

# **A Comprehensive Study on the Organization of Kansas School Districts**

**Prepared for  
The Kansas State Board of Education**

in response to  
RFP Number 00241

by

Augenblick & Myers, Inc.

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January 10, 2001



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Mr. Harold Voth, Chairman  
Kansas State Board of Education  
120 South East 10<sup>th</sup> Avenue  
Topeka, KS 66612-1182

Dear Chairman Voth:

Attached is the report prepared by Augenblick & Myers, Inc. (A&M) in regard to the organization of school districts in Kansas, which was completed under a contract with the Kansas State Board of Education. The report summarizes our findings and recommendations based on: (1) a statistical evaluation of enrollment, pupil performance, per pupil spending, and other data for school districts and schools; (2) a review of the relevant literature related to school district organization and school size; and (3) on-site visits and interviews with representatives of 64 school districts throughout the state. The report identifies three alternative approaches that could be taken to identify both school districts that might benefit from reorganization and the districts with which they might be merged and includes lists of "target" districts for reorganization, characteristics of their neighboring districts, and lists and maps displaying the proposed reconfigurations. The report also includes recommendations for possible statutory changes that might facilitate reorganization and suggests that the State Board of Education play an important role in the process in the future.

Our work was completed over a long period of time and we appreciate the patience of interested parties in waiting until the end of the process to review the entire study rather than requiring us to report progress in piecemeal fashion. Given the controversial nature of the issue, the need to obtain data that was not routinely available, and our evolving thoughts about how to proceed, we needed all the time that was given to us. We have tried to take a logical and orderly approach, one driven by both data and analysis *and* the realities of history, geography, and economics.

We want to thank several individuals who provided assistance to us during the last 15 months, including Mr. Rod Bieker, Mr. Dale Dennis, Ms. Tamara Milligan, and Mr. Veryl Peter of the Department of Education, and Mr. Ben Barrett, Ms. Mary Galligan, and Mr. Kenneth Hughes of the Legislative Research Council. These people provided tremendous amounts of background information, provided access to school district level pupil performance and fiscal data, undertook surveys of districts and schools to obtain additional data, advised us about statutory references to reorganization, and met with us on several occasions throughout the course of the work.

We also want to recognize the assistance we received from individuals at A&M whose names do not appear as authors of the study, including Ms. Anne Barkis, Dr. Michael Lacy, and Ms. Jennifer Sharp, who helped us in conducting interviews, summarizing the literature, resolving software issues, gathering background data, and preparing the final report.

The report expresses the views of the authors and none of the people named above are responsible for any of its findings or recommendations.

We hope that the State Board of Education is able to build on the study in order to help those school districts that know they need to reorganize and to push those who may resist such change to undertake a thorough process of review in order to better understand their options.

Sincerely,

  
John Augenblick

  
John L. Myers

  
Justin Silverstein

## EXECUTIVE SUMMARY

In October 1999, Augenblick & Myers, Inc. (A&M), a Denver-based consulting firm that works with state policy makers on education finance and governance issues, was selected by the Kansas State Board of Education to conduct a study of school district organization. The study was mandated by the Kansas Legislature in Section 10, 1999 Senate Bill 171.

A&M created an advisory panel for the study, consisting of Dr. Richard King of the University of Northern Colorado, Dr. Chris Piphon, formerly with the Education Commission of the States, Dr. Paul Nachitgal, former director of the Rural Challenge, and Mr. Terry Whitney, formerly with the National Conference of State Legislatures. We then undertook five key tasks.

1. We completed a review of the literature related to school district reorganization.
2. We developed two approaches to selecting "target" districts that might benefit from reorganization.
3. We conducted on-site visits and interviews with representatives of 64 school districts located throughout the state.
4. We developed three alternative ways to reorganize school districts.
5. We identified areas where statutory changes would be needed to implement our recommendations.

School districts are important governmental entities in this country. At the discretion of the states, most of them have been delegated the authority to levy taxes, incur bonded indebtedness, hire key employees, and set curriculum. Kansas, like the other states, determines how many school districts shall exist and where their boundaries shall be. Over time, the number of school districts has decreased dramatically from over 120,000 nationally, to fewer than 15,000, and from over 9,000 in Kansas, to 304. The importance of their boundaries has also diminished somewhat, particularly in states such as Kansas that have modified their school finance procedures so that the wealth of each district is far less critical in determining that district's total revenue and property tax rates. This is also true in states that have promoted open enrollment (so that pupils can enroll in schools in districts other than the one in which they reside). Kansas currently has 1.00% of the nation's pupils, 1.62% of the nation's schools, and 2.10% of the nation's school districts.

While the states have delegated certain powers to school districts, they maintain both a constitutional responsibility to provide adequate and equitable education services and an interest in assuring that pupils achieve certain education objectives. A state's economic and democratic future hinges on whether such objectives are met. Because

the state pays for a significant portion of educational services, it also has an interest in assuring that the cost of providing these services is reasonable. These days, a state's interest in elementary and secondary education primarily reflects its interest in pupil performance and per pupil spending. Little else justifies changing school district boundaries.

The literature about school district reorganization is rather thin, consisting mostly of economic studies of school and school district optimum size, and the arguments that are made for and against changing the numbers of school districts in a state. While the literature is less than definitive about school and school district size, there has long been the view that schools, particularly high schools, need to be large enough to provide an adequate array of academic services and extra-curricular activities. More recently, there are those who advise that schools be small enough to assure a safe, nurturing environment and that school districts are not so large that they become unmanageable. While technology facilitates the provision of broader opportunities in small, isolated schools, there is little evidence that it can fully substitute for the hands-on presence of well-trained adults. And while evidence exists that some graduates of small high schools go on to become very successful, that evidence tends to focus on very few people, much the same way large schools publicize a small number of pupils who become Merit Scholars.

A&M used two basic approaches to identify "target" school districts that might benefit from reorganization. The first approach focuses on districts with relatively low levels of pupil performance and relatively high levels of per pupil spending. We used a statistical technique, regression analysis, to predict both expected levels of pupil performance (based on combining 1998 composite reading, math, and writing scores for Kansas statewide achievement tests) and expected levels of per pupil spending (for instruction, administration, and plant maintenance and operation). Some people suggested that the use of the tests was inappropriate. Because our purpose was to focus only on some districts, the tests provide the only basis for evaluating the relative performance of school districts, and the information is already being used to hold districts accountable, we feel that it is appropriate to use them as the basis of identifying those school districts where state action might be required. While there are many other kinds of information that individual districts use to evaluate their own performance, none provide comparable information for all districts. We used per pupil spending as the basis for evaluating relative spending levels. Some people suggested that, since the state controls the level of spending of school districts, and no district exceeds the level specified by the state, it is logically impossible to identify high spending districts. Our feeling is that, given the variation in spending that exists, some districts may be spending more than necessary relative to the spending of other districts. The state's formula for distributing state aid may also permit higher spending than is necessary.

Using regression analysis allows us to see how pupil performance and per pupil spending are influenced by the proportion of pupils eligible for free and reduced price lunches and the wealth or enrollment level of a school district. The regression equations accounted for 73 percent of the variation in per pupil performance and 80

percent of the variation in per pupil spending. Given that those levels are high but not perfect, we established confidence intervals around predicted levels of performance and spending to be sure that appropriate districts were identified as being low in performance or high in spending. Based on our analysis, we identified 28 districts that had a combination of low pupil performance and high per pupil spending. They are listed below in three categories.

*Districts that have low pupil performance and high per pupil spending based on regression results: Moscow Public Schools (209), West Solomon Valley Public Schools (213), Elkhart (218), Washington Schools (222), Hanston (228), Nes Tre La Go (301), Belle Plaine (357), Chase-Raymond (401), Hillcrest Rural Schools (455), and Udall (463).*

*Districts with higher than expected per pupil spending and lower than average pupil performance for two years: Fowler (225), Triplains (275), Elk Valley (283), Cedar Vale (285), Herndon (317), Eastern Heights (324), Wathena (406), and Chetopa (505).*

*Districts with lower than expected pupil performance in 1998, lower than average performance in 1997, and per pupil spending above the predicted level excluding the use of the confidence interval: Turner-Kansas City (202), Bonner Springs (204), Mankato (278), Pleasanton (344), Oxford (358), Caldwell (360), Marysville (364), Madison-Virgil (386), Neodesha (461), and South Haven (509).*

The second approach to identify districts that might benefit from reorganization focuses on districts that are either too small or too large given what researchers and practitioners believe, to offer an appropriate curriculum, extra-curricular opportunities, and a safe, nurturing environment. This approach assumes that a high school should serve between 100 and 900, pupils and that a district should have an enrollment of at least 260 pupils per high school but no more than 2,925 pupils per high school in order to be at those levels. Looking at the total enrollment of school districts and the number of high schools they operate, we found 50 districts that are too small and 24 districts that are too large based on these guidelines. We also identified two districts as being so large that they might need to be reorganized by breaking them into smaller, more manageable districts. These 76 districts have been grouped into four categories and listed below.

