefore, the financial analysis performed in this study is conducted at the district level. This study uses one of the most common units of measure in education finance, known as "operating expenditures," which include spending for instruction, instructional staff support, pupil support, general administration, school administration, operations, maintenance, student transportation, and food services. (Capital spending and debt service are not included in operating expenditures.) In certain instances, this study also uses a subset of operating expenditures, known as "core spending," which excludes transportation and food services.

Since the purchasing power of the dollar varies from one region to another across the state, this study uses a geographic cost index to "normalize" each school district's expenditure data for certain analytical purposes.¹¹ Additionally, this study recognizes that school districts tend to

¹¹ The Comparable Wage Index from the National Center for Education Statistics has been utilized to normalize spending data. This has the effect of reducing the spending levels of districts in high-cost areas relative to those in low-cost areas by factoring out differences in local purchasing power of the dollar. The values for this geographic cost adjuster are calculated at the county level, so differences within county cannot be measured by this index. The data underlying the index is from 2004.

spend more money on students with economically disadvantaged backgrounds, disabilities, and limited English proficiency, than they do for students without these special needs. Since the proportional enrollment of these students varies from one district to another, this study uses a weighted student-needs index to normalize each district's expenditure data in certain instances.¹²

In order to compare spending across school districts with different sizes of student enrollment, operating expenditures are pro-rated on a per-pupil basis. This, in turn, allows for the analysis of economies and diseconomies of scale.

A written survey containing 18 questions was administered to 88 school districts. Forty-nine districts completed and returned the survey, yielding a 56% response rate. The survey questions relate to the five objectives in Resolution S208, and are organized around several key categories, including educational services, costs, and transportation. The district survey is presented in the Appendix of this report, along with a summary of responses, showing the frequency of answers selected for each question. A short written survey, consisting of 6 questions, was also sent to the executive directors in the 16 intermediate units that serve the 88 school districts focused on in this study. The IU survey and the summary of responses are also included in the Appendix.

Much of the information analyzed for this study was collected directly from the field. A large percentage of the qualitative data was generated through formal, structured interviews, involving face-to-face meetings with education officials, using a standardized interview protocol custom-designed for this study. A total of 36 school district and intermediate unit officials were interviewed (predominantly superintendents and executive directors, but also four board members, one principal, and one curriculum coordinator were included). Interview subjects represented a total of 26 different districts and IUs, spanning eight counties in Pennsylvania. These 26 districts were selected using multiple demographic and geographic criteria—such as the percentage of economically disadvantaged students, student enrollment, population density, and county in which the district is situated—to ensure a diverse sample of districts.

A number of individuals with statewide perspectives were also interviewed for this study, including representatives of the Pennsylvania Association of School Administrators, the Pennsylvania Association of School Business Officials, the Pennsylvania State Education Association, the Pennsylvania Department of Education, and the Department of General Services.

In total, 44 individuals were interviewed in person for this study, with additional interviews conducted by telephone, bringing the combined number to nearly 50 individuals. The interview protocol used for district interviews is contained in the Appendix to this report.

¹² Standard & Poor's has conducted an extensive review of education research literature and found that although spending levels vary from one district to another, there are prevailing estimates of the additional "weighted" amounts that school districts tend to spend for students with certain types of special needs, compared to other students: 35% more for economically disadvantaged students; 108% more for students with disabilities; and 20% more for students with limited English proficiency. These relative cost weights are used to "normalize" each district's per-pupil expenditure so that spending levels can be compared across multiple districts regardless of different need levels in each district's student population.

DETAILED FINDINGS

The study's detailed findings are presented in the order of each of the legislative resolution's five research objectives.

1. *Legislative Objective: Determine whether consolidation could help smaller and more rural districts save money with regard to purchasing power of supplies and services.*

A. Economies and Diseconomies of Scale

In order to explore the potential cost-savings that might be produced by consolidating school districts, it is first necessary to empirically test the hypothesis that per-pupil spending varies as a function of enrollment (i.e., determine if there is evidence of economies or diseconomies of scale). The graph in Exhibit 3 indicates that this is, indeed, the case. For analytical purposes, the graph divides the state's school districts into segments, based on enrollment. Each segment's range of enrollment, and the number of districts in each segment, are displayed along the horizontal axis. (Note, however, that the state's largest five districts are not assigned to a range; instead, their actual enrollment is shown individually). Each segment's average spending per pupil is plotted according to the scale on the vertical axis.

Districts with fewer than 500 students spend an average of \$9,674 per pupil on operating expenditures.¹³ As districts get larger, their per-pupil spending tends to decrease, until it reaches an average of \$8,057 among districts with 2,500 – 2,999 students. However, average per-pupil expenditures tend to go back up again as enrollments exceed 3,000 students.^{14, 15} Extreme variation is found among the state's five largest districts, which have been individually plotted rather than averaged, because of the significant differences in their enrollments.

Although the average per-pupil expenditure of the 47 districts with 2,500 - 2,999 students is higher than that of the two districts with 16,515 and 16,964 students, those two districts are not viewed as particularly reliable indicators of scaled costs since there are only two of them, whereas the average spending for most other enrollment segments is derived from 10 - 50

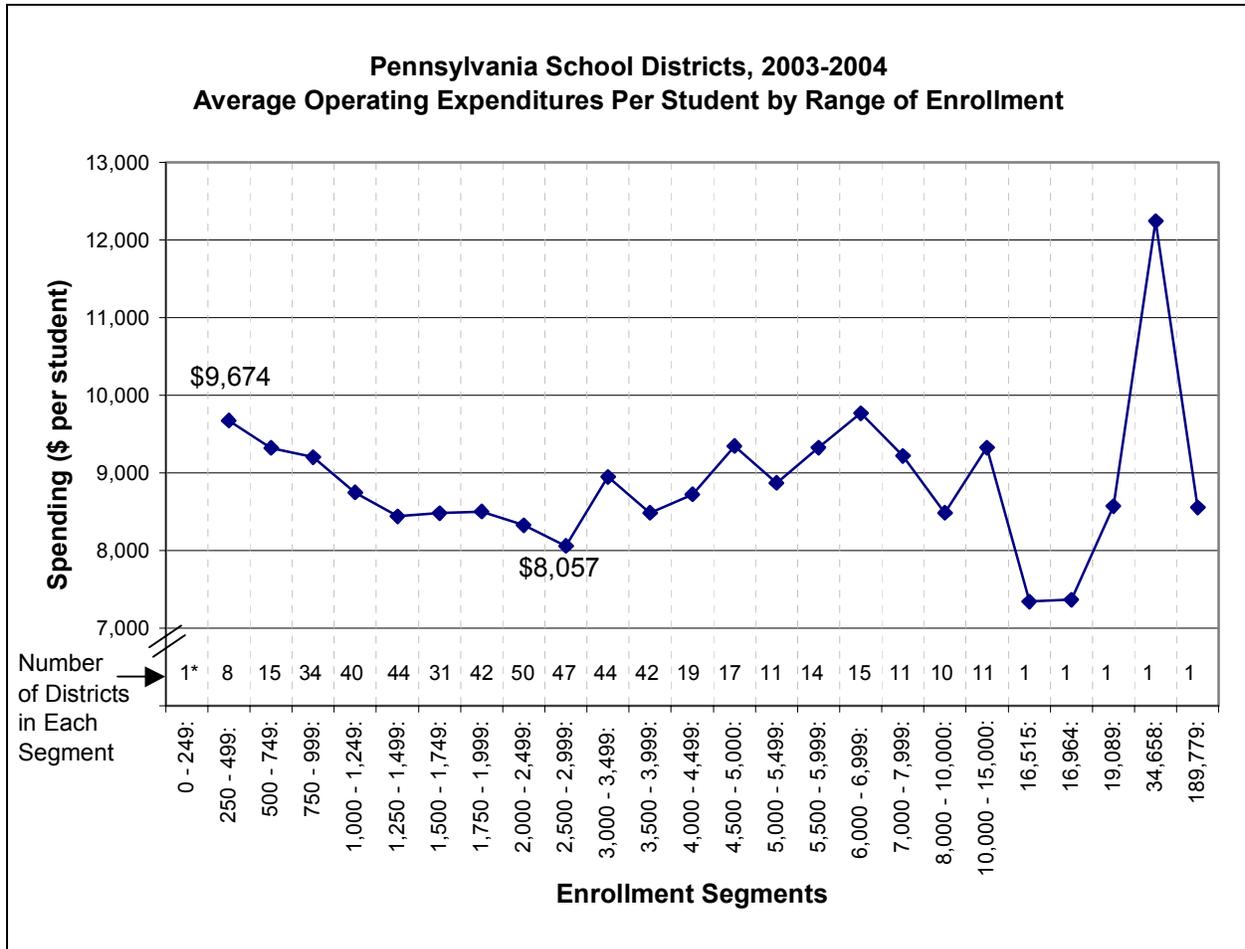
¹³ Operating expenditures include spending for instruction, instructional staff support, pupil support, general administration, school administration, transportation, food services, operations, maintenance, and "other" costs. Capital spending and debt service are excluded.

¹⁴ A similar relationship between spending and enrollment is observed when spending is adjusted to reflect geographic differences in the purchasing power of the dollar, and when it is adjusted for the higher cost of educating students with economically disadvantaged backgrounds, disabilities, and limited English proficiency (whose enrollment varies by district). A similar relationship between spending and enrollment is also observed when each *individual* school district's data are plotted and a localized, non-linear, parabolic curve of best fit is statistically calculated using a Loess regression method, which is shown in the study's detailed findings.

¹⁵ This range is consistent with findings from studies of school districts in other states, which have identified optimal enrollments between 1,500 and 3,500 students where operating or instructional costs are concerned. For a review of the literature, see William Duncomb and John Yinger (2001). *Does School District Consolidation Cut Costs?* Center for Policy Research, Maxwell School of Citizenship and Public Affairs, Syracuse University.

districts. The “representativeness” of these two districts’ expenditures is drawn into further question because they are markedly different from the spending level of the next largest district with 19,089 students, which spends more, not less, than the average of the 47 districts with enrollments of 2,500 - 2,999 students. Moreover, the combined average PSSA Reading and Math Proficiency rates of these two districts are dramatically lower than those of all the other segments except Philadelphia. Accordingly, these two districts were not selected to represent an optimal size for consolidation purposes; the range of 2,500 – 2,999 students was selected instead.

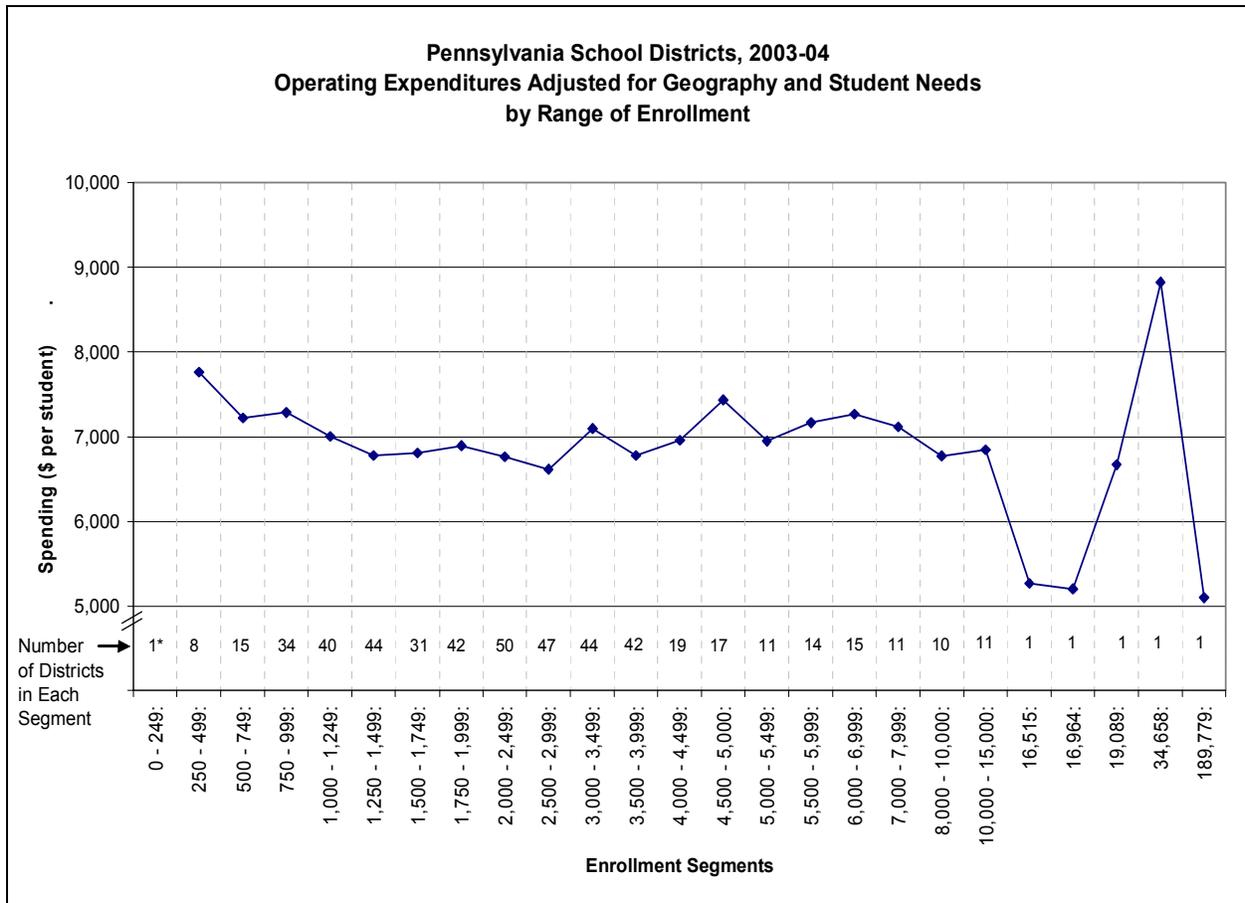
Exhibit 3



* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

A similar relationship between per-pupil spending and district enrollment is observed even when each district's spending is "normalized" for geographic differences in the purchasing power of the dollar, and for each district's unique proportional enrollment of students with economically disadvantaged backgrounds, disabilities, and limited English proficiency, whose educational costs tend to be higher than those of other students.

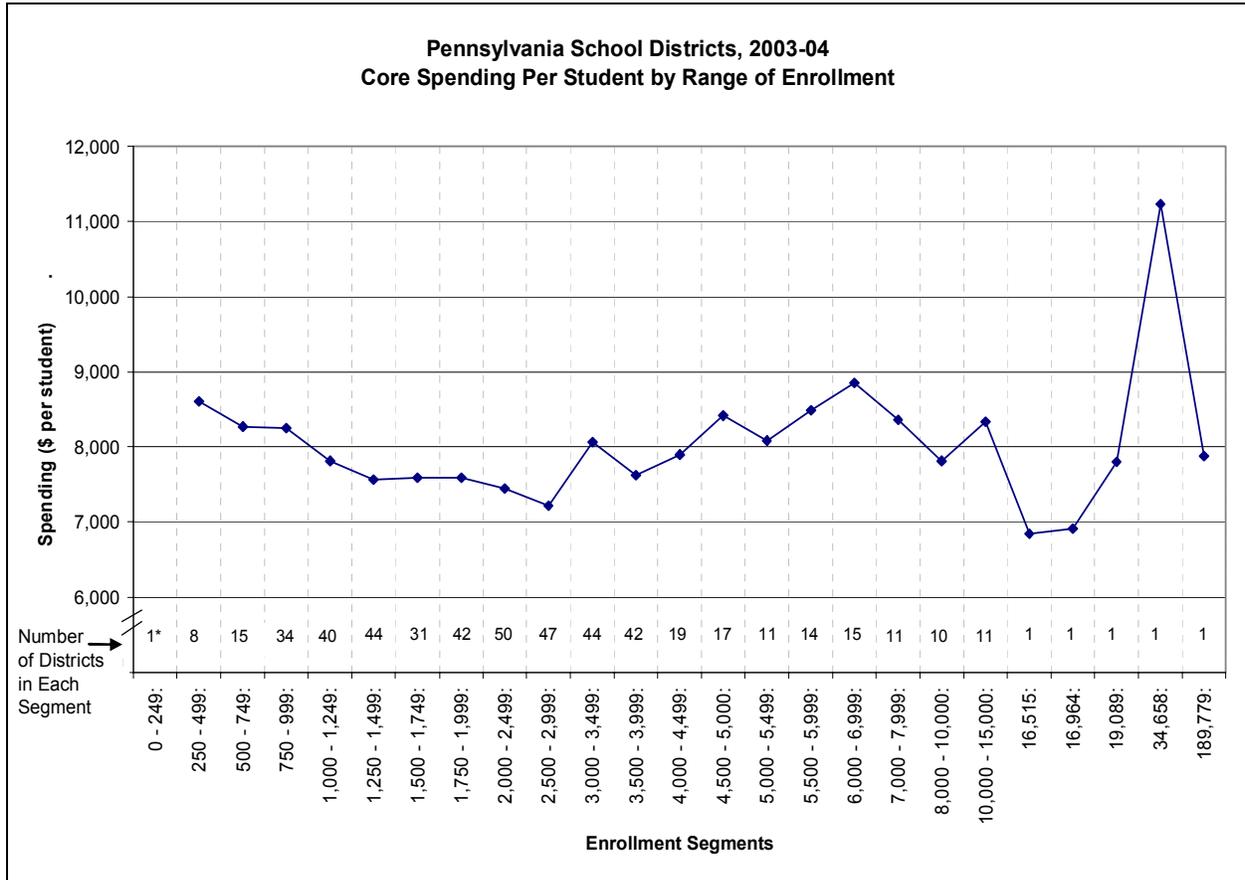
Exhibit 4



* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

A similar relationship between spending and enrollment is observed when “core spending” is analyzed (core spending includes the same costs as operating expenditures, with the exception of transportation and food service costs, which are not included in core spending.)