*Districts that are too small with only one high school: Cheylin (103), White Rock (104), Moscow Public Schools (209), Northern Valley (212), West Solomon Valley Schools (213), Rolla (217), Ashland (220), North Central (221), Fowler (225), Hanston (228), West Smith County (238), Weskan (242), Palco (269), Triplains (275), Jewell (279), West Graham-Morland (280), Elk Valley (283), Cedar Vale (286), Grinnell Public Schools (291), Wheatland (292), Prairie Heights (295), Sylvan Grove (299), Nes Tre La Go (301), Smoky Hill (302), Bazine (304), Brewster (314), Golden Plains (316), Herndon (317), Eastern*

Heights (324), Logan (326), Burrton (369), Montezuma (371), Hamilton (390), Paradise (399), Chase-Raymond (401), Mullinville (424), Midway Schools (433), Hillcrest Public Schools (455), Healy Public Schools (468), Dexter (471), Haviland (474), Copeland (476), Pawnee Heights (496), Lewis (502), and Attica (511).

*Districts that are too small with more than one high school:* Barnes (223), Leroy-Gridley (245), Southern Cloud (334), Rural Vista (481), and Axtell (488).

*Districts that are too large relative to the number of high schools they operate:* Turner-Kansas City (202), Blue Valley (229), Olathe (233), Emporia (253), Derby (260), Haysville (261), Goddard (265), Maize (266), Salina (305), Hutchinson Public Schools (308), Seaman (345), Newton (373), Manhattan (383), Great Bend (428), Auburn Washburn (437), Dodge City (443), Leavenworth (453), Garden City (457), Geary County Schools (475), Liberal (480), Hays (489), Lawrence (497), and Kansas City (500).

*Districts that are too large:* Wichita (259) and Shawnee Mission Public Schools (512).

Some of the most important activities we undertook in this study were the on-site visits to a large number of school districts where we interviewed many district representatives. We did this not only because it was required by contract, but also to better understand the dynamics within the districts we identified as targets and in their neighboring districts, which might also be involved in reorganization. We used several criteria to select districts for on-site visits or interviews. First, every one of the 28 districts we identified using the first approach described above was placed on the list. Second, we selected some neighboring districts of those 28 target districts. Third, we obtained additional information about 90 school districts, including the age of their buildings and enrollment projections, and selected some districts based on those factors. Finally, we selected some districts based on being too large, using the second approach to identify target districts described above. In all, we had contact with 64 districts.

We learned a number of things from our on-site visits and interviews: (1) there is substantial resistance to consolidation because of historical, cultural and financial reasons; (2) there is support for state reorganization in extreme cases, where there are declining enrollments and high spending; (3) district officials justified and defended low student performance and high spending; and (4) technology, distance learning, building projects and innovative superintendents were considered essential for surviving consolidation.

Once the on-site visits and interviews were completed, we began to develop reorganization scenarios, ultimately creating three alternative approaches: (1) an approach based on pupil performance and per pupil spending; (2) an approach based on enrollment levels relative to number of high schools; and (3) an approach that took

into consideration both of the first two approaches and resolved differences between them based on a variety of practical considerations, including distance between schools, school capacity (which we obtained through a survey carried out by the Department of Education), and the information we obtained through the on-site visits and interviews.

Tables in the report show the characteristics of target school districts and their neighboring districts, as well as the mergers of districts associated with the three alternative approaches to reorganization. The figures below summarize the results of each approach for the entire state.

- (1) For the approach based on pupil performance and per pupil spending, we identified 28 target districts. We examined all neighbors of those districts for possible reorganization with target districts based on their pupil performance, their per pupil spending, and their distance from the target districts. We were unable to reorganize eight of the target districts using those criteria. We found 22 neighboring districts that could be merged with the 20 remaining target districts to create 20 new districts. The result is 282 districts statewide.
- (2) For the approach based on school district size, we identified 76 target districts. We examined all neighbor districts for the 74 districts that we felt had high schools that were either too small or too large based on enrollment relative to number of high schools, excess capacity of schools, and distance between schools. We were able to reconfigure 45 of the 50 districts with high schools that are too small by merging them with 29 neighbor districts and creating 34 new districts. We were able to reconfigure six of the 24 districts with high schools that are too large by merging them with seven neighbor districts and creating five new districts. In total, 51 target districts are merged with 36 neighbor districts to create 39 new districts and a total of 256 districts in the state. Some other approach would need to be taken to address the issue in 20 of the 26 districts with large high schools and in the two large districts.
- (3) For the combined approach, we were able to reconfigure 56 target districts with 36 neighboring districts to create 43 new districts and a total of 255 districts statewide. As with the second approach, we were unable to resolve concerns in 21 districts by reorganization, which would require other approaches to be taken.

In order to facilitate reorganizing school districts in Kansas, a number of changes need to be made to the state's statutes. A&M recommends that the legislature delegate to the State Board of Education the power to change school district boundaries more easily than is currently allowed. The State Board should consider boundary changes by using three processes to assess alternative: (1) Emergency dissolution, (2) Required boundary change planning, and (3) Review of boundary options. The emergency

dissolution is required for those districts that are less than 80 students in 2000, or less than 100 students in 2001 and have declining enrollment. Those districts are required to have a public hearing and report the results to the State Board. The State Board shall take action to accept the district report or implement one of their own. The required boundary change planning is for all of the other districts identified as part of the 28 original targets on Map 1 in this report. Districts would have three years to work on improvements or recommendations, than if they are still targets would follow the emergency dissolution process. The review of boundary options would be for all of the other districts identified as targets in this report. They would follow the same process as the required boundary change planning districts without the final requirement of dissolution.

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## Chapter I

### INTRODUCTION

In October 1999 Augenblick & Myers, Inc. (A&M) signed a contract with the Kansas State Board of Education to conduct an analysis of school district organization. The study was undertaken pursuant to Section 10 of 1999 Senate Bill No. 171, which mandated that a consultant be employed to gather and analyze information, conduct on-site visits in school districts, and develop a comprehensive plan for the organization of school districts so that the school system could operate efficiently and effectively. We spent the last 15 months studying school districts in Kansas in order to comply with the requirements of the State Board of Education and the Legislature. The purpose of this report is to describe our work, including the procedures we used to collect and evaluate information, the alternative approaches we developed to address some of the issues we identified, and the statutory changes that would need to be made in order to implement those approaches.

School districts play an important role in American society. Although the states have the constitutional responsibility of providing public elementary and secondary education, they have delegated the authority to manage the way education services are delivered to school districts, which they can create or dissolve as they see fit. School districts have specific powers, which vary from state to state, that range from levying taxes and incurring bonded indebtedness to hiring staff and setting curriculum. Over time, however, the roles of school districts have changed somewhat as states, including Kansas, have placed constraints on the ability of school districts to generate revenue and have permitted students to enroll in schools in districts other than the ones in which they reside.

Over the last 100 years, the number of school districts has decreased dramatically, from more than 120,000 to less than 15,000. This change reflects a variety of trends, including the creation of unified, K-12 districts, rather than elementary or high school districts, and the desire to have entities that provide a broad array of instructional and ancillary services in an efficient manner. As anyone knows who has even contemplated changing the way school districts are organized, the topic is a controversial one. The states have approached the organization of school districts in very different ways with some states having only a few and some making them co-terminal with counties while others have large numbers of districts that may be independent of any other government entities. School districts are symbols of localism and they play an important role in the economies of some communities. When change occurs, it tends to cause great consternation and, as we discovered working in Kansas, people remember those changes for a long time after they have taken place.

There are a variety of reasons for why a state might choose to change the way its school districts are organized. The state might decide that some schools or school districts are too small, or too large, to provide services efficiently. It might decide that

school districts should share their boundaries with other political jurisdictions, such as towns or counties, in order to strengthen the relationship between the way education services and other social services are provided. The state might decide that some of the boundary lines of school districts are so “odd” that they should be changed so that they are straight, or follow natural landmarks, or so they do not cross county lines. We have heard all of these, and other reasons, as possible justifications to reorganize school districts in Kansas. In fact, in 1998-99, Kansas enrolled 1.00 percent of the pupils in the nation but had 1.62 percent of the schools and 2.10 percent of the school districts in the United States.

In our view, the ultimate responsibility of the state is to assure that education services are provided effectively. Effectiveness could mean a lot of different things. It might mean that pupils, schools, or school districts are performing at a high level. It might mean that school districts are spending at a reasonable level, that schools are not so small or so large that they incur extremely high costs, and that school facilities are being utilized appropriately. And it might mean that school districts provide an appropriate array of services so that pupils are exposed to both a broad curriculum and appropriate extra-curricular activities. If a state found that education were not being provided effectively in certain school districts, the state would be justified in examining the situation carefully and possibly reorganizing school districts to produce the desired results. In fact, we believe that there are few other justifications for school reorganization.

Therefore, we viewed the purpose of our work as identifying situations in which education is not being provided effectively in Kansas — that is, pupil performance is relatively low while per pupil spending is relatively high or schools are smaller or larger than what practitioners believe to be appropriate — and determining whether school district reorganization could reasonably be expected to change the situation under circumstances where it would be practical.

We completed a variety of tasks in order to gather background information, obtain and analyze data, and organize findings and recommendations.

1. We created an advisory panel to review our progress. The panel included Dr. Richard King, professor of education administration at the University of Northern Colorado; Dr. Chris Pipho, former Senior Fellow at the Education Commission of the States; Dr. Paul Nachtagal, former National Director of the Rural Challenge; and Mr. Terry Whitney, former Senior Policy Specialist at the National Conference of State Legislatures.
2. We undertook a thorough review of the literature about school size and school district consolidation.
3. We conducted an analysis of pupil performance and per pupil spending in order to identify those districts that should be targets of state scrutiny due to lower than expected performance and higher than expected spending.

4. We identified other criteria, such as district size, change in enrollment, and age of buildings, that might serve as the basis of identifying other districts that could be the target of state scrutiny and that were used to select districts from which we needed to gather more data than were routinely available or that we wanted to contact.
5. We collected additional data, including enrollment projections and information about the condition of school buildings, from target districts and some of their neighbors.
6. We conducted on-site visits to some school districts and held meetings with representatives of other school districts and, in conjunction with those meetings, made presentations to every regional meeting of the Kansas School Boards Association in the Spring of 2000.
7. We worked with the Kansas Department of Education to collect data on the capacities of school buildings.
8. We obtained mapping software that allowed us to plot schools, school district boundaries, and county lines for Kansas. The software also made it possible for us to measure distances between any pairs of schools.
9. We conducted additional on-site visits in several school districts -- some with large high schools, one that we considered to be a very large district, and one with a group of districts that were all target districts in the same county.
10. We met with representatives of several state level education associations to discuss our progress.
11. We created three alternative approaches to reorganize school districts based on different ways of selecting target districts, reviewing data for neighbor districts, and taking into consideration some of the information we gathered from visits and meetings.

This report is organized as follows: Section II is the review of the literature. In Section III, we describe the various procedures we used to select target districts. Section IV discusses the on-site visits and interviews. In Section V, we present three alternative ways of reorganizing school districts. The statutory changes required to implement the recommendations are discussed in Section VI. A series of appendices present data for every school district in the state.



## **Chapter II**

### **SCHOOL DISTRICT BOUNDARIES: AN OVERVIEW**

This section of the report describes how school districts in the United States have evolved into governing bodies and why they have changed over time. In doing so, the report will offer a review of the research and current trends for reorganizing school districts.

#### **An Overview of the Literature**

This section offers a brief overview of the research literature on school district organization. This is not a literature review in the traditional sense. Most of the research concerning school districts is interwoven within (1) broad philosophical educational issues, (2) individual schools and what goes into them, (3) people's likes and dislikes for various approaches, (4) discussions of ideal class and school size, and (5) the finance and governance of schools. Instead, the primary focus of this section will be the organizational structures and optimal size of school districts. In doing so, we will highlight historical developments, influential research, authors, popular writings, case studies and the structural forces that have affected school districts.

#### **School Districts in Context**

A school district is one of four types of governmental entities that exists below the state government in the U.S. that provide general and specific services to people in a geographic region. It is not unusual for people to be served by overlapping government entities and jurisdictions simultaneously. In 1992, there were 3,043 counties and 35,962 municipalities, townships, or towns that provided general government services. At the same time, there were 33,131 special district governing bodies, focusing on the availability of higher education (through community colleges), recreation service, control of natural resources, fire protection and other services. 14,556 school districts oversaw education services for elementary and secondary schools (Bureau of the Census, 1993, Table 466).

#### **Historical Evolution of School Districts**

School districts have evolved as the public interest in education has expanded in the last 300 years. It is often expressed as a Jeffersonian ideal, that (state) government is primarily responsible for providing education for its citizens; however, in American colonies, education was primarily the function of the family or church. 18<sup>th</sup> Century education was characterized by enormous variation:

... there were individual teachers of reading, writing, ciphering, grammar, bookkeeping, surveying, navigation, fencing, dancing, music, modern languages, embroidery, and every conceivable combination of these and other subjects; teachers taught part time and full time, by day and by evening, in their homes, in other people's homes, in rented rooms, in churches and meetinghouses, in abandoned buildings, and in buildings erected especially for their use; (teachers) were self-employed and employed by others (acting as individuals or through self-constituted, self-perpetuating, or elected boards; and they were paid with funds obtained from employers, patrons, subscriptions, lotteries, endowments, tuition rates, and taxes (Cremin, 1970, pp. 499-500).

As early as 1642, a Massachusetts statute required towns to make "some provisions for giving the rudiments of learning to those children who did not get them at home" (Beard, 1944, p. 64). In 1692, the Massachusetts general court required that all towns of 100 families or more have a grammar school; and a few years later, the court required a full-time instructor (Cremin, 1970, p. 524).

As the country expanded, conflicts arose between towns and families that demanded access to schools in the precincts and wards where they lived. Cremin (1970) observes:

such disputes were indicative of the extent to which the school was looked upon as integral to an orderly community, and the right to maintain one essential to community integrity. Indeed, petitions to the general court for the right to form new towns often based their appeal on the need for better services (p. 525).

Education developed differently in different regions of the country, reflecting their particular economic, social, geographic, and fiscal characteristics. What worked in New England communities, for example, did not work on the plantations in the South. As states were established, they wrote their own constitutions specifically mentioning education, even though the U.S. Constitution did not mention education.<sup>1</sup> Although some state constitutions were more explicit than others (about the expectations for public education), most required that their state provide "thorough," "uniform," "efficient," or "free" education services.

State legislatures eventually delegated their authority and constitutional responsibility to school districts, which governed, and in some cases, maintained the fiscal responsibility for public schools (e.g., eleven states refer to local school boards in their constitutions; see Education Commission of the States, June 1999). Many school districts were established coterminous with counties and municipalities, while others were created with a different set of boundaries. Some school districts were "independent," with the authority to collect tax revenues, while others were "dependent," or fiscally controlled by some government entity. The states eventually replaced the

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<sup>1</sup> Although the Northwest Ordinance of 1787 declared that "schools and the means of education shall forever be encouraged." The ordinance required that a section of land in every township be devoted to the support of schools.

laws permitting states, cities, counties and towns to levy taxes for schools (with voter approval), with state and local boards of education that were required to provide free and compulsory education, at least at the elementary level (Beard, 1944, p. 219). By the middle of the 19<sup>th</sup> Century, educational governance was in the hands of locally elected boards, which established curriculum, hired employment staff, selected textbooks, located physical space, and granted diplomas to graduates.

In the 20<sup>th</sup> Century, the modern model for resolving complex and political education issues, such as who should be educated, how education should be organized, and who should pay for it (particularly in urban high schools) is the “incipient bureaucracy” model, says Michael Katz (1971). Bureaucracies emerged as a way of providing a consistent set of services by qualified experts to pupils at a low cost. As school boards decreased, ward and precincts were abolished, the reliance on “experts” increased, and the role of state departments of education grew, particularly in terms of professional certification (Education Commission of the States, Nov. 1999, pp. 9-11). In sum, school districts emerged as a way of providing educational services that were conveniently located near pupils (in elementary schools), thereby fulfilling state constitutional requirements.

### **District Consolidation**

The number of school districts has decreased sharply in the last century. Since the beginning of the 1900's, the number of school districts, nationwide, has declined by 87 percent from 117,108 school districts to 15,367 in 1992 (Walberg, 1993).<sup>2</sup>

As of the United States, Kansas has decreased dramatically its number of school districts. In 1896 Kansas had 9,284 school districts (Kansas Biennial Report, 1964); by 1966-67, this number of school districts had dropped to 348. There are 304 school districts in Kansas presently.

### **The Case for Large School Districts**

The decline in the number of school districts can be explained by a major ideological shift in the U.S. after World War II, toward industrialized, economically efficient, highly productive organizations. Hence, corporations served as models for school reorganization and consolidation, with a decidedly bureaucratic bent (Education Commission of the States, Jan. 1999). The proponents of the rapid consolidation movement argued that large schools could use their resources more efficiently and achieve “economies of scale,” a theory that focuses on the increased savings through reduced redundancy and increased resource strength as schools and school districts get bigger (e.g., one large school can operate more cheaply and efficiently than two smaller ones). Economies of scale were further applied to the cost of “producing” a given level of student achievement. The logic was that savings would accrue as costs were spread over a larger pupil base. These savings could then be applied toward

developing a more comprehensive and specialized programs of instruction, with greater quality, for more students with differing interests and abilities.

Early research supported the idea that larger school districts could operate more efficiently than small districts. One of the leading proponents of larger schools and economies of scale theory was former Harvard President James Bryant Conant. In his influential 1959 book (financed by the Carnegie Corporation of New York in 1957), *The American High School Today*, Conant indicated that larger high schools (those over 750 students) were more efficient and could offer a more comprehensive curriculum of greater quality and lower cost than smaller schools. Larger schools could afford more specialized teachers, counselors, classes and activities. Students attending large schools could benefit from increased course offerings and participate more in extracurricular activities. Thus, Conant called for the elimination of high schools having fewer than 100 students in the graduating class (Sher, 1986, p. 29), favoring larger units for "comprehensive" schools. Conant's conclusions reinforced a 1948 study by the National Commission on School District Reorganization, which favored large school districts because small school districts had difficulty attracting and retaining qualified teachers (Hughes and Bass, 1994, p. 9).

From the beginning of the century to the early 1960s, research supporting large schools and districts (and the economies of scale theory) dominated the education research and popular writings. This research focuses on educational "inputs" (e.g., the number of teachers, professional staff, salary levels, availability and materials). Since the 1960s, support for the economy of scale theory would lead policymakers and educators to favor the rapid consolidation movement.