Exhibit 5



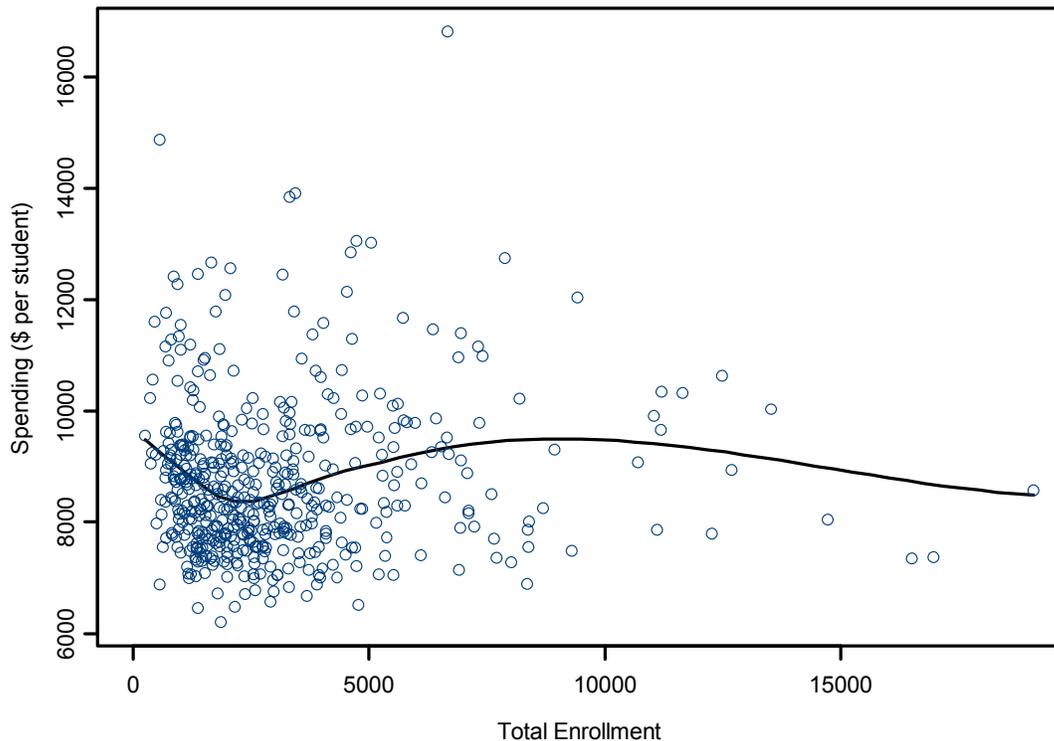
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

Graphs of each individual spending function can be found in the Appendix, including:

- Instruction
- Instructional Staff Support
- Pupil support
- General Administration
- School Administration
- Operations and Maintenance
- Transportation
- Food Services
- Other

A similar relationship between spending and enrollment as the one observed in Exhibit 3 on page 17 is observed when each *individual* school district's data are plotted, as shown in the exhibit that follows, where each circle represents a single district. In this case, the overall pattern of the data is depicted using a localized, non-linear curve that has been statistically calculated using a Loess regression method. (The graph excludes Philadelphia and Pittsburgh to allow the localized regression line to be seen in the densest concentration of districts on the left side of the distribution.) The dipped \cup shape of the regression line on the left side of the distribution (known as a parabolic curve¹⁶) is consistent with the \cup shape observed in other published studies of education finance found in the research literature,¹⁷ though the exact inflection point of low spending and enrollment varies from state to state.

Exhibit 6
Pennsylvania School Districts 2003-04
Operating Expenditures Per Student Regressed By District Enrollment



Little research has been published on why per-pupil spending tends to go back up after a certain enrollment threshold is reached, but an article in *Education and Urban Society* offers one theory:

¹⁶ See the study by Robert Tholkes and Charles Sederberg. (1990). Economies of scale and rural schools. *Research in Rural Education*, Fall 1990, Vol. 7, No. 1, p. 10.

¹⁷ For a review of the literature, see Duncomb, William and Yinger, John (2001). *Does School District Consolidation Cut Costs?* Center for Policy Research at the Maxwell School of Citizenship and Public Affairs, Syracuse University.

[B]ecause large systems may be ‘resource munificent,’ they may offer higher salaries to attract expert personnel. They may more regularly maintain and upgrade their facilities, establish and expand support staff, and engage more systematically in research and development. But with size come ‘negative mechanisms’ or constraints. As specialization in staffing grows, program offerings expand, and administrative personnel increase, problems of coordination and control also increase. And in large systems, time and energy are more likely to be shifted away from core service activities.¹⁸

To summarize, the preceding exhibits suggest that *economies* and *diseconomies* of scale are present at different points along the enrollment continuum. Using empirically observed spending levels as a guide, it appears that district consolidations that result in combined enrollments below 3,000 students would be more likely to save money than consolidations that produce districts with more than 3,000 students. This does not mean that larger consolidations could not save money, only that the odds would not appear to be as much in their favor.

Therefore, if the state wishes to reduce overall costs, or to re-invest cost-savings in order to expand educational services, it might reasonably focus on the potential benefits of consolidating relatively high-spending, small districts into lower-spending, larger districts – but with enrollments still below 3,000 students.¹⁹ The underlying principle of this approach is that per-pupil spending might decrease the closer consolidated districts come to an enrollment of 2,500 – 2,999 students.

B. Model of Paired Districts

Although there are 312 districts with enrollments below 3,000 students in Pennsylvania, not all of them border another district with which they could consolidate without creating a combined enrollment above 3,000 students. Nor do all of them spend more than similarly-sized districts, or districts with 2,500 – 2,999 students. As a result, some consolidation scenarios would appear more likely than others to result in a *net* reduction in per-pupil costs for *each* of the districts involved (not just for one district at the expense of another).

Accordingly, this study focuses on a subset of 88 districts which have the following characteristics:

- **Each district’s per-pupil spending is above the average amount spent by similarly-sized districts, and, by extension, is above the average amount spent by districts with 2,500 – 2,999 students.**

¹⁸ Kent McGuire. “School Size: The Continuing Controversy.” *Education and Urban Society* 1989; 21; 164. Retrieved from <http://eus.sagepub.com>

¹⁹ This finding is not meant to be generalized to other states, whose spending patterns may or may not resemble those of Pennsylvania’s school districts. Optimal spending and enrollment sizes can vary among states for many reasons, such as different amounts of spending, differences in local vs. state aid programs, the utilization of regional intermediate units, and other systemic features.

- Each district borders another district whose spending is also above the average for its size, with whom it could potentially consolidate without exceeding an enrollment of 3,000 students.

These 88 school systems are used in this study to model 97 hypothetical district “pairings,”²⁰ which are profiled in Part 2 of this study (a separate document). Some of the districts are included in more than one possible pairing.

- 55 of the 97 pairs of school districts meet the following criteria:
 - Each district currently spends more per pupil – on both an unadjusted and adjusted²¹ basis – than the average amount spent by other districts in the state with enrollments in the same range (shown in Exhibit 3) that the two districts’ combined enrollment would fall into, after merging.
 - Both districts are served by the *same* intermediate unit and the *same* area vocational technical school (AVTS) or career technology center (CTC).
- 41 of 97 pairs of school districts meet the following criteria:
 - Each district currently spends more per pupil – on both an unadjusted and adjusted basis – than the average amount currently spent by all other districts in the state with enrollments in the same range (shown in Exhibit 3) that the two districts’ combined enrollment would fall into, after merging.
 - Each of the two districts that are paired are served by *different* intermediate units and/or *different* area vocational technical schools or career technology centers, which could present organizational hurdles to consolidation.
- 1 pair of school districts that meet the following criteria:
 - Each district currently spends more per pupil on an unadjusted basis, *but not on an adjusted basis*, when compared to the average amount currently spent by all other districts in the state with enrollments in the same range segment shown in Exhibit 3 that the two districts combined enrollment would fall into, after merging.
 - Both districts are served by the *same* intermediate unit and the *same* area vocational technical school (AVTS) or career technology center (CTC).

The profiles of each pair of districts are provided as a tool to support further analysis by local and state policymakers. However, Standard & Poor’s pairing of these districts does not constitute a recommendation that they be consolidated. Additional factors must be taken into consideration by local communities before deciding to pursue consolidation.

²⁰ Although more than two districts could consolidate into a single district, the profiles in Part 2 are limited to the modeling of two districts at a time, to keep the study’s scope manageable. The study’s purpose is not to model all consolidation scenarios, but to provide sufficient analysis to address the Legislature’s research objectives.

²¹ Adjusted spending refers to adjustments made for the higher costs of educating students with economically disadvantaged backgrounds, disabilities, and limited English proficiency, whose proportional enrollments vary from one district to another, as previously explained. Adjustments are also made for any geographic differences in the purchasing power of the dollar that may exist between two districts.

The district pairings can be used to model the potential cost-savings that might be achieved if each pair of districts could reduce its post-consolidation, per-pupil spending down to the average amount spent by similarly-sized districts. In other words, to estimate the amount of money that the 97 pairs of districts *might* be able to save if they were to consolidate, their pre-consolidation spending can be compared to their hypothetical post-consolidation spending. Although it is not possible to predict such spending with any certainty, this study uses the average expenditures displayed in Exhibit 3 as hypothetical estimates.²² For example, if two districts were to consolidate and have a combined enrollment of 2,750 students, their hypothetical post-consolidation spending could be modeled by locating the average expenditure of districts with 2,500 – 2,999 students in Exhibit 3 (\$8,057 per pupil in this example).

Since some of the 88 districts analyzed in this study are included in more than one of the 97 hypothetical pairings, only one pairing can be used to calculate the total amount of money that could conceivably be saved across an optimal number of consolidations statewide. **When the pairings that would produce the greatest hypothetical savings are modeled, the study finds that 34 mutually exclusive pairs of districts could save approximately \$81 million, if - after consolidating - they could lower their per-pupil costs to the average amount spent by similarly-sized districts.**

Although consolidation has the potential to decrease some costs, it has the potential to increase others, depending on local circumstances that vary from one district to another. Some consolidation scenarios may be more likely than others to result in a *net* reduction in costs. As a result, the 97 hypothetical pairings modeled in this study fall into three different groups, as follows:

C. District Consolidations with and without School Consolidations

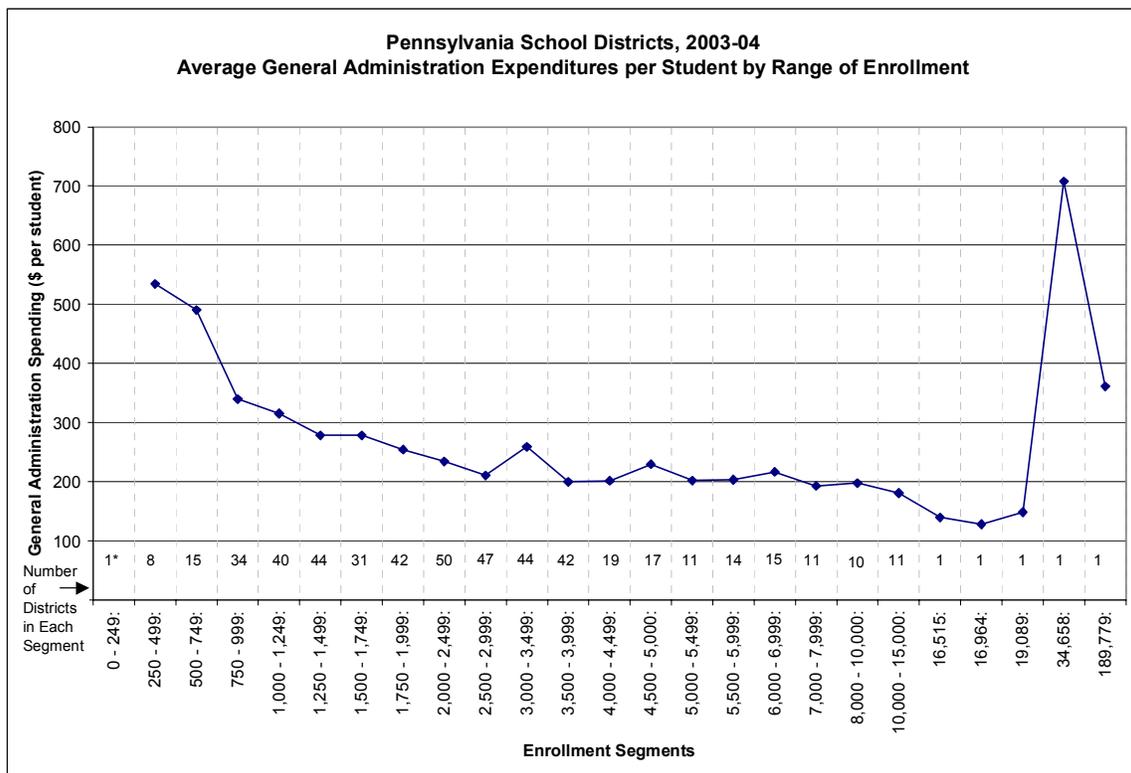
The superintendents in these 88 districts were sent a survey that asked for their opinions on various matters related to consolidation and shared services. When asked if their district were to merge with another district at the administrative level only, *but not close any of their schools*, 42% of this study's 49 survey respondents think consolidation could still achieve cost reductions. When asked if they were to consolidate with another district *and close one or more schools*, 57%

²² Readers may wonder whether these amounts are reasonable spending estimates for consolidated districts. In considering this question, it should be noted that these estimates are drawn from a number of districts that did, in fact, consolidate in the 20th Century. However, that does not mean that all districts that consolidate in the future could necessarily reduce their spending to levels of historically consolidated districts of a similar size. The school buildings in many historically consolidated districts have evolved to accommodate their present enrollment levels, and it should not be assumed that two consolidating *districts* can necessarily consolidate their school *buildings*. Consider a hypothetical example where neither district's high school is large enough to accommodate both districts' students. In such a case, either both high schools would need to remain open (which would reduce potential cost-savings), or the districts would need to close one high school and expand another, or close both high schools and build a new one. The increase in *capital* expenditures for such construction projects could offset the decrease in *operating* expenditures for a number of years to come. Therefore, the ability of two newly consolidated districts to approximate the lower spending levels of historically consolidated districts is likely to depend on their ability to consolidate their school buildings. This does not mean that districts should not consolidate if they have to build additions or new facilities, because net cost-savings could still result in the future. But it does mean that distinctions need to be made between short-term and long-term expectations for cost-savings.

of respondents think that costs would decrease.²³ Thus, the extent to which any of these paired districts could save money by consolidating would depend, in part, on whether or not they could close any of their school buildings, or whether they would only merge at the administrative level.