### **The Case for Small School Districts**

By 1964, the rapid consolidation movement was challenged by an insurgent movement for smaller schools and smaller school districts. In *Big School, Small School: High School Size and Student Behavior*, published in 1964, Barker and Gump found that only a few students actively participated activities in large schools; by contrast, students in small schools engaged in extracurricular activities in a greater proportion (see Swenson & King, 1997 p. 367). Although large schools offered more varieties of subjects, Baker and Gump found that pupils in large schools took fewer electives proportionally than students in smaller schools. Barker and Gump were not explicit as to the ideal size of a given school, but their book began challenging the conventional wisdom and popular ideology of the time, that "bigger is better." Specifically, they challenged the economies of scale theory, and placed more emphasis on the "outputs" of school districts, such as student achievement, participation and social relationships. After conducting a nationally comprehensive study, in *A Place Called School* (1964), Goodlad concluded that it is not impossible to have a good large school, but it is difficult; the burden of proof on large schools is to show what curricular benefits they have that small schools do not.

Barker and Gump's analysis spawned a growing reform movement for smaller schools, which has gained support presently in research and popular writings. The small schools literature began with large-scale qualitative studies in the 1980s and 1990s, reinforcing a number of literature syntheses and reviews establishing the effectiveness of small schools. These studies built an "impressive case for "smallness"(Raywid, 1996). In their reviews of the literature, Raywid (1997) and Cotton (1996) found smaller schools to be more personal, equitable, participatory, "community-oriented" (see Nachitgal, 1992), safer, and conducive to student learning. By contrast, Klonsky (1995) and Raywid (1995) found that large schools have lower grade averages, lower test scores, higher dropout rates, and more problems with violence.<sup>2</sup> In his review of the literature, Klonsky (1998) found a compelling body of research showing that female, minority (especially, African American and Latino students), low socioeconomic, and special needs students benefit from smaller school units (charters, minischools, houses) than larger ones.

### **The Small Schools Critique and The Diseconomies of Scale**

Small school reformers typically cast their arguments in "big" versus "small" schools, but almost always ignore or diminish the costs of maintaining small schools and districts. Further, they fail to address the central question: when is a school or district too small to produce effective student learning. Lee and Smith (1997) warn that the ideological shift toward "smallness" is proceeding without research to support it, which might result in a number of schools (and school districts) that are too small to produce effective student learning, particularly for minority and disadvantaged students.

As for cost, most proponents of small schools acknowledge that spending increases per pupil in small school districts, at least initially. However, they argue that spending should not be based on per pupil spending, but on the number of graduating students, which they argue is higher than large school districts.

In addition, they argue that empirical evidence supporting the economies of scale theory is weak. The savings projected by the school consolidation movement has not materialized because large schools often expand their administrative staff to manage bureaucratic needs and transportation costs (particularly in rural areas), thereby offsetting savings (Chambers, 1981). When states give more funding to schools, they also increase the regulations and legislation, resulting in a bureaucratic system of education complete with inefficiencies (Walberg, 1993, p. 123). Walberg refers to this condition as "diseconomies of scale," which occur when the per unit costs increase as a greater number of units are served. Like Walberg, Coleman and LaRocque (1984) argue that it is not clear that the economies of scale theory applies to school districts (in British Columbia) because the administrative costs are a relatively small portion of a district's overall costs (p. 22). Moreover, the relationship between district size and the

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<sup>2</sup> Raywid (2000) and other scholars have suggested that the large "alienating" size of Columbine High School, over 1600 students, might well have been a factor in the school shooting tragedy.

resource availability is inconsistent across socioeconomic communities (Friedkin & Neocochea, 1988). Although districts in low income areas have access to more resources than smaller school districts, critics point out that in such populations there is a higher incidence of "exceptional problems" that contribute to lower achievement (Lee & Smith, 1997, p. 207).

An additional body of literature argues that bigger districts lead to bureaucracies, which negatively impact student performance. In his review of student test scores among states, Walberg (1993) found that higher achieving states have smaller districts, smaller schools, and smaller state shares of school costs (p. 115). Carnoy and MacDonnell (1990) found that large organizational structures limit local control for teachers and principals to make decisions to improve student performance.

### **Sher's Critique of Large District Size**

In spite of the rapid consolidations throughout the 1900s, there was little evidence that school districts actually operate more efficiently presently (Management Analysis and Planning Associates, 1996, p. 21). Yet a 1986 report by the North Carolina Department of Public Instruction sparked criticism after it recommended that states consolidate, so that there was no more than one school per district per county, and all districts had at least 5,000 students (Sher, 1986, p. 8).

In response to the North Carolina recommendations, in 1986 researcher Jonathan Sher examined student achievement in large and small districts, specifically analyzing the student performance data (SAT, ACT, and graduation rates) that was available at the time nationwide. (Today the flaws in using these indicators of student performance are well known.) Students' scores on the SAT were compared among states. The study found that on average, states that had districts smaller than 5,000 students scored higher on the tests than states with larger districts (Sher, 1986 p. 21). States that ranked in the top ten percent on SAT scores, were in the top ten percent of per pupil expenditures (ibid.).

Sher's study also examined how students in comparative states performed on the ACT. The study found that four of the five states whose students scored the highest on the ACT had districts averaging less than 2,000 pupils, and none had an average school district size above 3,000 (Sher, 1986, p. 22). Conversely, the average district size of states whose students performed poorly on the ACT were five times greater than that of the top-ranked states (ibid.).

Sher also compared graduation rates among states. States that had the highest graduation rates had far smaller schools and school districts than states that had the lowest graduation rates (Sher, 1986, p. 23). Sher cautioned that these results did not prove that having small, sub-county school districts produced better student learning. But Sher's evidence directly challenged the validity of the North Carolina Department of Public Instruction's recommendation that school districts having at least 5,000 students

were necessary to achieve the best student outcomes (Sher, 1986, p. 24).

In another study, Sher also compared student performance among large and small districts in Nebraska. This study similarly found that on average, larger districts had higher dropout rates than smaller districts (Sher, 1988, p. 22). The ACT scores were also higher in small districts than in large districts (Sher, 1988, p. 24).

A study of student performance among school districts in Colorado found similar results. Student average test scores on the Iowa Test of Basic Skills in smaller districts outperformed those in larger districts, with the difference even more pronounced the higher the grade levels (Colorado Department of Education, 1995, p. 9). Furthermore, in 1994, the Colorado graduation rate for the 25 smallest school districts was 95.1 percent, while the graduation rate for the entire state was 78.8 percent (Colorado Department of Education, 1995, p. 10). Thus, students in smaller school districts are performing better and graduating at a higher rate than those in larger school districts in Colorado.

### **Optimal Size**

Rather than defining an ideal size for schools and districts (often degenerating into debates between large versus small, or specialization versus dehumanization), recently researchers have attempted to define the optimal school district size. Optimal school size has been an enduring issue for educational policy, and meaningful and influential distinctions for policymakers (See Lee & Smith, 1997, p. 219). Optimal school district size refers to (1) how the school district size produces optimum economic efficiency (an economic criteria, or inputs) and (2) how the size of the district affects student performance and the equity of student learning (a sociological criteria, or outputs).

Researchers have attempted to define the optimal school district size, but the numbers vary widely. For example, studies have recommended districts as large as 50,000 pupils while others have targeted districts as low as 500 (Monk and Kadamus, 1995, p. 30). Some argue that districts and schools could never be too small; good school districts come in all kinds and sizes (Sher, 1988, p. 25); or, it depends on the situation and circumstances. Such ambivalence led some researchers to conclude that there is no optimal school district size.

### **Monk's Test for District Consolidation**

In determining whether school districts should be consolidated, Monk (1992) describes the indicators of a quality of education offered by a school or a district. These factors include: learning outcome indicators (i.e., standardized tests given to students to measure their abilities) and schooling process indicators, i.e., measuring inputs such as teacher experience, training, class size, and courses offered (Monk, 1992, p. 39). These

factors can be used to examine and evaluate how well a district is doing, and whether consolidation is necessary. As for economies of scale, like Conant, Monk argues that larger districts and schools are less expensive to operate and offer more courses for student learning. For Monk, however, size alone does not determine the quality of courses offered (Monk, 1992, p. 41).

Monk and Kadamus (1995) outline conditions or indicators that a district may not be performing at the desired level. These conditions include: a district is spending more than is necessary to achieve a given result (that is, higher test scores), a district is producing the “wrong” mix of results; a district is producing results at the “wrong” level. According to Monk and Kadamus (1995), states must define a set of indicators that can identify districts with these types of productivity problems. States must also establish benchmarks so that judgments can be made about the educational outcomes that are observed (Monk and Kadamus, 1995, p. 34).

In addition to Monk’s test, the literature on optimal school size may provide additional guidelines in determining optimal school district size, although the relationships of school and district size are often confused, particularly for high schools (many districts operate as a single high school).

A widely held assumption is that elementary schools should be smaller than middle and high schools because elementary schools provide intimate relations and supportive environments for young children. (High school students desire more course offerings.) Based on a review of 103 studies, Cotton (1996) found the optimal size for an elementary school is between 300 and 400 students.

The research focusing on optimal school size for middle schools is in its infancy; but a 1992 survey of middle school principals reported that the optimal school size for middle schools is 400 to 599 students.

After analyzing the NELS data base of 9,812 students, (8<sup>th</sup> through 12<sup>th</sup> graders), Lee and Smith (1997) found that schools were most effective for student learning and equitable learning (across differing socioeconomic levels and concentration of minority students) when they enroll between 600 and 900 students. Importantly, in schools smaller than 600, students learn less. This is an important finding because, the authors conclude, there are schools too small to produce effective student learning.

Similarly, *Turning Points*, an influential report on school reform, written in 1989 by Carnegie Foundation, as well as the National Association of Secondary School Principals recommended that high schools enroll no more than 600 students. The ideal high school of 600 students seems to be a very popular recommendation, but close scrutiny of these readings reveals little empirical report for these recommendations.

## **The Current Environment**

Today schools are under more pressure to improve against a backdrop of funding. Improvement is expected regardless of whether funding keeps up with inflation. This places the future of school districts in question.

First, most of the school improvement literature points to the importance of schools, their expectations and how they use their resources, as critical elements — almost nothing has emerged in research that focuses on school district level leadership or management that is associated with helping pupils perform at higher levels; states are already organizing pupil performance information by school site.

Second, much of the discussion about how to improve school funding suggests that whatever authority school districts currently have over the amount of resources available to them is likely to diminish as states take more control over gross taxing and spending decisions; there is talk in some quarters of states distributing most, if not all, state aid directly to schools, bypassing districts.

Third, while school districts may be given more control over how they spend their resources, policymakers toward placing spending decisions in the hands of schools, principals and teachers. In this scenario, school board spending would be relegated to administration, plant maintenance and operation, or ancillary services including personnel, accounting, and food services. School districts might even be forced to compete with other districts to provide such services. Moreover, the expansion of smaller educational units (charter schools, schools-within-schools, minischools, and others), and possible school vouchers (even if only in urban districts) may further reduce school district authority.

School districts are unlikely to disappear. However, as this overview of school boards suggests, the role and function of school districts will change. They may look more like current multi-district cooperative service boards in the future, providing technical assistance, comparative information, and administrative services done more efficiently by a central agency.



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## **Chapter III**

# **ALTERNATIVE PROCEDURES FOR IDENTIFYING DISTRICTS THAT MIGHT BENEFIT FROM REORGANIZATION**

### **Introduction**

Based on our view of the state's role in establishing school districts, and our review of the literature about school district organization, we feel that the most appropriate rationale for state action must be based on three factors: (1) the level of pupil performance, in which the state is explicitly interested, because it is the foundation of democratic government and the state's economic development; (2) the level of per pupil spending, in which the state has an interest because it provides state aid that accounts for a significant portion of those expenditures; and (3) the ability of school districts to provide an appropriate curriculum and ancillary activities, in which the state has an interest primarily because of the nexus with pupil performance.

We developed two primary approaches to identify school districts in Kansas that should be reorganized. The first approach is based specifically on analysis of both pupil performance and per pupil spending and is designed to identify districts that are relatively low in performance and relatively high in spending. The second approach is based on the relationship between the size of schools and districts and the ability of districts to provide services when they are either too small or too large.

### **Identifying Target Districts Based on Pupil Performance and Per Pupil Spending**

The first approach is designed to focus attention on a set of "target" districts in which performance is relatively low and spending is relatively high. In order to examine relative performance, we use the results of the statewide tests that have been developed in the past few years even though several people told us that their understanding was that those tests were not developed for the specific purpose of comparing one district to another. Our feeling is that, since the tests provide the only basis of evaluating the relative performance of school districts, the information is already being used to hold districts accountable (given that results are published), and because our purpose is to focus only on some districts, it is appropriate to use them as the basis for identifying those places where state action is required. While there are many other kinds of information that individual districts use to evaluate their own performance, none provide comparable information for all districts. We used per pupil spending for instruction, administration, and plant maintenance and operation (M&O) as the basis of evaluating relative spending levels even though some people suggested that since the state controlled their level of spending, and no district exceeds the level specified by the state, it is logically impossible to identify high spending districts. Our feeling is that, given the variation in spending that exists, some districts may be spending more than they need to relative to the spending of other districts and/or the

state's formula for distributing state aid may permit higher spending than is necessary.

### ***Pupil Performance***

We were able to obtain average pupil performance data for 1997 and 1998 for all 304 school districts in Kansas -- data were for the composite reading index, the math power composite, and the writing composite. We combined the average scores for each district into a single score by transforming district average raw scores for each test into "standard" scores (sometimes called "z-scores"), which indicate how many standard deviations the district average raw score is from the statewide average score for a particular test. The use of standard scores allowed us to add the scores of the three tests together despite the fact that the raw scores use different scales for measurement (the assumption in adding the standard scores together is that each test is valued equally). These scores generally range from -4.0 to +4.0; a district with the statewide average score on all three tests would have a standard score of 0.0; if a district had an unusually high or low average score for all three tests, the combined standard score could be lower than -4.0 or higher than +4.0.

We found some variation across all school districts in raw scores and standard scores, which are shown in Table III-1 (where they are district weighted) and Table III-2 (where they are pupil weighted). We show figures weighted in two different ways, by district or by pupils, because it can make a difference and because there are reasonable justifications for looking at the data using either approach to weighting. We tend to favor the pupil-weighted approach, meaning each pupil is weighted equally. Looking at Table III-2, where scores have been weighted by enrollment, it is clear that there was not much variation across districts in composite scores: two thirds of all pupils were enrolled in districts where reading scores varied from 59.8 to 68.6, where math scores varied from 45.1 to 56.3, and where writing scores varied from 3.22 to 3.60.

To better understand the relationship between pupil performance and district characteristics, we created five groups of districts, called quintiles, based on pupil performance, which are shown in Table III-3 (where quintiles have similar numbers of districts) and Table III-4 (where quintiles have similar numbers of pupils). Looking at quintiles with similar numbers of pupils (Table III-4), there were 27 districts, enrolling 87,113 pupils, in the lowest performance quintile (where the combined standard ["z"] scores were less than -2.50) while there were 43 districts, enrolling 89,133 pupils, in the highest performing quintile (where the combined standard ["z"] scores were greater than +2.58). The average performance of each quintile is shown in row (8), rising from -3.716 in the lowest performing quintile to +3.531 in the highest performing. In general, higher performance was associated with higher total spending [see row (1)] and with higher spending for instruction [see row (2)]. There was no obvious relationship between pupil performance and either spending for administration [see row (3), where spending varied across the quintiles but not in a systematic way] or spending for plant M&O [see row (4), where spending was about the same across the quintiles].

Quintiles that had higher combined standard scores had higher raw scores for all three composites [see rows (5), (6), and (7)] and higher standard ("z") scores for all three composites [see rows (9), (10), and (11)]. While higher performing districts tended to have lower proportions of pupils from low-income families [see row (16)], there was no clear relationship between performance and district wealth (although the highest performing districts had greater wealth than the lowest performing districts). There was also no relationship between performance and local tax effort (which was highest in both the lowest and highest performing quintiles) or school district size (where the highest and lowest performing districts were larger than those with middle levels of performance). Size of attendance center also showed no strong correlation to performance (where the lowest and highest performing districts had slightly larger attendance centers than districts performing in the middle range).

There are three major approaches that could be taken to identify districts that have low performance: (1) an approach based on absolute levels of performance, in which districts that are low performing do not meet a particular standard; (2) an approach based on the change in performance over time, in which districts that are low performing are those that do not improve their level of performance at a specified rate; and (3) an approach that compares actual performance to expected performance, in which low performing districts are those whose actual performance is lower than expected performance. We used the third approach because a large proportion of the variation in performance across school districts tends to be explained by the demographic characteristics of pupils, which can be controlled by comparing actual to predicted levels of performance.

In order to implement the third approach, we developed a prediction model for performance (using the combined standard ["z"] scores for the three composite indicators) based on a statistical technique, linear regression, that is designed to identify those factors that predict performance and explain the variation in performance across all districts.

The regression equation: (1) explained about 73 percent of the variation in performance across all school districts; (2) suggested that the strongest predictor of performance was the proportion of pupils from low-income families; (3) indicated that density, tax effort, wealth and the proportion of pupils from low-income families were negatively related to spending (that is, districts with higher density, higher tax effort, higher wealth and higher proportions of pupils from low-income families had lower performance); and (4) resulted in the following equation to predict performance:

$$\begin{aligned} \text{combined standard ("z") performance on reading, math, and writing tests.} &= -9.122 - (12.895 \times \text{percentage of pupils eligible for free/reduced lunch}) - (.0289 \times \text{density}) - (42.113 \times \text{tax effort [mills]}) \\ &\quad - (.00000269 \times \text{assessed value per pupil}) \\ &\quad + (.985 \times \text{natural log of enrollment}) \\ &\quad + (.00204 \times \text{per pupil spending for instruction}). \end{aligned}$$

When this equation is used to predict the actual pupil performance of districts, there is a standard error across all districts of 1.367 per pupil. Because this error exists (and differs for each district), we created a range of pupil performance for each district within which we could be 90 percent confident that the predicted performance was correct. We then compared each district's actual performance to the low end of this range and identified districts with actual performance below the low end as having unusually low performance. We found 36 districts that had unusually low performance, relative to what would have been expected, given their circumstances, in 1998-99.