If no schools could be merged, potential savings might be limited primarily to general administrative costs (see Exhibit 7, which shows that, for the most part, general administrative spending per student tends to decrease and then level out as districts get larger.) However, if sufficient building capacity existed so that two or more schools could be merged, cost-savings might be extended to include such areas as school administration, classroom instruction, instructional staff support, pupil services, food services, and/or operations and maintenance. A number of small, rural districts may be well poised for school consolidations, due to declining enrollments which leaves them with excess building capacity. Some of these districts may have enough capacity to absorb the entire student population in a neighboring district.²⁴

Exhibit 7



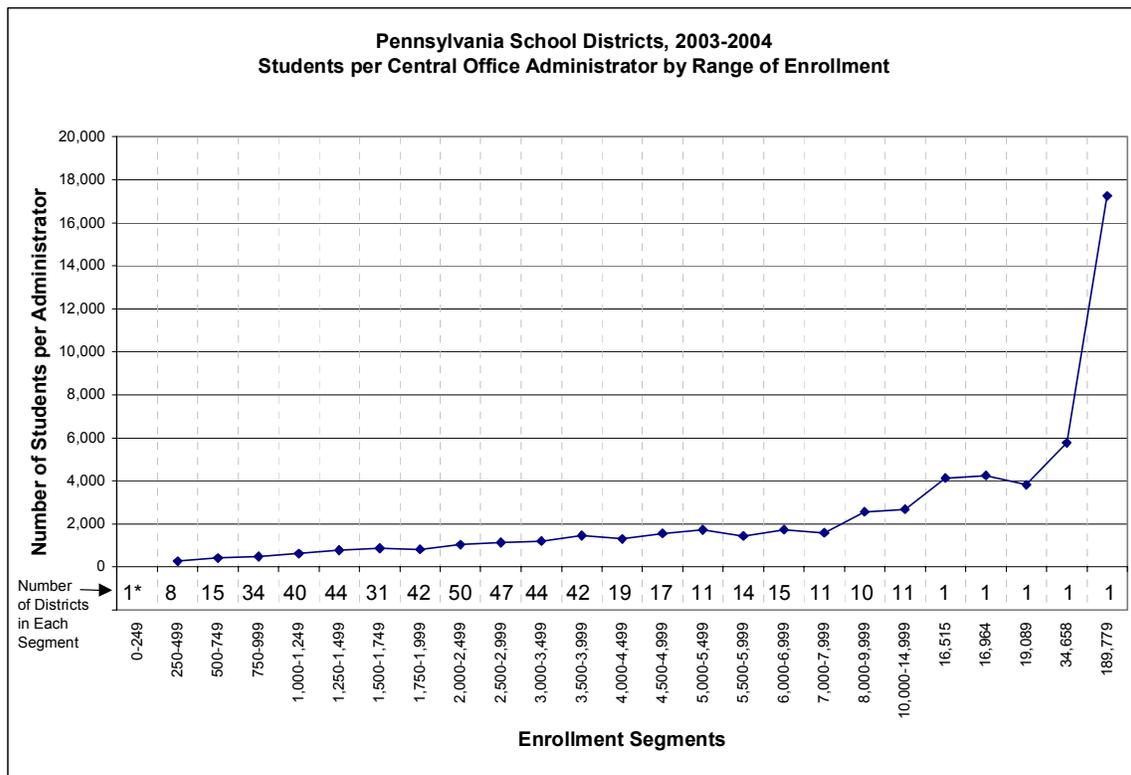
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

²³ Among the 28 respondents who think costs would decrease, 61% express a willingness to consider consolidating (four other respondents are also willing to consider consolidating, even though they think spending could either increase or stay the same). However, it is important to remember that these responses come from superintendents, and in several cases they indicate that their responses reflect their own personal willingness, not necessarily that of the school boards or communities they serve.

²⁴ Information concerning excess capacity was reported during interviews with superintendents. However, an analysis of each district's building capacity is beyond the scope of this particular study.

To take this analysis one step further, the following two exhibits show the relationship between district size and the ratio of students to administrators. Exhibit 8 shows that smaller districts tend to have higher concentrations of central office administrators on a per-pupil basis. However, this does not mean that smaller districts have more individual administrators than larger districts, or that they are necessarily top-heavy. It is entirely possible to have very few administrators (even just one) but at the same time have a high concentration of administrators on a per-student basis. All but 3 of the 26 districts interviewed for this study reported employing only a superintendent, a business manager, and at most, one principal per school. None had assistant principals and only 3 of 26 had other supporting central office administrators, such as a director of human resources.

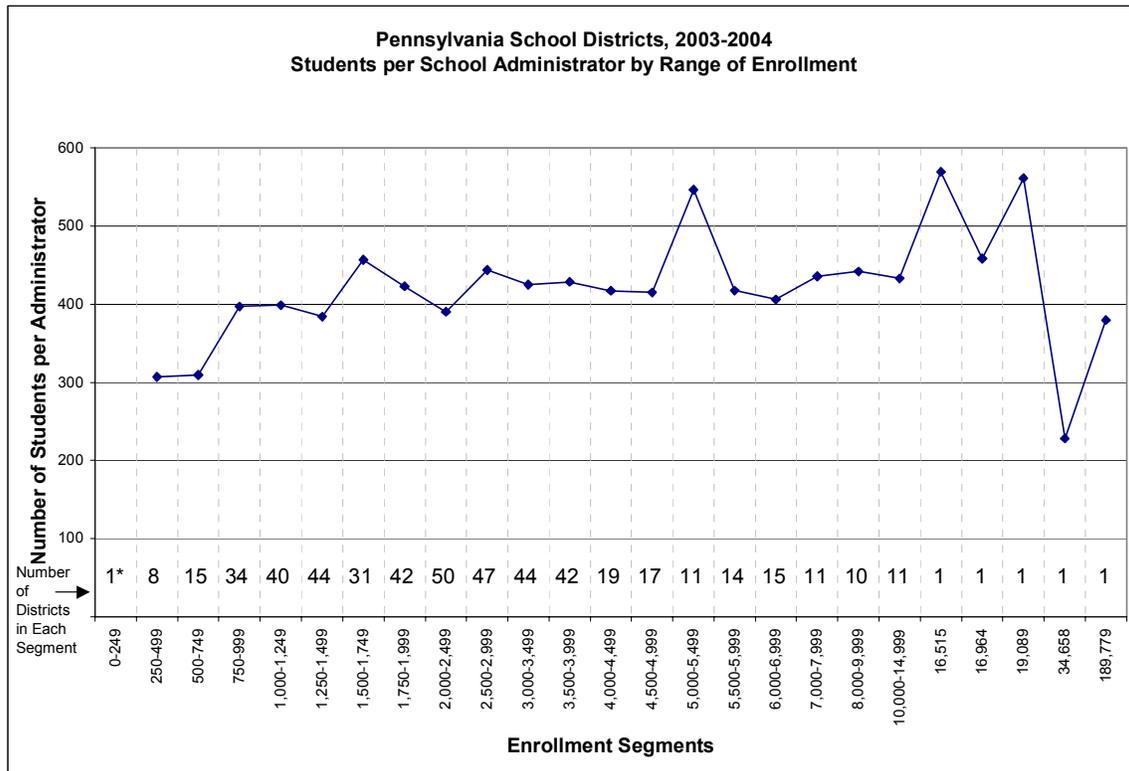
Exhibit 8



The preceding exhibit illustrates that savings could conceivably be realized through a district consolidation, even if it only involved the merger of the central offices, but not the schools themselves.

The next exhibit shows the number of students per school building administrator, by range of enrollment. Unlike the preceding chart, there is no continually escalating ratio of students to administrators as school districts get larger. However, not surprisingly, the smallest districts (those below 750 students) tend to have low numbers of students to school administrators (i.e., high concentrations of school administrators on a per-student basis).

Exhibit 9



The preceding exhibit shows that there are potential school administrator savings from the consolidation of particularly small schools. However, such savings should not be examined in a vacuum; they must be examined with all other costs (including transportation) to determine if a net, overall savings is possible by consolidating two or more schools into one.

Where facilities are concerned, if two districts considering a merger did not have sufficient excess capacity to consolidate any of their schools, they could potentially build a new facility of adequate size. However, the capital outlay for this construction could offset cost-savings from operating expenditures for many years to come (unless one or both districts were already considering the construction of a new school or major improvements to an existing school). This does not mean that districts should not consolidate if they have to build additions or new facilities, because net cost-savings could still result in the future. But it does mean that distinctions need to be made between short-term and long-term expectations for cost-savings.

Another factor to consider relating to school consolidations is whether or not there have been significant, recent capital investments in school buildings. Some districts have invested millions of dollars in facility improvements in recent years, which presents a disincentive for the closure of those schools. Under these circumstances, even if a district could justify closing a school based on student capacity, it might be reluctant to pursue this strategy. “Why throw away these investments [in building upgrades]?” asks one superintendent. Any analysis of the potential net cost reduction around consolidation needs to include a review of recent capital investments.

Sometimes considerations for new school construction in a district prompt wider discussions about district consolidation. When Halifax, a district located approximately 18 miles north of Harrisburg, conducted a feasibility study to build a new high school, it generated interest from nearby Millersburg, prompting officials from Millersburg to revisit the possibility of a consolidation with Halifax. Upper Dauphin was also brought into the discussion, opening up an additional set of questions about costs and student capacity for a new high school. The three districts issued an RFP to conduct a feasibility study for the potential consolidation of all three districts. The RFP covered the areas these districts consider most important to navigate: buildings and infrastructure, financial implications, and educational quality.

A similar conversation took place between Monaca and Center Area districts in Beaver County, located just outside of Pittsburgh. While conducting a feasibility study for a new elementary school, the Center Area school district brought Monaca into the conversation to consider the student capacity of all their buildings with a district consolidation in mind. As a result, Center Area built a new elementary school with enough space to address community growth, house potential parochial schoolchildren over the next 20 years, and handle a potential district merger.

D. The Impact of Consolidation on Real Estate Taxes

One of the key questions surrounding school district consolidations for property owners is the potential impact on local real estate taxes, referred to as millage rates. As noted by the Pennsylvania Department of Education:

The real estate tax is levied on the assessed value of land and buildings owned by individuals and businesses. These values are established by county assessment offices, which appraise each property for purposes of taxation at market value and then apply a predetermined assessment ratio, which could range from 20 percent to 100 percent. A uniform tax millage rate is then levied by the school district against the value of each property. One mill is equivalent to \$1 of tax for each \$1,000 of value. The millage rate times the sum of the values of all properties (known as the district's assessed valuation) produces the potential tax revenue of the district. For the individual taxpayer the millage times the value of the property produces the property owner's tax bill.

Because of differences in assessment policies and practices, school district assessments and millage rates often cannot be accurately compared to one another unless they are converted into “equalized” mills (as shown in the profiles of paired districts in Part 2 of this report, which is a separate document). Equalized mills—also referred to as the equalized tax rate—are the taxes on the *market value* of properties, rather than the *assessed value*. Non-equalized mills (referred to as just “mills”) are based on a property’s assessed value, which is determined by the local assessor’s office in each community and is what local officials use to calculate and collect tax revenue. Again, the benefit of equalized millage rates is that they enable comparisons across school systems.

Even when equalized, two different school districts may charge different millage rates for a variety of reasons. These may include (but are not limited to) the following:

- They may receive different amounts of state and federal aid, which can offset their local tax burden.
- They may have different total property values; therefore, one district may have to levy a different number of mills to raise the same amount of money as the other district.
- They may have different student-to-property value ratios; therefore, one district may have to levy a different millage to raise the same amount of money per student as the other district;
- They may choose to spend different amounts of money per pupil, as a result of different needs and local preferences.

In light of the above complexities, a common metric used by school systems to simplify discussions about taxes is to refer to the dollar amount that one mill generates in tax revenue within the district. For example, a district with 42 mills and \$120 million in total taxable property, generates just over \$5 million in tax revenue, making one mill in that district worth about \$120,000. This metric provides quick insight into the revenue-generating power of taxable real estate and the overall market value of real estate in a community. The revenue producing power of one mill often varies dramatically from one community to the next. One IU executive director cited a nearly \$1.5 million spread in the revenue produced from one mill between two districts in the intermediate unit.

Due to differences in millage rates, two communities that are considering the consolidation of their school districts may be anxious to know the impact that consolidation could have on their respective tax rates. Theoretically, a district's rate could go up, down, or stay about the same after consolidating with another district. There may be no way of knowing more precisely what the impact would be unless or until the two districts create an estimate of their consolidated budget for expenditures and margins. They could then estimate the amount of money that would be needed from local real estate taxes to fund that budget (net of all other sources of estimated revenue, such as state and federal aid, and other local revenues not derived from real estate taxes). This information could then be used in modeling the millage rate that would need to be applied against the two districts' combined assessed valuation to fund the budget. Once an estimated millage rate is sufficiently refined with local knowledge and assessment practices, it could be compared to estimates of each district's millage rate if no consolidation were to take place. Such a process may provide a better estimate of the impact of consolidation on property tax rates than simply averaging the two districts' current rates, since one of the motivations for consolidating may be to reduce overall spending, and by extension, to reduce taxes.

A number of superintendents interviewed for this study indicated that their communities are reluctant to increase their taxes, regardless of potential educational benefits that might result from consolidation. Again, the hope is that a district consolidation might lower taxes. At the same time, this does not mean that the potential to lower taxes necessarily motivates communities to consolidate. In fact, aversion to district consolidation, as outlined below, can be so strong in some communities that even the prospect of a tax *decrease* is not sufficiently enticing to prompt a consolidation.

In 1994, the Pennsylvania Economy League did a comprehensive feasibility analysis for a potential consolidation between the Meyersdale Area School District and the Salisbury Elk-Lick

School District, both located in Somerset County in southwestern Pennsylvania. The study was performed at the districts' request. One finding from the study was that "if the districts were merged in 1992-93, the local tax effort required of the merged district would have fallen in between the two districts". It was estimated that Salisbury's tax rate would decrease by 17 mills in the 1992-93 school year, and the Meyersdale's tax rate would increase by 8 mills in the 1992-93 school year. The merger did not take place, despite Meyersdale's desire to proceed with it. The potential to lower its taxes by 17 mills was not enough, by itself, to convince Salisbury to go through with the merger. (These districts are once again revisiting the issue of consolidation, as discussed later in this study.)

E. Obstacles to Consolidation

In face-to-face interviews and in comments on the written survey, a number of superintendents make it clear that consolidation would be an extremely controversial issue that would face considerable opposition in their communities. There are many reasons cited, including:

Community Identity: The desire to retain local identity is the single most important and commonly cited reason for opposing consolidation. In many instances, residents are not willing to abdicate part of their local control or to forfeit a portion of their community identity, even if the educational and financial benefits of a consolidation have the potential to be significant. One school board member is quoted as saying, "I think it [district consolidation] is a good idea, and I will never vote for it". From a political standpoint, this board member is not willing to 'abandon' his community. In some small towns, the school system is the center of the community, which is focused on the school's athletic teams, and alumni connections. One superintendent noted the paradox inherent in this topic when he said that "huge investments have been made to form a sense of identity in schools and districts. Consolidation works in the opposite direction, breaking down a district's identity". He is referring to the cohesive culture and individual attention to students that makes some schools so effective. Superintendents anticipate encountering a high degree of resistance with respect to community identity.

Transportation: The maximum amount of time most communities are willing to let their students sit on a bus one-way is one hour (for some it is 45 minutes); the potential for longer bus routes for schoolchildren makes school consolidations prohibitive in many settings. This is an immensely important and problematic area relating to consolidation, and the complexities and challenges surrounding student transit should not be underestimated (see full discussion in Objective #5 on page 39).

Socio-economic and demographic differences: The possibility of combining students from different towns instills anxiety in some local residents, who are concerned that academic performance may suffer if their district were to join with a lower-performing school system. Frequently this issue is related to differences in communities' socio-economic and demographic differences, which can be correlated with academic performance.