### ***Per Pupil Spending***

We were able to obtain per pupil spending data for 1998-99 for all school districts in Kansas, which was disaggregated for several functions. We chose to examine: (1) instruction; (2) plant maintenance and operation (M&O); (3) administration (school and district combined); and (4) transportation. We chose to exclude transportation in our analysis since, in our view, spending for that purpose alone should not serve as the primary basis of changing school district boundaries.

We found some variation across all school districts in their per pupil spending for the three spending functions, as shown in Tables III-1 and III-2. Using pupil-weighted data (Table III-2), in 1998-99 school districts in Kansas spent \$3,162 per pupil, on average, for instruction, with two-thirds of all pupils enrolled in districts that spent between \$2,713 and \$3,611 for that purpose. On average, school districts spent \$568 per pupil for administration and two-thirds of all pupils were enrolled in districts spending between \$343 and \$793 for administration. Finally, districts spent \$646 per pupil, on average, for plant M&O — two thirds of all pupils attended schools in districts that spent between \$486 and \$806 per pupil.

When the three functions are combined, districts spent an average of \$4,376 per pupil, although the range in spending was from \$3,504 to \$10,928. In order to identify districts that spend at unusually high levels we had two choices: (1) we could simply inspect per pupil spending and identify high spending as being above a specified amount or (2) we could develop a predictive model designed to take into consideration those factors, such as district enrollment, that might legitimately explain spending differences. Since many studies of school district spending suggest that different school districts spend at different levels because they face cost pressures beyond their control, we used the second approach since it is designed to control for those factors. The factors that might influence spending level decisions include such things as: (1) district wealth as indicated by property value per pupil; (2) district tax effort; (3) district enrollment level; (4) the proportion of pupils from low income families; and (5) the average size of each attendance center. The figures in Tables III-1 and III-2 indicate the statewide average values for these factors as well as statistics about their distribution across all districts. Looking at Table III-2, where figures are weighted for

pupil enrollment, the figures indicate that statewide average property value per pupil was \$41,988, although the range was from \$612 per pupil to \$537,214. Average tax effort (imputed by dividing local revenue by property wealth) was 34.5 mills and two-thirds of all pupils were enrolled in districts in which tax effort was between 28.1 and 40.9 mills. Average district enrollment was 1,477 pupils (although enrollments ranged from 76 to 44,925 pupils) while the average size of attendance centers was 387 pupils (although the range was from 38 to 816 pupils). The proportion of pupils from low-income families (measured by the percentage of pupils eligible for free lunches) was 24.2 percent on average; two thirds of all pupils attended schools in districts with between 9.1 and 39.3 percent of all pupils coming from low income families.

In order to understand the relationships between spending, pupil performance, and these factors, we organized districts into five groups, or quintiles, with different levels of spending, as shown in Table III-5 (district weighted) and Table III-6 (pupil weighted). Focusing on spending quintiles (and looking at quintiles with similar numbers of pupils, as shown in Table III-6) there were nine districts, enrolling 91,399 pupils, in the lowest spending quintile (with those districts with spending below \$3,757 per pupil) while there were 198 districts, enrolling 89,712 pupils, in the highest spending quintile (with districts spending more than \$4,931 per pupil). The average spending of each quintile is shown in row (1), rising from \$3,695 in the lowest spending quintile to \$5,572 in the highest spending quintile.

In general, higher total spending was associated with higher spending for the three spending components (instruction, administration, and plant M&O) -- but that was not always true. Despite an almost \$300 per pupil difference in spending for instruction between the second to lowest spending quintile and the middle spending quintile, there was almost no difference in spending for administration between the two quintiles [see row (3)] and spending for plant M&O was actually lower in the higher spending quintile [see row (4)]. While higher spending districts tend to have higher test scores than lower spending districts, the relationship is not strong because the highest test scores were in the middle spending quintile. Higher spending districts also tend to have higher property wealth [see row (12)]; but tax effort was similar across all spending groups [except for the highest spending, wealthiest quintile — see row (13)]. Higher spending districts tended to be smaller than lower spending districts [see row (14)] but the average size of attendance centers was similar across all spending quintiles other than the highest group, where they were smaller [see row (15)]. Finally, spending tended to be higher in districts that had lower proportions of pupils from low-income families [see row (16)].

In order to develop a prediction model for spending (the sum of instruction, administration, and plant M&O), we used a statistical procedure, linear regression, to determine the mathematical relationship between spending and wealth, effort, enrollment level of districts and attendance centers, and proportion of pupils from low-income families. Since some of the factors had a curvilinear (curved) relationship with spending, rather than a linear (straight line) relationship, we used a logarithmic transformation (natural log) for several factors (enrollment level, proportion of pupils

from low-income families, and average size of attendance centers). We also eliminated the district [Fort Leavenworth (207)] with the lowest wealth (\$612 per pupil) since it was so different from all other districts.

The regression equation: (1) explained about 80 percent of the variation in spending across the 303 school districts; (2) suggested that the strongest predictor of spending was the average size of attendance centers; (3) indicated that enrollment level, the proportion of pupils from low income families, and the average size of attendance centers were negatively related to spending (that is, smaller school districts, small attendance centers, and low proportions of pupils from low income families increased spending); and (4) resulted in the following equation to predict spending:

$$\begin{aligned} \text{per pupil spending for} & & = & & \$10,079 - (969.02 \times \text{natural log of size} \\ \text{instruction, plant M\&O,} & & & & \text{of attendance center)} - (181.44 \times \text{natural} \\ \text{and administration.} & & & & \text{log of enrollment)} - (216.44 \times \text{natural} \\ & & & & \text{log of proportion of pupils from low income} \\ & & & & \text{families)} + (27,813.33 \times \text{tax effort [mills]}) \\ & & & & + (.00404 \times \text{assessed value per pupil}). \end{aligned}$$

When this equation is used to predict the actual spending level of districts, there is a standard error across all districts of \$325 per pupil. Because this error exists (and differs for each district), we created a range of spending for each district within which we could be 95 percent confident that the predicted spending was correct. We then compared each district's actual spending to the high end of this range and identified districts with actual spending in excess of the high end as having unusually high spending. We found 41 districts that had unusually high spending, relative to the spending level expected given their circumstances, in 1998-99.

### **Selecting "Target" Districts**

We developed a variety of approaches for using the results of the regression analyses of both pupil performance and per pupil spending to identify target school districts that might be reorganized. First, we wanted to find districts that have low performance relative to what might be expected and that spend at a high level compared to what might be expected. As discussed above, 36 districts had lower than expected pupil performance while 41 districts had higher than expected per pupil spending. Of these 77 districts, 10 districts had *both* higher levels of spending and lower levels of performance than would have been expected given their circumstances (using the confidence intervals associated with the regressions). These ten districts, which we refer to as Type "A" districts, are: Moscow Public Schools (209), West Solomon Valley Schools (213), Elkhart (218), Washington Schools (222), Hanston (228), Nes Tre La Go (301), Belle Plaine (357), Chase-Raymond (401), Hillcrest Rural Schools (455), and Udall (463).

In addition, there are districts that have higher than expected levels of spending *and* performance that has been lower than average for *two* years. These eight districts, which we refer to as Type "B" districts, are: Fowler (225), Triplains (275), Elk Valley (283), Cedar Vale (285), Herndon (317), Eastern Heights (324), Wathena (406), and Chetopa (505).

Finally, there are districts that had lower than expected performance in 1998, lower than average performance in 1997, *and* spending levels above the predicted level excluding the use of the confidence interval. These 10 districts, which we refer to as Type "C" districts, are: Turner-Kansas City (202), Bonner Springs (204), Mankato (278), Pleasanton (344), Oxford (358), Caldwell (360), Marysville (364), Madison-Virgil (386), Neodesha (461), and South Haven (509).

The data shown in Table III-7 compares the spending, pupil performance, and other information that has been discussed in this section for the three groups of districts separately, for the 276 districts not included in any of the three groups, and for all 304 districts.

### **Identifying Districts Based on Size of School**

A second way to think about school districts that might benefit from reorganization is based on schools being "too small" or "too large." As has been discussed in the literature review, education researchers and practitioners have studied the optimum size of schools, the minimum size of schools, and the maximum size of schools based on the ability of schools to offer what is believed to be an appropriate curriculum, opportunities for extra-curricular activities, and a nurturing, safe environment — all at reasonable cost. While the literature provides no universally accepted guidance, it suggests that a high school should serve at least 100 pupils in order to meet academic and social expectations. It also suggests that the maximum size of high schools should be no greater than 900 pupils.<sup>1</sup> While there are people who might disagree with these figures, and there are plenty of examples of both successful high schools with enrollments below 100 pupils or more than 900 pupils and of unsuccessful high schools with enrollments between 100 and 900 pupils, many people find these levels to be reasonable guidelines.

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<sup>1</sup>In 1997-98, there were 89,500 public schools in the United States, the average enrollment of which was 525 pupils (the average size of elementary schools was 478 pupils while the average size of secondary schools was 699 pupils and the average size of combined elementary- secondary schools was 374 pupils). Of those schools, about 8,800 had an enrollment of less than 100 pupils and 15,100 had an enrollment greater than 800 pupils (with about 8,600 having more than 1,000 pupils) according to the National Center for Education Statistics of the U.S. Department of Education.

### **Selecting "Target" Districts**

What we wanted to do was to examine current enrollments in Kansas and, where we saw schools that were either too small or too large based on the enrollment criteria to see whether it might be possible to reorganize districts so that schools would meet the criteria. Since our focus is on school district organization, we decided to identify districts that might be considered too small or too large. To do this, we assumed that, for any district to support a high school of at least 100 pupils, it must have an enrollment of at least 260 pupils per high school (so the enrollment of a district with two high schools should be at least 520 pupils). We also assumed that, in order for a district not to have a high school that exceeds 900 pupils, the district's enrollment should be no greater than 2,925 pupils per high school (so the enrollment of a district with two high schools should not be greater than 5,850 pupils).

In looking at enrollment figures and numbers of high schools in Kansas, we found 50 districts with enrollments less than 260 pupils (45 of which have a single high school and five of which have more than one high school). We also found 24 districts with enrollments too large to support the number of high schools they have (18 of which have one high school, two of which have two high schools, three of which have three high schools, one of which has four high schools, one of which has five high schools, and one of which has seven high schools). We also identified two districts where total enrollment is simply so high that, regardless of numbers of high schools, they might be viewed by some people as being too large to manage effectively.<sup>2</sup>

Districts that are too small relative to the number of schools they operate. The districts are listed below by category.

*Too small with only one high school:* Cheylin (103), White Rock (104), Moscow Public Schools (20-9), Northern Valley (212), West Solomon Valley Schools (213), Rolla (217), Ashland (220), North Central (221), Fowler (225), Hanston (228), West Smith County (238), Weskan (242), Palco (269), Triplains (275), Jewell (279), West Graham-Morland (280), Elk Valley (283), Cedar Vale (286), Grinnell Public Schools (291), Wheatland (292), Prairie Heights (295), Sylvan Grove (299), Nes Tre La Go (301), Smoky Hill (302), Bazine (304), Brewster (314), Golden Plains (316), Herndon (317), Eastern Heights (324), Logan (326), Burrton (369), Montezuma (371), Hamilton (390), Paradise (399), Chase-Raymond (401), Mullinville (424), Midway Schools (433), Hillcrest Public Schools (455), Healy Public Schools (468), Dexter (471), Haviland (474), Copeland (476), Pawnee Heights (496), Lewis (502), and Attica (511).

*Too small with more than one high school:* Barnes (223), Leroy-Gridley (245), Southern Cloud (334), Rural Vista (481), and Axtell (488).

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<sup>2</sup>In 1997-98, there were 14,805 school districts in the United States, of which 230 districts enrolled 25,000 or more pupils (those districts represented 1.6 percent of all districts and they enrolled 31.5 percent of all pupils)

Districts that are too large.

*Too large relative to the number of high schools:* Turner-Kansas City (202), Blue Valley (229), Olathe (233), Emporia (253), Derby (260), Haysville (261), Goddard (265), Maize (266), Salina (305), Hutchinson (308), Seaman (345), Newton (373), Manhattan (383), Great Bend (428), Auburn Washburn (437), Dodge City (443), Leavenworth (453), Garden City (457), Geary County Schools (475), Liberal (480), Hays (489), Lawrence (497), and Kansas City (500).

*Too large:* Wichita (259) and Shawnee Mission (512).



**TABLE III-1**

**DISTRICT-WEIGHTED KANSAS STATEWIDE  
STATISTICS FOR VARIABLES RELATED TO PER PUPIL  
SPENDING AND PUPIL PERFORMANCE IN 1998-99**

<u>Variable</u>	<u>Statistics</u>			<u>Coeff. of Variation</u>
	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	
<u>Per Pupil Spending</u>				
(1) Total Spending (Instr., Admin., and Plant M&O)	\$5,367	\$3,504	\$10,928	.214
(2) Instruction	\$3,714	\$2,503	\$7,301	.191
(3) Administration	\$860	\$224	\$2,529	.377
(4) Plant M&O	\$793	\$391	\$2,184	.295
<u>Test Scores - Raw</u>				
(5) Reading	65.2	52.5	76.3	.059
(6) Math	50.5	38.5	63.3	.095
(7) Writing	3.45	2.70	4.08	.063
<u>Test Scores - Standard ("z")</u>				
(8) Total "z"	.398	- .759	6.67	1.098
(9) Reading "z"	.236	- 2.697	2.784	3.787
(10) Math "z"	-.037	- 2.168	2.228	22.550
(11) Writing "z"	.200	- 3.697	3.495	5.660

**TABLE III-1 (Continued)**

<u>Variable</u>	<u>Statistics</u>			<u>Coeff. of Variation</u>
	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	
<u>Other Variables</u>				
(12) 1998 Assessed Value Per Pupil	\$48,284	\$612	\$537,214	1.179
(13) Imputed Local Operating Tax Effort	31.4m	21.0m	55.2m	.214
(14) District Enrollment	1,477	76	44,925	2.536
(15) Attendance Center Enrollment	230	38	816	.576
(16) Percent of Pupils Eligible for Free Lunch	22.8%	1.0%	59.0%	.426

TABLE III-2

PUPIL-WEIGHTED KANSAS STATEWIDE STATISTICS  
FOR VARIABLES RELATED TO PER PUPIL SPENDING  
AND PUPIL PERFORMANCE IN 1998-99

<u>Variable</u>	<u>Statistics</u>			<u>Coeff. of Variation</u>
	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	
<u>Per Pupil Spending</u>				
(1) Total Spending (Instr., Admin., and Plant M&O)	\$4,376	\$3,504	\$10,928	.168
(2) Instruction	\$3,162	\$2,503	\$7,301	.142
(3) Administration	\$568	\$224	\$2,529	.397
(4) Plant M&O	\$646	\$391	\$2,184	.247
<u>Test Scores - Raw</u>				
(5) Reading	64.2	52.5	76.3	.068
(6) Math	50.7	38.5	63.3	.111
(7) Writing	3.41	2.70	4.08	.056
<u>Test Scores - Standard ("z")</u>				
(8) Total "z"	.000	- 7.590	6.67	n/a
(9) Reading "z"	.000	- 2.697	2.784	n/a
(10) Math "z"	.000	- 2.168	2,228	n/a
(11) Writing "z"	.000	- 3.697	3.495	n/a

**TABLE III-2 (Continued)**

<u>Variable</u>	<u>Statistics</u>			<u>Coeff. of Variation</u>
	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	
<u>Other Variables</u>				
(12) 1998 Assessed Value Per Pupil	\$41,988	\$612	\$537,214	.914
(13) Imputed Local Operating Tax Effort	34.5m	21.0m	55.2m	.185
(14) District Enrollment	1,477	76	44,925	2.536
(15) Attendance Center Enrollment	387	38	816	.366
(16) Percent of Pupils Eligible for Free Lunch	24.2%	1.0%	59.0%	.626

**TABLE III-3**

**DISTRICT-WEIGHTED AVERAGES FOR VARIABLES RELATED  
TO PER PUPIL SPENDING AND PUPIL PERFORMANCE IN  
1998-99 BY QUINTILE OF PER PUPIL PERFORMANCE\*  
FOR SCHOOL DISTRICTS IN KANSAS**

	<u>Quintile of Performance</u>				
	<u>Less than - 1.40</u>	<u>- 1.40 to - .08</u>	<u>- .07 to .98</u>	<u>.99 to 2.22</u>	<u>More than 2.22</u>
Number of Districts	61	61	61	61	60
Number of Pupils	143,826	54,550	87,229	62,162	101,159
 <u>Variable</u>					
<u>Per Pupil Spending</u>					
(1) Total Spending (Instr., Admin., and Plant M&O)	\$5,342	\$5,307	\$5,265	\$5,381	\$5,542
(2) Instruction	\$3,702	\$3,652	\$3,646	\$3,717	\$3,855
(3) Administration	\$852	\$855	\$833	\$863	\$897
(4) Plant M&O	\$788	\$800	\$785	\$800	\$791
 <u>Test Scores - Raw</u>					
(5) Reading	60.5	63.9	65.5	67.3	69.0
(6) Math	45.3	48.7	50.5	52.4	55.8
(7) Writing	3.25	3.35	3.45	3.52	3.68

**TABLE III-3 (Continued)**

<u>Variable</u>	<u>Quintile of Performance</u>				
	Less than <u>- 1.40</u>	- 1.40 to <u>-.08</u>	-.07 to <u>.98</u>	.99 to <u>2.22</u>	More than <u>2.22</u>
<u>Test Scores - Standard ("z")</u>					
(8) Total "z"	- 2.659	- .733	.445	1.561	3.425
(9) Reading "z"	- .848	- .064	.291	.701	1.113
(10) Math "z"	- .969	- .355	-.037	.289	.898
(11) Writing "z"	- .842	- .315	.190	.570	1.414
<u>Other Variables</u>					
(12) 1998 Assessed Value Per Pupil	\$55,187	\$42,222	\$42,351	\$49,229	\$52,501
(13) Imputed Local Operating Tax Effort	31.5m	30.3m	30.9m	32.5m	31.6m
(14) District Enrollment	2,358	894	1,430	1,019	1,686
(15) Attendance Center Enrollment	236	222	235	243	213
(16) Percent of Pupils Eligible for Free Lunch	29.5%	23.2%	23.3%	19.9%	18.0%

\* Per pupil performance is measured by the combined z-scores for the three tests.