Neighborhood schools: Many parents are strongly attached to their local schools (especially at the elementary level), making it very difficult for superintendents and school boards to close these schools, even though these schools may represent the best candidates for closure or merger and cost-saving opportunities. Even a district consolidation at the administrative level opens up

the possibility of reassigning students to different schools in the newly formed district, an unwelcome prospect for many parents. With the consolidation of smaller school populations into larger ones comes the concern that it will generate lower levels of personalization for students.

This is just a sampling of potential barriers to consolidation. These and other issues can pose formidable obstacles to consolidation, regardless of potential cost-savings. A number of individuals who were interviewed indicated that consolidation would not be likely to occur in their communities unless it was mandated by the state.

F. Incentives for Consolidation

The reaction to district consolidation is not, however, uniformly disapproving. There are reasons that communities would support consolidation. The number one incentive is the potential for cost-savings, from both the perspective of the taxpayer (i.e., lower tax rates for individuals and companies) and of the district official (i.e., lower educational expenditures and more academic resources). Among the superintendents who answered the survey question asking why some people would support district consolidation, 77% cite the potential financial benefits.

The other major reason cited in support of consolidation is the potential academic advantages it might offer students, in the form of additional courses, programs, and instructional resources. Forty-three percent of superintendents name some form of educational benefit as a reason their community would support consolidation.

As an alternative to mandating consolidation, there may be a less directive way of facilitating district consolidations in the form of modest financial incentives to get the process started. One superintendent noted that there is a significant financial implication for even considering consolidation, because merger feasibility studies cost up to \$50,000. The same superintendent goes on to say, "The state needs to provide incentives in the form of grant aide to districts, if the state wants to carry out a consolidation policy the right way".

Statutory Provisions*

Statutory language concerning the combination of school districts is excerpted from P.L. 30, as follows:

Any two or more school districts or administrative units may combine to create a larger school district. The board of school directors of each school district desiring to form such a combination shall, by a majority vote, adopt a resolution outlining the areas to be combined and file an application for approval with the Superintendent of Public Instruction. The Superintendent of Public Instruction shall place on the agenda of the State Board of Education each such application for its consideration.

The State Board of Education shall review each application upon its agenda and approve such applications as it deems wise in the best interest of the educational system of the Commonwealth.

The State Board may continue the application on its agenda and may permit any school district or interested party, aggrieved by the petition, to file its objection. Such objection shall set forth the basis for and facts of aggrievement.

If an application is not approved it shall be returned to the applying districts for resubmission in accordance with such recommendations as may be attached thereto.

When an application receives approval, the State Board of Education shall direct the Superintendent of Public Instruction to issue a certificate creating the new school district, listing the name, constituting components, classification and effective date of operation.

*1949, March 10, P.L. 30, art. II, § 224, added 1965, Dec. 7, P.L. 1034, § 1, effective June 30, 1966.

2. *Legislative Objective: Evaluate whether the consolidation of school districts at the county, intermediate unit, or other level would enable larger school districts to provide more services such as extensive special-needs programs, after-school programs, and other services that poorer districts traditionally cannot provide or afford.*

Evidence exists that many larger districts provide certain programs that some smaller districts do not offer. For example, 92% of all districts with 3,000 or more students report Advanced Placement (AP) test results, while only 51% of districts with fewer than 3,000 students report such data, which suggests that they do not offer AP courses. One of the superintendents interviewed for this study indicated that his district was unable to offer AP classes due to scheduling constraints, and was unable to offer certain kinds of electives. However, other superintendents indicated that their districts were taking advantage of dual enrollment programs with area colleges, and distance learning programs such as those offered by BlendedSchools.net, which can provide numerous videoconference-delivered courses. Still, many superintendents think that larger school systems are better equipped to provide more services for students.

A total of 63% of the 49 superintendents that responded to this study's survey expressed some level of agreement that consolidation with another district could help them provide additional *academic enrichment opportunities*²⁵ for their students. This is especially true for districts that are trying to increase the rigor of their academic programs. For example, four full years of mathematics, science, English and social studies are now required for every student to graduate in the Halifax Area School District. This makes it especially difficult for the district to offer and schedule high quality courses across all subject areas over four grades; it is also a challenge to hire the teachers who are qualified to teach these classes. This theme was echoed by another superintendent, who comments that "our small size prohibits us from offering a variety of foreign languages and multiple math and science courses".²⁶ The thinking is that consolidation would enable districts to meet these academic needs more easily. This issue is further illustrated in the side bar discussion of the Monaca and Center Area school districts, on the following page.

Along with academic services, there is also support for the notion that larger districts are better equipped to provide certain *extra-curricular opportunities*²⁷ for students. A total of 51% of respondents to the survey expressed some level of agreement that they could offer their students more extra-curricular opportunities by consolidating with another district. Among the 49% of superintendents who disagree that a consolidation would offer students more extra-curricular opportunities, a common refrain is that participation in these programs would decrease, based on the presumption that higher enrollment would limit the opportunity for students to be a member of a team or to have a role in the school drama production, for example. The reasoning is that there would be greater competition for a limited number of positions, thereby decreasing the total

²⁵ The district survey defines academic enrichment as any supplemental academic program that directly supports student learning, including after-school classes or tutoring, remediation programs, gifted and talented programs, summer school classes, etc.

²⁶ Quote drawn from the comments section of the district survey administered by S&P.

²⁷ The survey defines extra-curricular opportunities as any non-academic program, including athletics and special clubs, that are likely to take place outside of the regular school day

number of students able to prominently participate. As one superintendent put it: “It is a serious concern that participation would be significantly reduced among those students who would benefit from being part of at least one small group.”²⁸ Additionally, transportation—an issue raised by superintendents on nearly every consolidation topic broached by this study—was cited repeatedly around academic and extra-curricular services. As one of the superintendents interviewed for this study remarked, “to offer additional programs would require students and their parents to travel greater distances.”

Despite the advantages that some school districts may be able to provide, five out of eight executive directors who responded to an IU survey for this study reported that they strongly disagree with the statement that “*Consolidating all districts within our intermediate unit would enable the single, newly formed district that resulted to provide more services (such as extensive special-needs programs or after-school programs) than some of our small or economically disadvantaged districts could provide on their own.*”

Even if large (e.g., county-wide) consolidated districts could provide services that smaller, economically disadvantaged districts could not afford on their own, it could require an increase in overall spending, rather than a decrease. In fact, the central tendencies observed in Exhibit 3 on page 17 suggest that districts with more than 3,000 students would tend to spend more per pupil than many smaller districts. Unless state aid were provided to fund the services for the disadvantaged districts, it would seem that the wealthier communities in the consolidated regional district would have to subsidize the costs of these services. If this were the case, the wealthier property owners’ taxes would likely increase, which could make the prospects for voluntary regional consolidation less likely – especially if the wealthier schools already enjoy the services that would be extended to the less affluent schools.

A Compelling Reason to Consolidate

Monaca and Center Area school districts, located in Beaver County, are in the process of exploring a merger with one another. The superintendents of these two districts were interviewed for this study, even though their districts did not match the study’s student enrollment criteria for the modeling of consolidation. The discussion with these districts offers insight into the academic motivation for districts to merge, since there is evidence that doing so could enable them to offer a higher caliber of secondary educational programs by making the high school curriculum more relevant to the national and local economy.

The objective would be to potentially offer high school academies that focus on five career paths: technology, business, arts & humanities, science, and health care. These districts could not offer these comprehensive academies on their own, and are studying the potential of merging to enable it to happen. At a formal planning discussion, one high school athlete even publicly announced that she would be willing to give up all sports to be able to take more advanced academic courses.

Issues that make merger discussions in these two communities uniquely positive include:

- A cross-section of stakeholders is involved in the feasibility analysis, generating buy-in and enabling them to see the benefits first-hand.
- There are no transportation issues relative to geographic logistics (the Monaca district is only 2.5 square miles). There would, however, be an increase in expenditures as Monaca does not currently bus its children.
- The two superintendents have a very positive relationship.
- The likelihood of widespread layoffs is low; one superintendent is approaching retirement and the staffs are otherwise lean.
- Most neighborhood schools will be retained.
- They are trying to neutralize the differences in debt-load between districts.

²⁸ Quote drawn from the comments section of the district survey administered by S&P.

On a related note, some of the superintendents interviewed for this study indicated that additional programs offered through a larger, consolidated district could come at the expense of the individualized attention many students receive in smaller districts. None of the individuals interviewed for this study, including intermediate unit executive directors, expressed a favorable opinion toward an IU-wide consolidation of school districts.

3. *Legislative Objective: Analyze whether services could be shared among two or more school districts, much like many municipal services on other levels, without necessarily consolidating the districts*

As an alternative to consolidation, small districts may wish to consider a different strategy to save money – “one that makes it possible to educate students like a small district and still have the economies of scale and buying power of a large district”²⁹ in certain operational areas. The sharing of services is a cost-effective practice that avoids the unnecessary duplication of administrative, operational, instructional, or extra-curricular services. When services are shared, the pro-rated cost borne by each school district is less than what it would cost the district to fund the service on its own. There are numerous instances of shared services in Pennsylvania, which can serve as examples for other districts to follow. As has been noted on Governor Rendell’s website:

*Across the Commonwealth, pockets of school districts are turning to their neighboring school districts to find ways to work together on behalf of their students and taxpayers by sharing services. The savings are real. [For example,] after one year of sharing the services of a food services director, the Cornwall-Lebanon School District and the Northern Lebanon School District gained a combined profit of \$100,000. These school districts collaborated to improve quality and save taxpayers money.*³⁰

In order to encourage an increase in shared services, Governor Rendell’s 2007-08 budget has included \$1 million to provide advice to groups of school districts that wish to learn about ways they can share services and programs in such areas as instructional services, transportation, food services, safety and security, health services, purchasing, finance, payroll, facilities, human resources, technology, and administration.

The good news is that many districts are already taking proactive steps to save money. Just over half (53%) of the 49 districts that responded to this study’s survey indicate that they currently share one or more services with another district (in some cases through the local Intermediate Unit, Area Vocational Technical Center or Career Technology Center). Services are shared in

²⁹ Deloitte Research and the Reason Foundation. (2005). *Driving More Money into the Classroom: The Promise of Shared Services*. New York: Deloitte Development LLC. Retrieved from www.deloitte.com/research.

³⁰ Commonwealth of Pennsylvania. (2007). *Education: Investing In A Better Future*. Harrisburg: Commonwealth of Pennsylvania. Retrieved from http://www.governor.state.pa.us/governor/lib/governor/budget/2007-08/PDE_commoncents.pdf.

such areas as special education, athletics, occupational programs, alternative education, distance learning, purchased services, shared personnel, technology coaching, transportation, health care, food services, and student support.

However, these 88 districts' per-pupil spending levels are still higher than those of a number of other districts, pointing to the need to consider additional cost-saving measures, which could include consolidation. Moreover, 47% of survey respondents indicated that they do not share any services with other school districts (notwithstanding services from the IU, AVTC, or CTC), highlighting a potential opportunity for improving district efficiency in these schools systems by expanding the number of shared district services. In fact, all but three districts expressed a willingness to share services, suggesting strong potential for districts and the state to move forward in this area. Specific operational areas or staff positions that districts indicate a willingness to share services include:

- School psychologist, technology staff, and other specialists
- Special education services and instruction
- Human resource functions
- Joint purchasing
- Advance Placement courses
- English language learner classes
- Teachers for hard-to-find certification areas
- Professional development
- Transportation services
- Gifted and talented academic services
- On-line learning programs

Sharing can extend to facilities, too, such as the sharing of football stadiums and athletic fields.

Logistical issues can make sharing services challenging, even when there is a willingness to pursue this strategy. Turkeyfoot Valley Area school district tried sharing instructional personnel with Salisbury-Elk Lick school district, but the distances and differences in school schedules and teacher contracts made it prohibitive for both districts to continue doing so. Additionally, school districts may not always consider sharing services within the realm of their most typical operational responsibilities. As one IU executive director observed, "The nature of intermediate units is to offer shared services, so districts are disinclined to take this on themselves by sharing between districts, and even less through consolidations." Another IU executive director took this one step further, saying that "sharing services could create lower quality [in terms of service delivery and expertise]." This comment does not necessarily represent the view of all IU executive directors, and certainly does not apply to all services. It does, however, raise the question of whether, in some cases, districts are as effective at sharing certain services as IUs. This question needs to be explored, particularly when districts do not have much inclination to share and are not necessarily equipped to do so, unlike most IUs, which do have the capacity and systems in place to offer shared services to districts.

There are limitations to effective district sharing, according to some superintendents. While some areas like technology or operational services lend themselves well to sharing, others do not. For example, one superintendent does not think that sharing services in regular education, which

encompasses the vast majority of teachers and students, “could happen effectively,” because it is too intensively personalized and focused. Another superintendent dismissed the idea altogether, saying that “it is political poison for us to initiate efficiency ideas, even sharing services.” The implication is that introducing efficiency is tantamount to eliminating jobs, which is not a politically popular action to take for district leaders.

Given the logistical and operational challenges that districts face around sharing services, set against the ability for IUs to offer more shared services relatively easily, the IUs might be an effective vehicle for the state to consider using to expand shared services further. In some cases, intermediate units have the capacity and the willingness to increase the number of joint services offered to districts. As one IU executive director commented with respect to improving the efficiency and effectiveness of educational service delivery on behalf of districts, “If it can be done, and we can pay for it, we will do it”.

Services Shared Between School Districts and Municipalities

Sharing services with other districts is not the only option available to Pennsylvania’s school systems. They also have the option of sharing services with municipalities. As noted in an article entitled *Inter Agency Agreements and Cooperation*, on the Pennsylvania School Business Officials website,

The Commonwealth of Pennsylvania is comprised of numerous overlapping and in some cases, redundant local agencies, each responsible for different public services and duties. Often times, the largest of these agencies is the local school district. All of these districts operate within the numerous cities, boroughs and townships throughout the Commonwealth. Many of the services and responsibilities can be accomplished by joint and cooperative efforts that would in turn save many thousands of dollars and man-hours. In this era of shrinking budgets and downsizing we need to develop ways in which to make our limited resources go farther.

The Pennsylvania Municipal Code and the School Code provide for and encourage interagency agreements and cooperation. In most cases, the legal provisions relating to purchasing, bidding, construction, employment, insurance and labor conditions are similar. Therefore, municipalities and school districts can help each other by cooperating in the purchase of materials, supplies, equipment, construction, cleaning and grounds keeping as well as providing public services.³¹

The article goes on to provide different examples of services and joint purchases that can be shared between school districts and municipalities, such as snow removal, grounds keeping, the purchase of supplies and equipment, joint training, and construction. Under state law, school districts are permitted to jointly purchase materials, supplies and equipment with other school districts or municipalities upon adoption of an appropriate resolution by the board of school

³¹ Tom Murphy and Jack Kennedy. (Undated). *Inter Agency Agreements and Cooperation*. Harrisburg, PA: Pennsylvania School Business Officials. Retrieved from www.pasboerc.org/erc/NewSFUploads/2028si67.doc.

directors. The article explains that the key to successful collaborations is the creation of an appropriate interagency agreement that specifies the purpose of the collaboration, and the respective duties and responsibility of each partner. The article provides a sample inter-agency agreement that can be adapted to many different circumstances, depending on local needs and opportunities.

4. *Legislative Objective: Investigate whether, by pooling state moneys together to provide better services for more rural school districts, the Commonwealth could run a more efficient and ultimately a better system of education for its young people.*

Additional ways that school districts can save money are by participating in programs that “pool” public resources to leverage the collective purchasing power of state and local governments. This is done through streamlined purchasing programs, state-negotiated contracts, procurement networks, and purchasing cooperatives. Examples of these are provided below, followed by a discussion of the efficiencies created by the state’s intermediate units.

Procurement Programs

The Pennsylvania Department of General Services (DGS) offers school districts more than one way to increase their purchasing power. The state’s procurement policy, referred to as *strategic sourcing*, provides a channel for all government units to aggregate spending systematically and to pool purchases for goods and services. All DGS contracts are available to school districts, though district participation in these contracts varies widely. There are two layers of sourced contracts available to districts through DGS: statewide, single source contracts and multiple-award contracts. Single source contracts may offer the greatest potential savings to districts. On the other hand, they may require school systems to participate in standardized state contracts just as they are, without the opportunity for customization, narrowing the options and limiting the flexibility available to districts. For example, the state’s single source contract with a particular computer manufacturer offers just four configuration options, a restriction that may be prohibitive for some districts. The multiple award contracts (detailed below under COSTARS) may offer fewer savings than single source contracts, but provide flexibility and allow districts to maintain their business relationships with established vendors.

The following list represents the state’s major, multiple-award contracts, along with the procurement networks available to districts. The exhibit that follows summarizes the participation rates in these programs.

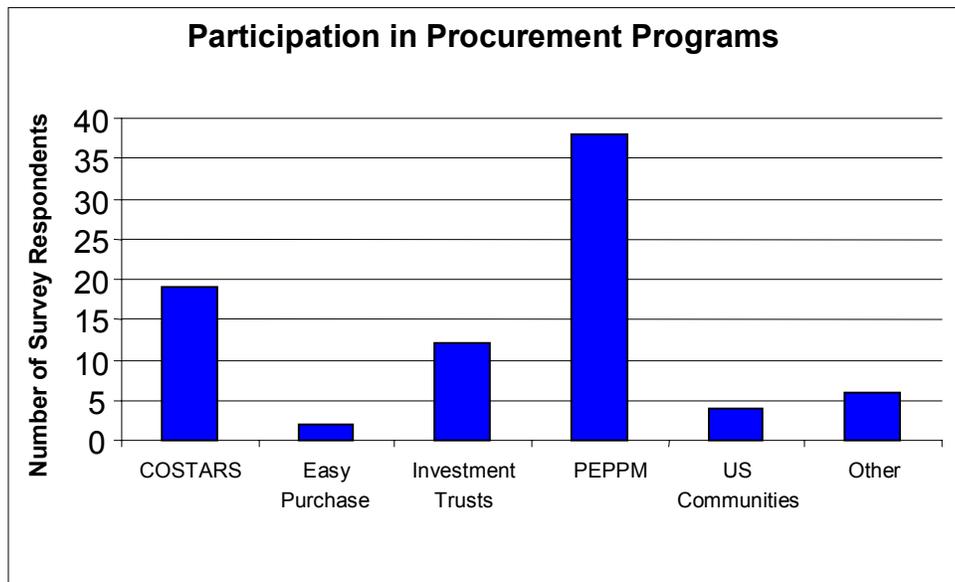
- **COSTARS:** Thirty-nine percent of this study’s 49 survey respondents indicate that they participate in the state’s Cooperative Sourcing to Achieve Reductions in Spending program (COSTARS). The program is provided by the Department of General Services, and allows government agencies such as school districts to participate in state contracts for supplies and services. Volume purchasing results in lower prices, while the use of established state contracts eliminates the need for bid specification development, advertising, printing, mailing and bid evaluation. A broad selection of commodities is available, such as gasoline, fuel oil, power equipment, food, furniture, photocopiers, computer hardware and software, and office

supplies. Over 200 state contracts are currently available for use by participants. Training workshops are provided by the COSTARS staff on how to use state contracts, and the staff actively markets the program to help make local agencies aware of its existence.

- **PEPPM Technology Bidding and Purchasing Program:** Seventy-eight percent of survey respondents indicate that they participate in PEPPM, making it the most subscribed procurement program among these school systems. PEPPM is authorized by the Department of Education and is administered, in part, by the Central Susquehanna Intermediate Unit (IU 16) for the benefit of school districts and other public agencies statewide. Participants take advantage of a centralized clearinghouse of competitive bids that help them save money not only by having access to lower prices, but by eliminating the need to repeatedly specify, advertise, receive, evaluate and award individual bids. Since its inception in 1982, PEPPM has reportedly saved over \$500 million.
- **U.S. Communities:** Eight percent of survey respondents participate in this program. U.S. Communities is a nonprofit “instrumentality of government” that helps public agencies reduce the cost of purchased goods by combining the purchasing power of public agencies nationwide. This is accomplished by competitively soliciting products by a single lead agency and making the resulting contract available to other public agencies nationwide. U.S. Communities’ founding co-sponsors include the Association of School Business Officials, with which the Pennsylvania Association of School Business Officials is affiliated. Examples of the materials and supplies that Pennsylvania’s school districts can purchase at discounted rates include computer hardware and software, school furniture, playground equipment, office equipment and supplies, carpet and flooring materials, telephone and communication equipment, electrical materials, and janitorial supplies.

Additionally, 4% of respondents participate in **Easy Purchase**, and 24% in **Investment Trusts**. Finally, 12% of this study’s survey respondents indicate that they participate in other procurement networks to acquire competitively priced goods and services, some of which are operated by their local IU. Exhibit 10 summarizes the participation rates in state procurement programs for the 49 districts that responded to the district survey administered for this study.

Exhibit 10



Intermediate Units

Pennsylvania's 29 intermediate units were created in 1971 to efficiently provide services to school districts, in part by leveraging greater economies of scale. As part of their ongoing efforts to help school districts save money, a number of IUs operate collective purchasing programs that provide benefits similar to those of COSTARS, PEPPM and US Communities. Allegheny Intermediate Unit 3 (AIU3), with 2,000 full-time staff and a \$164 million operating budget, demonstrates the value IUs can offer districts from an efficiency standpoint by leveraging greater economies of scale.³² In a presentation to the board, AIU3 reported that joint purchasing programs—covering natural gas, electricity, gas, and other supplies—saved participating districts more than \$10.6 million during the 2005-2006 school year.³³ This is just one of the many services AIU3 provides.

However, the efficiencies created by IUs go well beyond the procurement of consumable goods and materials; they extend to the cost-effective delivery of educational services that would be more expensive for many school districts to provide on their own. This is especially true in the provision of special education programs for students with disabilities, who may require smaller classes, the services of specially trained staff, the use of specialized equipment, individualized transportation accommodations, and other forms of support and supervision. Rather than duplicate these specialized staff, facilities, and resources in every school or district, IUs can provide such benefits more cost-effectively on a regional basis (though specific services that are

³² Allegheny IU may also demonstrate the value of IUs offering effective and high quality programs for districts, but that is beyond the scope of this study to determine.

³³ AIU3 reported in an interview that these cost savings were confirmed by a 3rd party auditor.

offered can vary from one IU to another). In fact, many IU executive directors think more can be done at the IU level to improve efficiencies, while keeping individual districts intact. Six of eight executive directors who responded to the IU survey agreed with the following statement: *There are services that districts in our intermediate unit are providing individually that could be consolidated and offered by our intermediate unit to save money without consolidating districts.*

Additionally, survey and interview responses from IU executive directors revealed that participation in IU programs is not always at an optimal level, and that some districts are opting to pay more to fund a service in-house than they would if it were purchased through the IU. In the survey sent to IU executive directors, several respondents disagreed with the statement that districts in their IU take full advantage of the resources and services offered by the IU to help them lower costs and improve the quality of service provided to students.³⁴ In follow-up interviews, at least two districts were identified as paying for their own special education services when, according to the IU, they could get those services for significantly less through the IU, and possibly at a higher quality level.

While this does not appear to be a widespread practice, it may illustrate pockets of inefficiencies in particular districts. Every school district in the state belongs to an intermediate unit, and most, if not all, of the 88 districts analyzed in this study take advantage of IU services. As described above, many of them also take advantage of procurement programs such as COSTARS, PEPPM, and U.S. Communities. Yet, these 88 districts' per-pupil spending levels are still higher than those of a number of other districts, which may reveal the need to consider additional cost-saving measures that could include consolidation.

5. Legislative Objective: Study the effects of consolidation on transportation issues, logistical issues, and other situations that may not be considered on the surface.

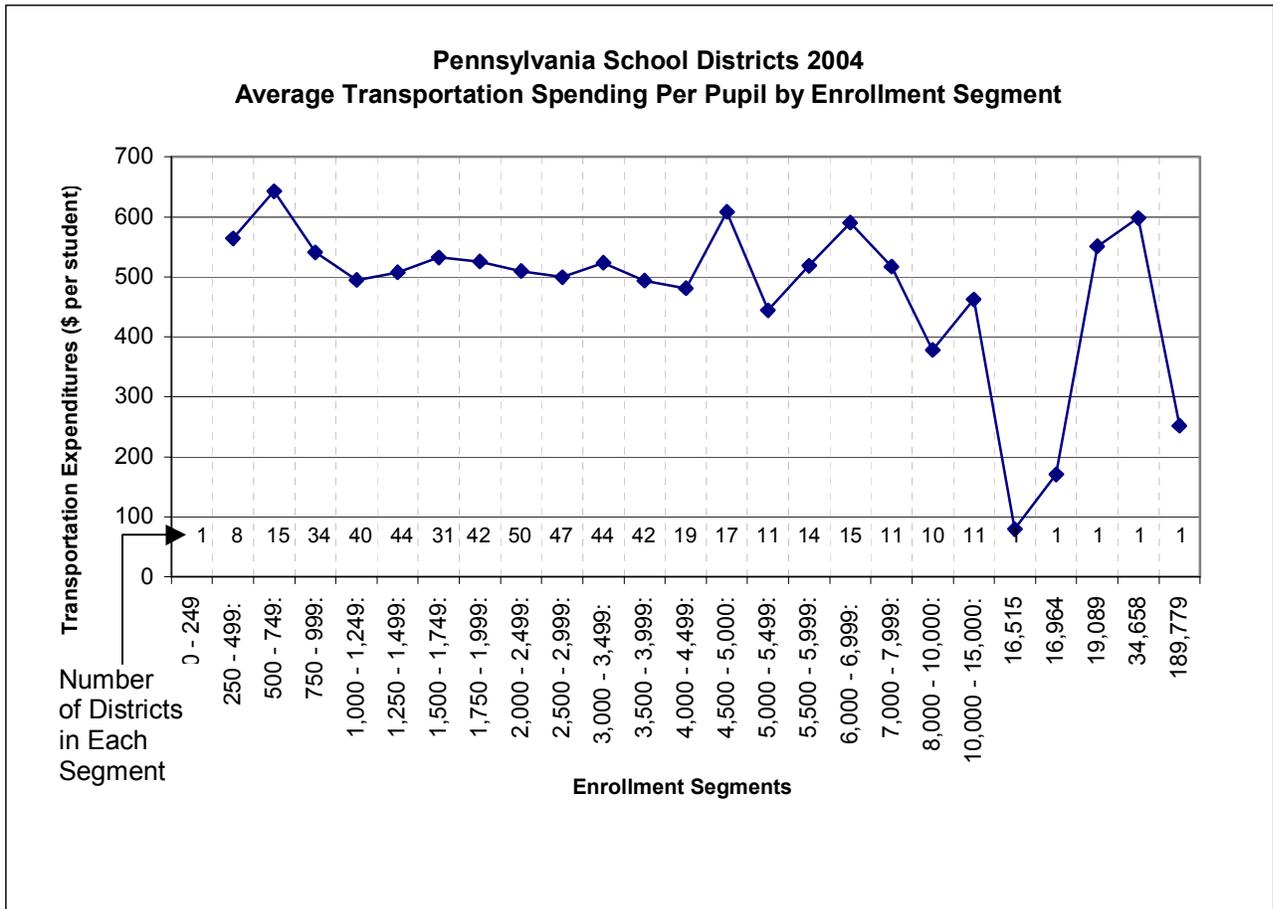
This study's consideration of transportation and logistical issues includes the potential impact of consolidation on transportation costs, the length of bus routes, and the amount of time students spend on school buses.

Transportation Costs

The exhibit that follows shows that average spending per pupil for transportation tends to be higher among school districts with fewer than 750 students than in districts with 750 – 4,999 students. Among districts with 5,000 or more students, per-pupil costs fluctuate significantly.

³⁴ On the other side of the equation, there are various reasons some districts do not contract with their IUs for certain services. The scope and quality of services provided by IUs may vary. In certain instances, this may be a function of the number of staff and the size of the annual operating budget. Some intermediate units have more capacity to serve districts than others.

Exhibit 11



The potential impact of school district consolidation on transportation expenditures is particularly difficult to model based only on enrollment, because economies of scale where transportation is concerned are determined more by cost per mile driven, not just by cost per student transported. As a result, consolidation's impact on the transportation expenditures of two or more school districts would depend on the these important variables:

- Whether or not any of their schools would be closed;
- Whether or not the attendance zones of any of their schools would be changed, regardless of whether any of their schools are closed;
- Whether or not the grade levels served at any of their schools would be changed;
- The geographic expanse of the newly formed district;
- Its effect on the length and number of transportation routes;
- Its effect on the number of vehicles and drivers needed; and
- The number of miles driven.

Consider, for example, that some districts could consolidate just their general administrative offices, but none of their schools. If none of their schools' attendance zones or grade levels were

changed, then bus routes and transportation expenditures might remain relatively unchanged. However, if some of their schools' attendance zones or grade levels changed, it could either increase or decrease transportation costs, depending on local circumstances. Under yet a different scenario, if two or more consolidating districts were to close one or more of their schools or change their grade levels, then attendance zones would certainly change, and some students might have to be transported longer distances. This scenario might or might not increase transportation costs. Although it costs more to transport students a longer distance than a shorter distance, some or all of those costs might be offset by net reductions in the number of vehicles and drivers used after districts consolidate, or by double-routing (where elementary students ride the same bus as secondary students), or by a decrease in the number of after-school activity buses used for programs such as extra-curricular athletics. So much depends on local circumstances that it is not possible to generalize the effects that district *and* school consolidations would have on transportation.

This may explain why districts that were surveyed for this study responded the way they did to questions about transportation costs. When asked what they think would happen to their transportation expenditures if they were to consolidate with another district *but not close any schools*, 26% of the 49 respondents think that costs would increase, 17% think they would decrease, and 57% think they would remain the same. But when asked what they expect to happen to their transportation costs if they were to consolidate *and close one or more schools*, 64% of the 49 survey respondents think that costs would increase, 19% think they would decrease, and 17% think they would stay the same.

Towanda Area School District

The Towanda Area School District in Pennsylvania offers a rare, empirical example of the cost benefits of consolidation on transportation. To measure the impact of consolidating the district's six schools to create a district with three, Towanda officials documented the total number of miles traveled by bus daily, together with the total price to subcontract transportation across two school years, 2005-2006 and 2006-2007. The first year captured the number of miles and the contract amounts while the district still had six schools open; the second year captured the number of miles and the contract amounts with only 3 schools in the district. The district was able to show that transportation costs decreased from \$1,163,387 in the 05-06 year to an estimated \$913,589 in the 06-07 year, for a total estimated cost reduction of \$249,798, much of which has already been realized by the district at the time of this study's preparation.³⁵

Such different expectations are mirrored in a study of School Administrative Units in Maine, which found that some of them "experienced expenditure increases during the year of consolidation while others experienced expenditure decreases."³⁶ Similarly, a study of spending in several states that was published in the *Journal of Research in Rural Education* found that post-consolidation transportation expenditures grew at a lower rate than the state average in seven out of 14 districts; grew at a higher rate in 6 districts; and grew at nearly the same rate in one district. As the authors note,

³⁵ All figures supplied by the Towanda Area School District.

³⁶ David Silvermail, Aaron Ritter, and James Sloan. (2007). *Analysis of the Impact of School Consolidation on Student Transportation Cost*. Center for Education Policy, Applied Research and Evaluation, University of Southern Maine. Retrieved from www.usm.maine.edu/cepare/Reports/Student_Transportation_Cost.pdf

*These discrepancies may be explained by the uniqueness of each district in terms of student enrollment, geographic location and categorical revenue receipts and expenditures... The review of the literature would suggest that each school district considering reorganization should study the implications of consolidation in the context of fiscal, educational and community advantages... [and] that districts contemplating consolidation should look in depth at the various individual factors involved.*³⁷

Beyond these findings, a review of the literature for this study did not yield a great deal of research-based information applicable to the issues Pennsylvania is exploring with regard to consolidation's impact on transportation. As noted in an article published by the Appalachian Education Laboratory, "despite the magnitude and cost of the school transportation system, a surprising shortage of information exists about the bussing of children, apart from government safety figures. Very little has been done to examine the effect of this massive system on school budgets."³⁸ Similarly, an article prepared for the Rural School and Community Trust notes that the cost of transportation is one of the most understudied issues in the literature on consolidation. It states that, "[i]deally, per pupil transportation costs should be compared before and after school district consolidation, but no such national data exist to do that."³⁹ Compounding matters is the fact that some of the literature is advocacy-oriented or ideologically-driven, and requires a certain degree of circumspection on the part of readers.⁴⁰

Length and Duration of Transportation Routes

Superintendents' perceptions on the duration and distances of transportation routes are similar to their views on costs, though more expect the length (both in time and distance) of transportation routes to increase under a district consolidation, even without school closings (presumably because grade levels within the schools would be reconfigured, which would affect student transportation routes). When asked what they think would happen to the length of transportation routes if they were to consolidate with another district *but not close any schools*, 42% of the 49 respondents think that the length would increase, 2% think it would decrease, and 56% think it would remain the same. When asked what they think would happen to the length of transportation routes if they were to consolidate *and close one or more schools*, 75% of the 49 respondents expect to see an increase in the length, 4% expect to see a decrease, and 21% expect it to remain the same.

³⁷ James Streifel, George Foldes, and David Holman. (1991). The financial effects of consolidation. *Journal of Research in Rural Education*, Winter 1991, Vol. 7, No. 2, p. 17.

³⁸ B. Spence. (2000). *Long school bus rides: Their effect on school budgets, family life, and student achievement*. Rural Education Issue Digest. Charleston, WV: AEL, Inc. (ERIC Document Reproduction Service No. ED 449 955)

³⁹ K. Killeen and J. Sipple, (2000). *School consolidation and transportation policy: An empirical and institutional analysis*. Randolph, VT: Rural School and Community Trust.

⁴⁰ M. L. Arnold. (2005, December 31). Jump the Shark: A rejoinder to Howley, Theobald, and Howley. *Journal of Research in Rural Education*, 20(20). Retrieved from www.umaine.edu/jrre/20-20.pdf. Arnold cautions that a researcher's belief in the merits of rural education should not result in advocacy research that seeks to prove a predetermined outcome or that ignores contradictory evidence, citing as an example a study that downplays the benefits of consolidation while highlighting the negative effects.

Where the amount of time students spend in transit is concerned, responses from 20 districts that responded to a follow-up survey question about transportation time and distance yielded the following information:

- The average distances for one-way bus routes for all children in the district are between 3 miles and 55 miles, with an average route of 23 miles.
- The average amounts of time spent for one-way bus routes for all children in the district are between 10 minutes and 73 minutes, with an average route of 30 minutes.
- The single longest distances for a one-way bus trip for one child in the district are between 7 miles and 72 miles, with an average of 32 miles.
- The single longest amounts of time for a one-way bus trip for one child in the district are between 15 minutes and 97 minutes, with an average of 45 minutes.

These distances and times place many districts near the threshold of what their communities will tolerate. On average, districts reported that one hour is the maximum reasonable time for any student to spend on a bus for a one-way trip, and this upper limit of time is not considered desirable. Some districts find themselves exceeding this threshold unavoidably. One superintendent reported in an interview that the longest one-way bus route for some children in his district is 1 hour and 45 minutes, including kindergarten students who leave their homes at 6:40 a.m. and get home at 4:50 p.m. Still, this district is intent on avoiding any additional cases like this, as are other districts in similar circumstances.

Some of the districts surveyed and interviewed for this study think that the length of bus routes that would accompany consolidation would be too long for students to endure and would be opposed by parents. The sentiment is that if consolidation is something that is going to add more one-way bus trips that exceed an hour for one student, then it is something to be avoided. It was also pointed out that in mountainous regions, the roads that connect two districts are often closed during inclement winter weather, making consolidated transportation routes all but impossible without literally going around the mountain on a time-consuming run.

Transportation routes deserve careful attention, since they can impact how students experience school, and can reduce the time they have to spend at home with their families or engage in homework, recreation, or employment. An article published by the ERIC Clearinghouse on Rural Education and Schools found that important questions “concern the length of rides experienced by rural students, the effects of those rides on school participation and academic achievement, and the impact of widespread school busing on rural ways of life.”⁴¹ These topics go beyond the Legislature’s research objectives for this particular study, but are germane to any state or local analysis of the pros and cons of consolidation. Superintendents emphasized repeatedly that transportation issues are one of the top reasons communities would oppose district consolidation. In one superintendent’s opinion, even if there were academic benefits to a district consolidation, “the transportation issue would trump any potential gains educationally.”

⁴¹ Aimee Howley and Craig Howley. (2001). Rural School Business. ERIC Digest ED459969. Eric Clearinghouse on rural Education and Small Schools. Retrieved from www.ericdigests.org/2002-03/busing.htm

ADDITIONAL FINDINGS

Consolidation and Academic Achievement

While the data suggest that certain consolidation scenarios could produce financial benefits, it is also important to consider the potential impact, if any, that consolidations might have on student achievement. Exhibit 12 is useful for visually inspecting whether there is an existing relationship between district size and student achievement. The graph shows each enrollment segment's average proficiency rate on the Reading and Math portion of the Pennsylvania System of Student Assessment (PSSA)⁴². It also shows each segment's average enrollment rate of economically disadvantaged students.⁴³

Interestingly, the proficiency rates of various enrollment segments show a degree of similarity. In fact, when statistical regressions of the state's 501 school districts are analyzed, there is virtually no correlation between their size of enrollment and their reading and math proficiency rates on the PSSA. The regression of proficiency rates and enrollment sizes has an R-squared value⁴⁴ of only 0.0122 (and only 0.0351 when the correlation is limited to the 312 districts with enrollments below 3,000 students). In other words, enrollment size is not predictive of academic proficiency rates.⁴⁵

Consolidation and Adequate Yearly Progress Under the No Child Left Behind Act

Although there is no predictive relationship between school size and academic proficiency rates in reading and math on the state's PSSA tests, this does not mean that average district-wide proficiency rates might not change as a result of consolidation. If a relatively higher-performing district were to consolidate with a lower-performing district, their combined proficiency rates could end up being lower than the higher-performing district's rates were prior to consolidation, simply because of averaging. This can present a significant deterrent to consolidation because of the performance objectives of the federal No Child Left Behind Act (NCLB). One of the goals of NCLB is for all students to demonstrate proficiency in reading, math, and science at various grade levels by 2014. All schools and districts are held accountable for making Adequate Yearly Progress (AYP) toward this goal. Those that do not make AYP may be designated as "needing improvement," and can be subjected to adverse regulatory actions. Therefore, a higher-

⁴² The Proficiency rate represents the percentage of all PSSA Reading and Math tests taken in the district that earned a score of "Proficient" or higher.

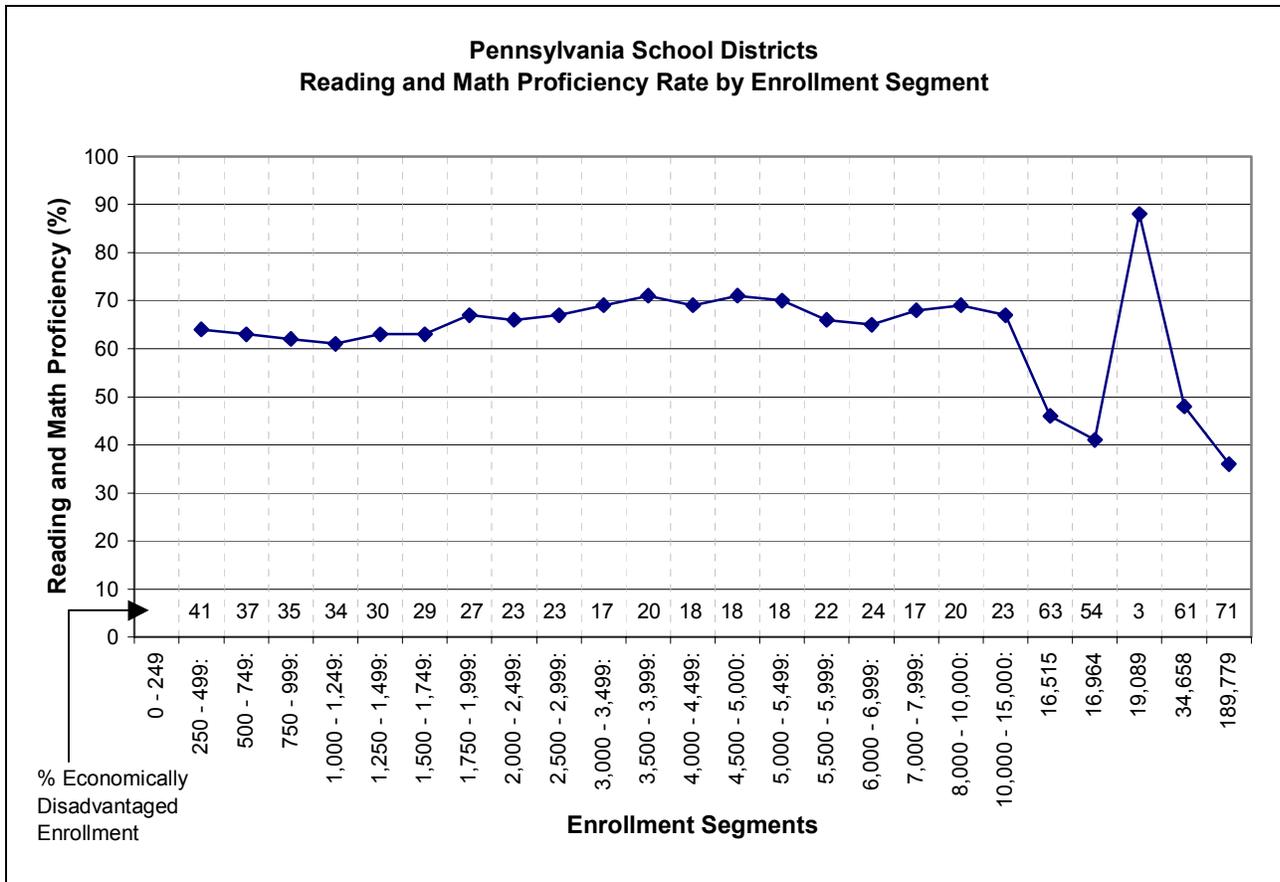
⁴³ Enrollment and expenditure data are from the 2003-04 year; proficiency data are from the 2004-05 year. Also note that one district has 0 students, so it has no PSSA proficiency rate or economically disadvantaged enrollment rate.

⁴⁴ *R-squared* is a statistical measure of the predictive relationship between two variable; it represents the percentage of change in one variable that is associated with the change in another variable. R-squared values can range from 0.0 to 1.0. The closer the value is to 1.0, the stronger the predictive relationship is between two variables.

⁴⁵ Readers may be interested to know that proficiency rates are strongly correlated with economically disadvantaged enrollment rates; the regression for all school districts in the state has an R-squared value of 0.6. Yet there is virtually no correlation between proficiency rates and per-pupil spending, which has an R-squared value of 0.0001.⁴⁵

performing district may be reluctant to consolidate with a lower-performing district, because it would be harder to make AYP after consolidating (from the higher-performing district’s point of view). This is a very real concern raised by some of the district leaders who were interviewed for this study. When combined with the other potential objections to consolidation previously cited, it is clear that communities will have to address many complex issues and trade-offs if they wish to consider a merger.

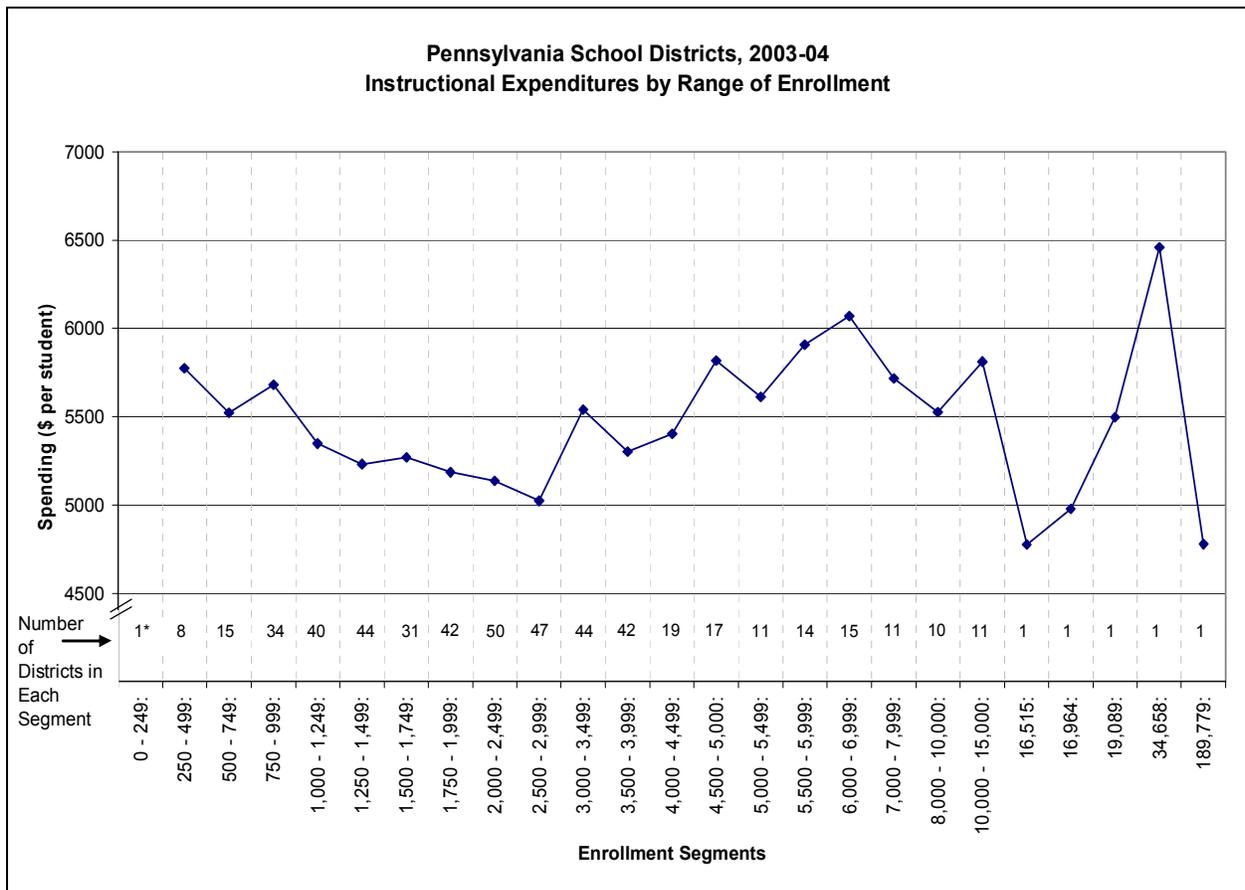
Exhibit 12



APPENDIX A

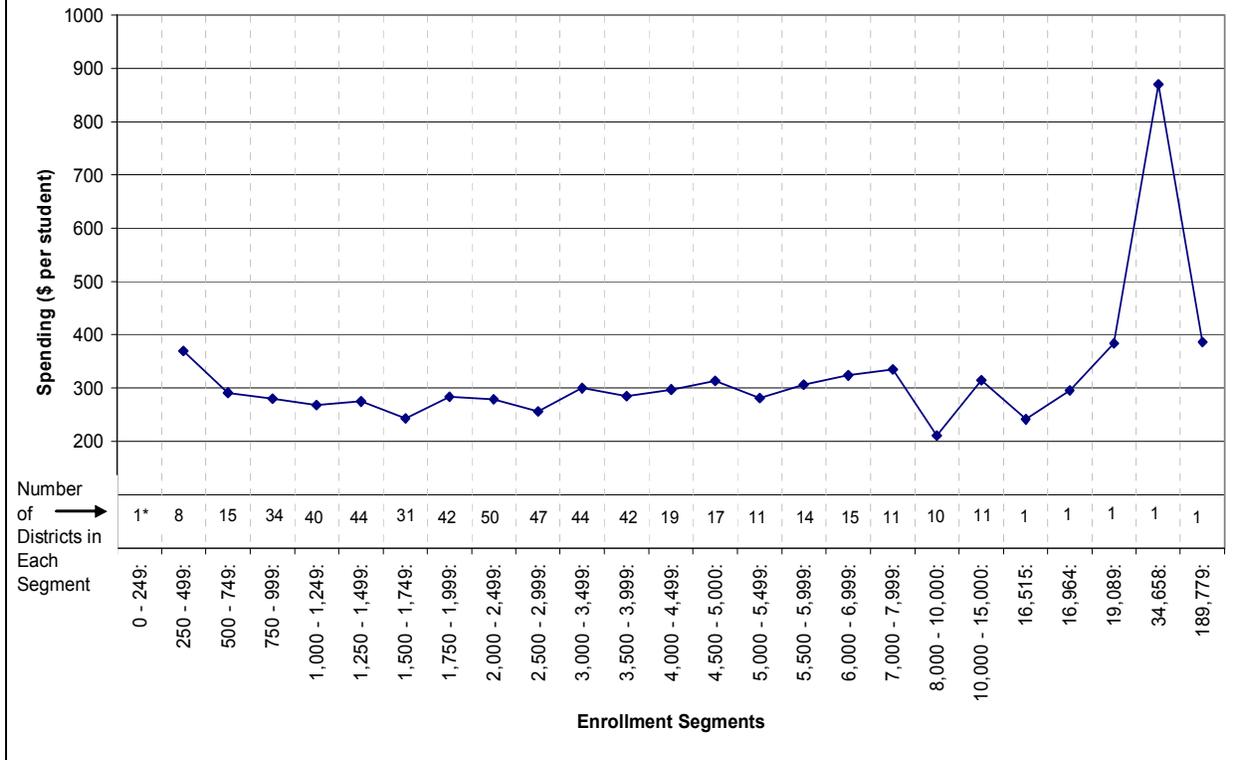
PER-PUPIL SPENDING BY FUNCTION COMPARED TO DISTRICT ENROLLMENT

The following graphs show per-pupil expenditures broken out by the functions that comprise operating expenditures, and compares them with enrollment segments.



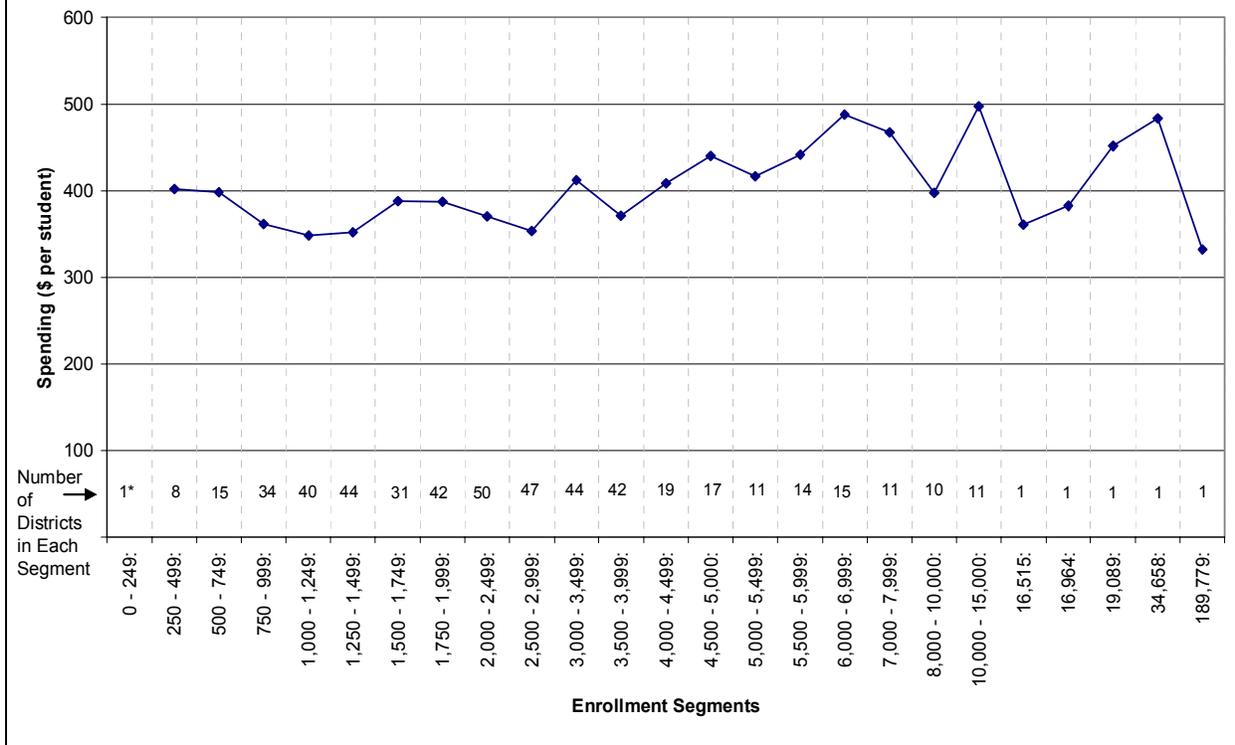
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Instructional Support Expenditures by Range of Enrollment**

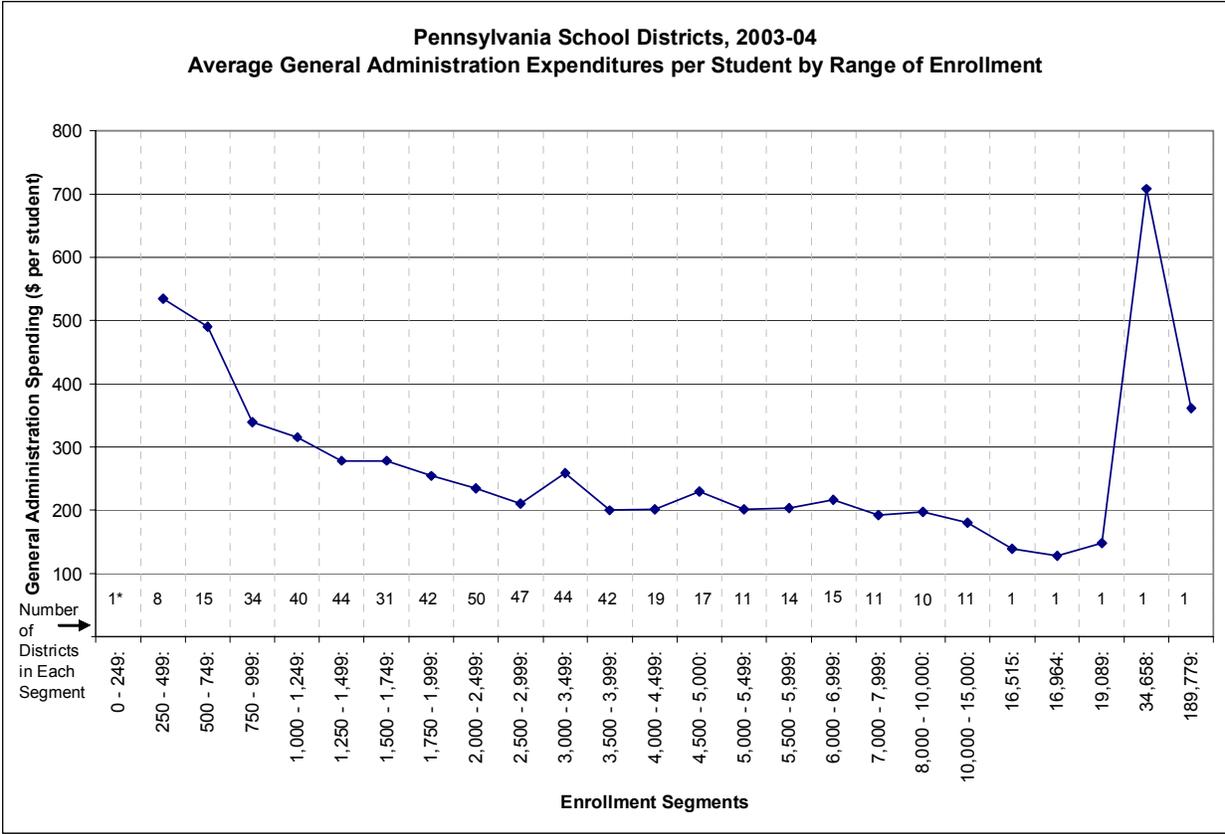


* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Pupil Support Expenditures by Range of Enrollment**

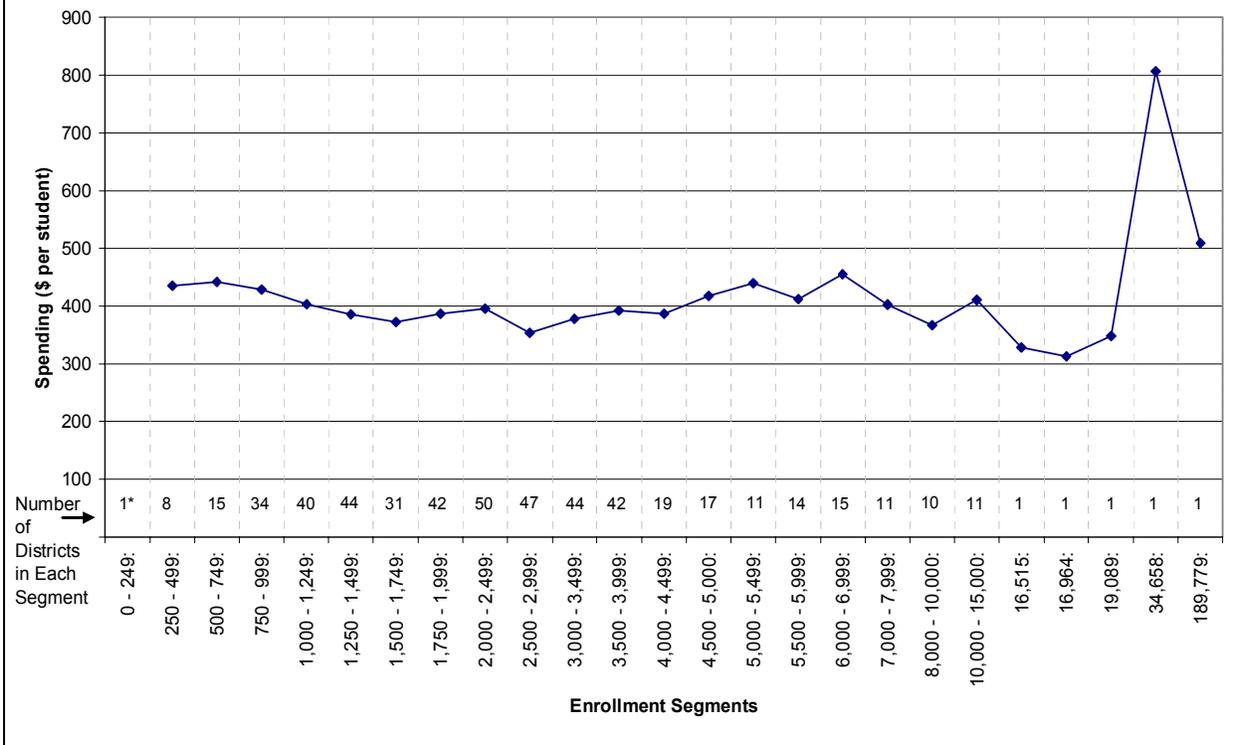


* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.



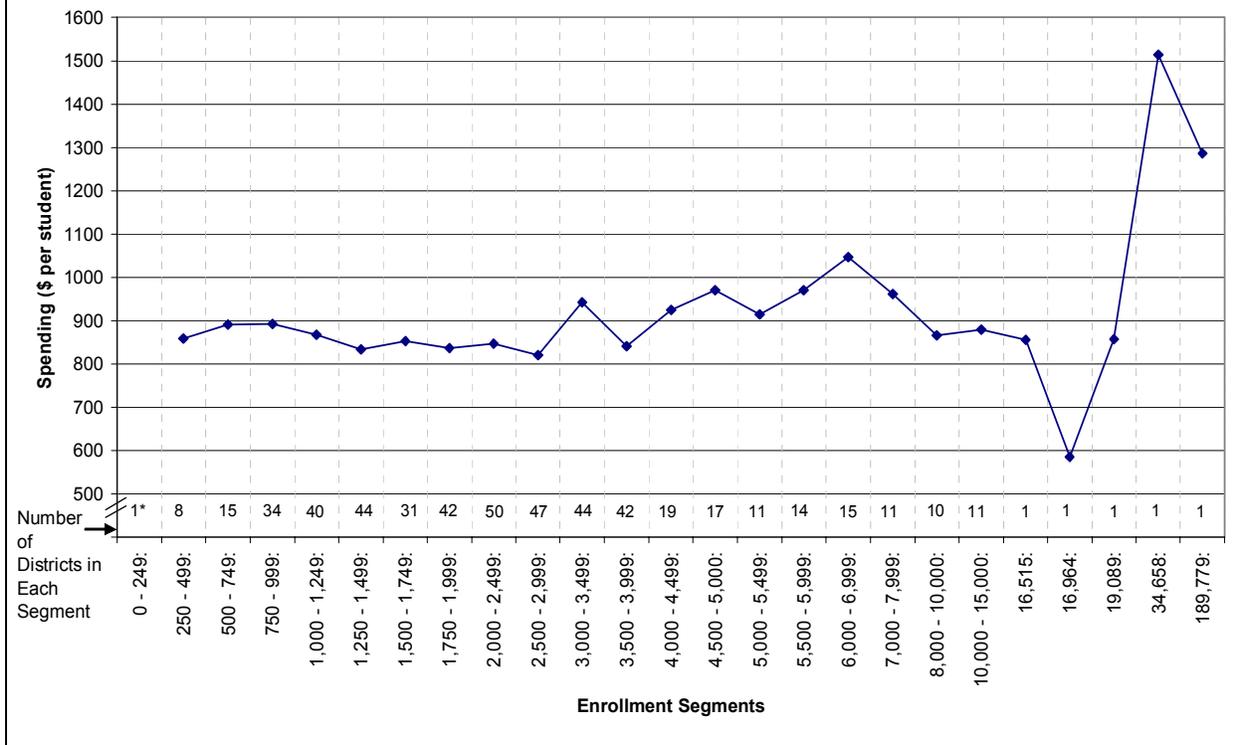
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
School Administration Expenditures by Range of Enrollment**



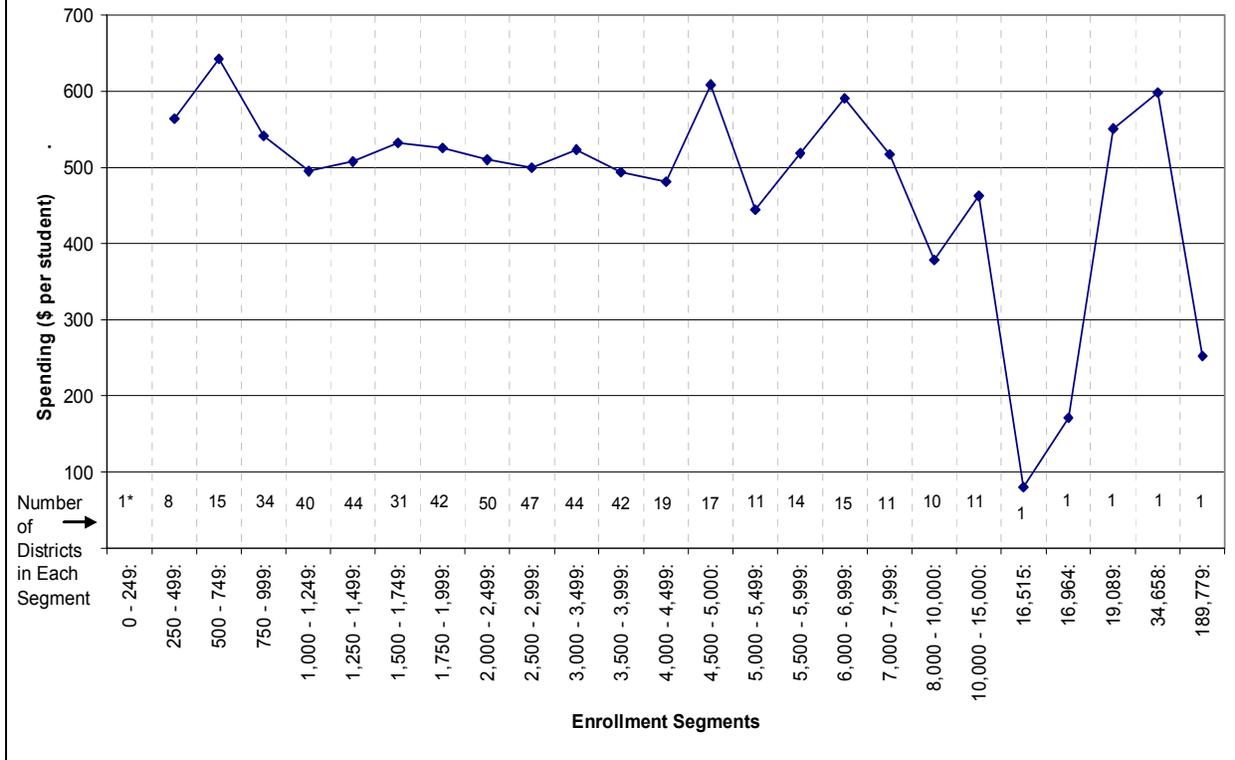
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Operations and Maintenance Expenditures by Range of Enrollment**



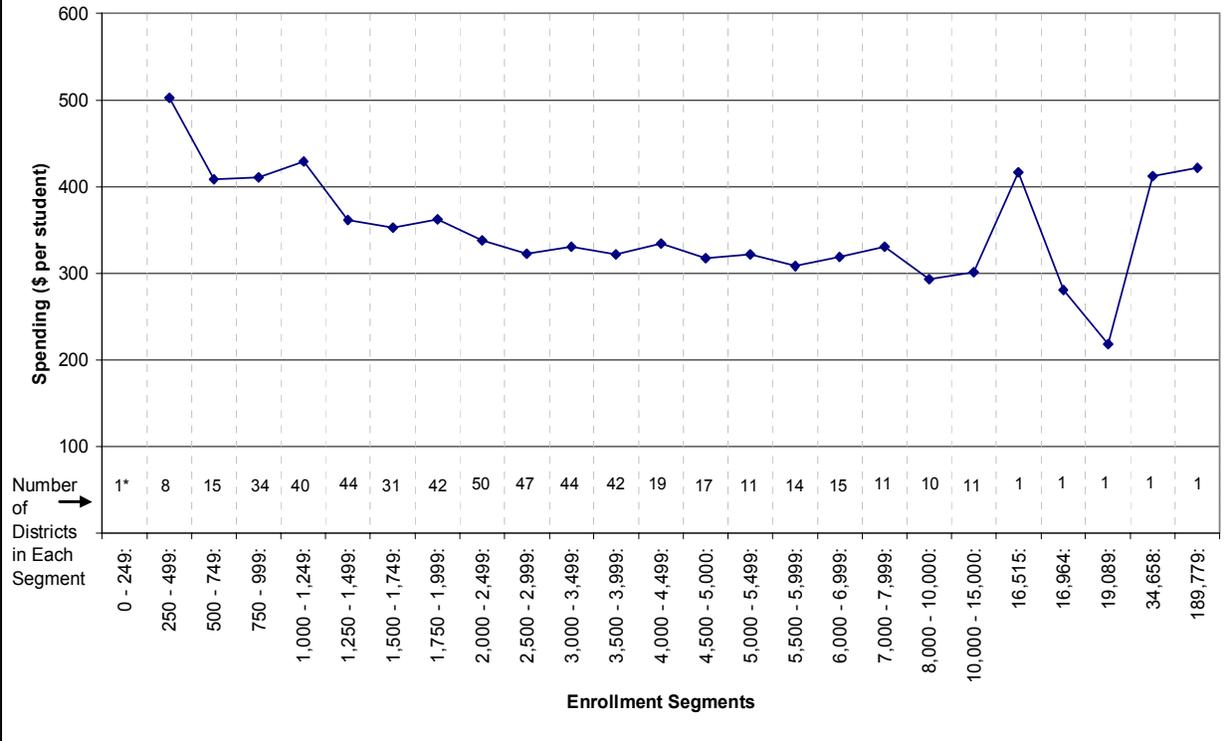
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Transportation Expenditures by Range of Enrollment**



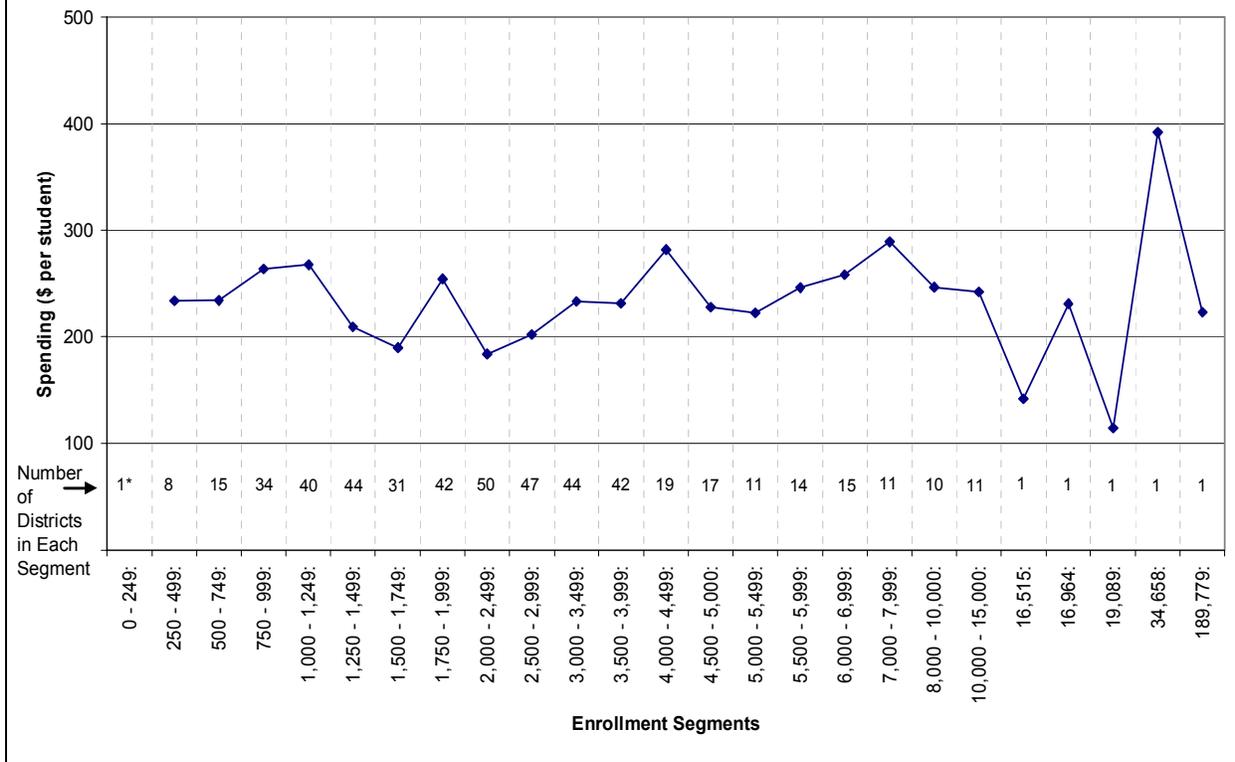
* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Food Services Spending by Range of Enrollment**



* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

**Pennsylvania School Districts, 2003-04
Other Expenditures by Range of Enrollment**



* One district has 0 students, so its spending cannot be calculated on a per-pupil basis.

APPENDIX B

DISTRICT QUESTIONNAIRE & SUMMARY OF RESPONSES

A written survey containing 18 questions was administered to the 88 school districts that were focused on in this study. Forty-nine districts completed the questionnaire, yielding a 56% response rate. The specific survey questions are listed below, along with a summary of responses on the measurable questions, showing the frequency of answers selected for each.

PAST CONSOLIDATION EXPERIENCE:

1. In the past ten years, has your school district *considered* the possibility of consolidating with one or more school districts? Please mark yes or no, and provide additional information if yes.
 - 22.4% answered yes
 - 77.6% answered no
 - 49 responses received

EDUCATIONAL SERVICES:

2. Indicate the extent to which you agree or disagree with the following statement (consider a hypothetical district consolidation⁴⁶):

“Consolidating with another district would offer our students more *academic enrichment* opportunities than we currently offer” (for this question, you may consider any type of hypothetical district consolidation, including one that involves merging or closing schools or one that does not involve merging or closing schools; academic enrichment refers to any supplemental academic program that directly supports student learning, including after-school classes or tutoring, remediation programs, gifted and talented programs, summer school classes, etc.).

- 12.2% strongly agree
- 51% somewhat agree
- 22.4% somewhat disagree
- 14.3% strongly disagree
- 49 responses received

⁴⁶ The questionnaire provided the following information: This study is predicated on reducing costs while maintaining or increasing the quality of educational service. S&P understands that your answers to questions involving a *hypothetical district consolidation* might vary depending on the specific district involved in a consolidation with your district. For questions that deal with a *hypothetical district consolidation*, please answer the question as if you were consolidating with a local district that would be your ideal choice, i.e. a district that has the qualities that you think would facilitate a successful consolidation, which is beneficial from a cost reduction and quality of service perspective for both districts.

3. Indicate the extent to which you agree or disagree with the following statement (consider a hypothetical district consolidation):

“Consolidating with another district would offer our students more *extra-curricular* opportunities than we currently offer” (for this question, you may consider any type of hypothetical district consolidation, including one that involves merging or closing schools or one that does not involve merging or closing schools; extra-curricular opportunities refer to any non-academic program, including athletics and special clubs that are likely to take place outside of the regular school day).

- 8.2% strongly agree
- 42.9% somewhat agree
- 38.8% somewhat disagree
- 10.2% strongly disagree
- 49 responses received

COSTS:

4. Place an X next to the state procurement programs listed below that your district participates in presently.

[Some of the 49 respondents selected more than one. The following figures are reported as the actual number of responses to that item, not percentages.]

- 19 use COSTARS
- 38 use PEPPM (through IU 16)
- 2 use Easy Purchase
- 4 use US Communities
- 12 use Investment Trusts
- 6 use “Other”.

5. If your school district were to consolidate with one or more districts *only at the administrative level and not close or merge any schools*, what do you think the impact would be on overall spending? Place an X next to your answer. (Consider a hypothetical district consolidation)

- Increase (14.6%)
- Decrease (41.7%)
- Stay the same (43.8%)
- 48 responses received

6. If your school district were to consolidate with one or more districts, *and close or merge one or more schools*, what do you think the impact would be on overall spending? Place an X next to your answer. (Consider a hypothetical district consolidation)

- Increase (22.4%)
- Decrease (57.1%)
- Stay the same (20.4%)
- 49 responses received

7. Is your district presently *sharing services* with another district (sharing services refers to the practice of two or more districts, while remaining independent, sharing one or more academic or operational services because it is beneficial to both districts from a cost and quality perspective)?

- 53.1% answered yes
- 46.9% answered no
- 49 responses received

8. Would you **consider** *sharing services* with a district outside of a district consolidation, if you are not already doing so? For this question, please consider a local district that would be your ideal choice to share services with (sharing services refers to the practice of two or more districts, while remaining independent, sharing one or more academic or operational services because it is beneficial to both districts from a cost and quality perspective).

- Strong degree of willingness (40.4%)
- Moderate degree of willingness (42.6%)
- Moderate degree of unwillingness (4.3%)
- Strong degree of unwillingness (2.1%)
- Not applicable; already sharing services with another district (10.6%)
- 47 responses received

9. If you indicated a strong or moderate degree of willingness to **consider** sharing services in question #8, what specific services would you consider sharing? Mark this section “not applicable”, if you indicated an unwillingness to share services in question #8.

TRANSPORTATION:

10. Please provide the following information to help us better understand transportation logistics in your district:

- a. How many miles are traveled by bus daily across your entire district?
 - Miles/day—(1,381) average, (4,489) maximum, out of 44 responses.

- b. How many buses and vans does the district own or lease?
 - # of buses—(6.5) average, (43) maximum, out of 46 responses
 - # of vans—(2.8) average, (18) maximum, out of 46 responses
 - c. How long is the **average** bus route for all children in your district, one-way?
 - Average route in distance: # of miles—(23) average, 3 (min), 55 (max), out of 22 responses
 - Average in duration: # of minutes — (30) average, 10 (min), 73 (max), out of 22 responses
 - d. How long is the **single longest** actual bus route for one child in your district, one-way?
 - Single longest in distance: # of miles—(32) average, 7 (min), 72 (max), out of 22 responses
 - Single longest in duration: # of minutes—(45) average, 15 (min), 97 (max), out of 22 responses
 - e. What is the percentage of students who walk to school in your district?
 - (12%) average, (70%) maximum, out of 48 responses
11. Place an X next to one of the following options concerning transportation. [Respondents marked more than one selection. The following figures are reported as the actual number of responses to that item, not percentages.]
- Our district runs its own program, including owning or leasing buses and hiring bus drivers. (1 district)
 - Our district subcontracts the program, using *private contractors* to transport students. (48 districts)
 - Our district subcontracts the program, using our intermediate unit to transport students. (3 districts)
 - Other. (1 district)
12. Under a consolidation with another district that did not involve school consolidations, would you expect to see the **length** of transportation routes increase, decrease, or stay the same? Place an X next to your answer. (Consider a hypothetical district consolidation)
- Increase (41.7%)
 - Decrease (2.1%)
 - Stay the same (56.3%)
 - 48 responses received
13. Under a consolidation with another district that did not involve school consolidations, would you expect to see the **cost** of transportation increase, decrease, or stay the same? Place an X next to your answer. (Consider a hypothetical district consolidation)
- Increase (25.5%)
 - Decrease (17.0%)
 - Stay the same (57.4%)
 - 47 responses received

14. Under a consolidation with another district *that includes school consolidation(s)*, would you expect to see the *length* of transportation routes increase, decrease, or stay the same? Place an X next to your answer. (Consider a hypothetical district consolidation.)
- Increase (75%)
 - Decrease (4.2%)
 - Stay the same (20.8%)
 - 48 responses received
15. Under a consolidation with another district *that includes school consolidation(s)*, would you expect to see the *cost* of transportation increase, decrease, or stay the same? Place an X next to your answer. (Consider a hypothetical district consolidation.)
- Increase (63.8%)
 - Decrease (19.1%)
 - Stay the same (17%)
 - 47 responses received

VIEWS ON CONSOLIDATION:

16. Would you be willing to consider a consolidation with any of the districts geographically adjoining your district?
- 46.8% answered yes
 - 53.2% answered no
 - 47 responses received
17. If a district consolidation were publicly considered in your school district, what are the reasons some people would have to **oppose** district consolidation?
18. If a district consolidation were publicly considered in your school district, what are the reasons some people would have to **support** district consolidation?

APPENDIX C

IU QUESTIONNAIRE & SUMMARY OF RESPONSES

In addition to the district questionnaire, a written survey was sent to the executive directors of the 16 intermediate units that serve the 88 school districts focused on in this study. Eight surveys were returned with responses. The following figures are reported as the actual number of responses to each question.

For items 1 – 4 that follow, please indicate the extent to which you agree or disagree with the written statement.

1. There are services that districts in our intermediate unit are providing individually that could be consolidated and offered by our intermediate unit to save money without consolidating districts.
 - 3 strongly agree
 - 3 somewhat agree
 - 1 somewhat disagrees
 - 0 strongly disagree

2. Our IU offers regional services or cooperative purchasing programs that smaller districts in our IU are unable to provide for themselves.
 - 6 strongly agree
 - 1 somewhat agrees
 - 0 somewhat disagree
 - 0 strongly disagree

3. The districts in our IU take full advantage of the resources and services our IU offers to help districts lower costs and improve the quality of service provided to students.
 - 1 strongly agrees
 - 3 somewhat agree
 - 3 somewhat disagree
 - 0 strongly disagree

If you answered somewhat disagree or strongly disagree, please name the specific services or programs offered by your IU that you think are underutilized by districts:

4. Consolidating all districts within our intermediate unit would enable the single, newly formed district that resulted to provide more services (such as extensive special-needs programs or after-school programs) than some of our small or economically disadvantaged districts could provide on their own.

- 0 strongly agree
- 2 somewhat agree
- 0 somewhat disagree
- 5 strongly disagree

5. Are there programmatic needs for districts that are not being met through existing regional services?

- 4 Yes
- 2 No

6. Does your intermediate unit provide any student transportation services for districts?

- 4 Yes
- 2 No

If yes, please identify them and describe the programmatic and/or financial benefits of those services.