**TABLE III-4**

**PUPIL-WEIGHTED AVERAGES FOR VARIABLES RELATED  
TO PER PUPIL SPENDING AND PUPIL PERFORMANCE IN  
1998-99 BY QUINTILE OF PER PUPIL PERFORMANCE\*  
FOR SCHOOL DISTRICTS IN KANSAS**

	<u>Quintile of Performance</u>				
	<u>Less than -2.50</u>	<u>- 2.50 to - .43</u>	<u>- .42 to .70</u>	<u>.71 to 2.58</u>	<u>More than 2.58</u>
Number of Districts	27	78	64	92	43
Number of Pupils	87,113	91,947	88,133	92,528	89,133
 <u>Variable</u>					
<u>Per Pupil Spending</u>					
(1) Total Spending (Instr., Admin., and Plant M&O)	\$4,024	\$4,355	\$4,320	\$4,640	\$4,524
(2) Instruction	\$2,935	\$3,098	\$3,113	\$3,297	\$3,359
(3) Administration	\$475	\$615	\$566	\$663	\$515
(4) Plant M&O	\$615	\$643	\$641	\$679	\$650
 <u>Test Scores - Raw</u>					
(5) Reading	58.1	62.0	65.1	66.9	68.7
(6) Math	43.7	47.6	51.0	52.9	58.3
(7) Writing	3.20	3.30	3.41	3.50	3.63

**TABLE III-4 (Continued)**

<u>Variable</u>	<u>Quintile of Performance</u>				
	<u>Less than - 2.50</u>	<u>- 2.50 to - .43</u>	<u>- .42 to .70</u>	<u>.71 to 2.58</u>	<u>More than 2.58</u>
<u>Test Scores - Standard ("z")</u>					
(8) Total "z"	- 3.716	- 1.605	.228	1.472	3.531
(9) Reading "z"	- 1.398	- .508	.205	.618	1.045
(10) Math "z"	- 1.250	- .548	.045	.387	1.340
(11) Writing "z"	- 1.068	- .549	- .022	.467	1.146
<u>Other Variables</u>					
(12) 1998 Assessed Value Per Pupil	\$37,305	\$38,239	\$35,278	\$42,495	\$56,527
(13) Imputed Local Operating Tax Effort	37.9m	32.3m	32.2m	33.0m	37.2m
(14) District Enrollment	3,226	1,179	1,377	1,006	2,073
(15) Attendance Center Enrollment	416	340	357	357	469
(16) Percent of Pupils Eligible for Free Lunch	43.5%	28.9%	24.4%	16.9%	8.0%

\* Per pupil performance is measured by the combined z-scores for the three tests.

**TABLE III-5**

**DISTRICT-WEIGHTED AVERAGES FOR VARIABLES RELATED TO PER PUPIL SPENDING AND PUPIL PERFORMANCE IN 1998-99 BY QUINTILE OF PER PUPIL SPENDING FOR INSTRUCTION, ADMINISTRATION, AND PLANT M&O FOR SCHOOL DISTRICTS IN KANSAS**

	<u>Quintile of Spending</u>				
	<u>Less than \$4,390</u>	<u>\$4,390 to \$5,058</u>	<u>\$5,059 to \$5,431</u>	<u>\$5,432 to \$5,979</u>	<u>More than \$5,979</u>
Number of Districts	61	61	61	61	60
Number of Pupils	292,961	80,260	34,812	27,673	13,220
<u>Variable</u>					
<u>Per Pupil Spending</u>					
(1) Total Spending (Instr., Admin., and Plant M&O)	\$4,024	\$4,754	\$5,242	\$5,698	\$7,147
(2) Instruction	\$2,919	\$3,364	\$3,631	\$3,881	\$4,793
(3) Administration	\$522	\$689	\$848	\$932	\$1,316
(4) Plant M&O	\$584	\$701	\$762	\$884	\$1,037
<u>Test Scores - Raw</u>					
(5) Reading	64.6	64.7	65.1	66.0	65.9
(6) Math	50.6	50.8	50.3	50.9	49.9
(7) Writing	3.42	3.43	3.46	3.45	3.48

**TABLE III-5 (Continued)**

<u>Variable</u>	<u>Quintile of Spending</u>				
	<u>Less than \$4,390</u>	<u>\$4,390 to \$5,058</u>	<u>\$5,059 to \$5,431</u>	<u>\$5,432 to \$5,979</u>	<u>More than \$5,979</u>
<u>Test Scores - Standard ("z")</u>					
(8) Total "z"	.107	.236	.407	.655	.586
(9) Reading "z"	.079	.111	.203	.408	.380
(10) Math "z"	-.018	.016	-.071	.039	-.156
(11) Writing "z"	.046	.109	.276	.208	.362
<u>Other Variables</u>					
(12) 1998 Assessed Value Per Pupil	\$30,367	\$42,096	\$34,266	\$64,013	\$71,053
(13) Imputed Local Operating Tax Effort	32.3m	30.8m	28.7m	30.6m	34.5m
(14) District Enrollment	4,803	1,316	571	454	220
(15) Attendance Center Enrollment	409	277	206	164	92
(16) Percent of Pupils Eligible for Free Lunch	22.2%	19.5%	22.7%	22.0%	27.6%

**TABLE III-6**

**PUPIL-WEIGHTED AVERAGES FOR VARIABLES RELATED TO PER PUPIL SPENDING AND PUPIL PERFORMANCE IN 1998-99 BY QUINTILE OF PER PUPIL SPENDING FOR INSTRUCTION, ADMINISTRATION, AND PLANT M&O FOR SCHOOL DISTRICTS IN KANSAS**

	<u>Quintile of Spending</u>				
	<u>Less than \$3,757</u>	<u>\$3,758 to \$4,033</u>	<u>\$4,034 to \$4,263</u>	<u>\$4,264 to \$4,931</u>	<u>More than \$4,931</u>
Number of Districts	9	22	19	56	198
Number of Pupils	91,399	89,804	91,490	86,712	89,712
<u>Variable</u>					
<u>Per Pupil Spending</u>					
(1) Total Spending (Instr., Admin., and Plant M&O)	\$3,695	\$3,897	\$4,177	\$4,565	\$5,572
(2) Instruction	\$2,776	\$2,817	\$3,120	\$3,291	\$3,822
(3) Administration	\$407	\$456	\$459	\$608	\$918
(4) Plant M&O	\$512	\$625	\$598	\$666	\$833
<u>Test Scores - Raw</u>					
(5) Reading	61.4	62.2	66.4	65.6	65.5
(6) Math	48.0	47.7	54.5	52.7	50.7
(7) Writing	3.29	3.34	3.49	3.46	3.48

**TABLE III-6 (Continued)**

<u>Variable</u>	<u>Quintile of Spending</u>				
	<u>Less than \$4,390</u>	<u>\$4,390 to \$5,058</u>	<u>\$5,059 to \$5,431</u>	<u>\$5,432 to \$5,979</u>	<u>More than \$5,979</u>
<u>Test Scores - Normed ("z")</u>					
(8) Total "z"	- 1.787	- 1.362	1.604	.938	.642
(9) Reading "z"	- .659	- .453	.508	.322	.295
(10) Math "z"	- .488	- .528	.668	.356	.001
(11) Writing "z"	- .641	- .381	.428	.260	.346
<u>Other Variables</u>					
(12) 1998 Assessed Value Per Pupil	\$34,669	\$30,370	\$45,883	\$45,270	\$53,954
(13) Imputed Local Operating Tax Effort	35.0m	35.3m	35.7m	34.8m	31.5m
(14) District Enrollment	10,155	4,082	4,815	1,548	453
(15) Attendance Center Enrollment	449	425	473	390	197
(16) Percent of Pupils Eligible for Free Lunch	37.5%	29.6%	16.2%	15.4%	22.0%

**TABLE III-7**

**PUPIL-WEIGHTED AVERAGES FOR VARIABLES RELATED TO  
PER PUPIL SPENDING AND PUPIL PERFORMANCE IN 1998-99  
FOR THREE GROUPS OF KANSAS SCHOOL DISTRICTS  
IDENTIFIED AS LOW PERFORMING AND HIGH SPENDING**

	<u>Group of School Districts</u>				<u>All Other Districts</u>
	<u>All Kansas Districts</u>	<u>Type A*</u>	<u>Type B**</u>	<u>Type C***</u>	
Number of Districts	304	10	8	10	276
Number of Pupils	448,926	2,919	1,654	9,545	434,808
<u>Variable</u>					
<u>Per Pupil Spending</u>					
(1) Total Spending (Instr., Admin., and Plant M&O)	\$4,376	\$6,508	\$6,723	\$4,941	\$4,340
(2) Instruction	\$3,162	\$4,513	\$4,518	\$3,429	\$3,142
(3) Administration	\$568	\$1,090	\$1,294	\$760	\$558
(4) Plant M&O	\$646	\$905	\$910	\$752	\$641
<u>Test Scores - Raw</u>					
(5) Reading	64.2	61.8	64.5	58.6	64.4
(6) Math	50.7	46.7	45.4	45.3	50.9
(7) Writing	3.41	3.18	3.34	3.17	3.42

**TABLE III-7 (Continued)**

<u>Variable</u>	<u>Group of School Districts</u>				<u>All Other Districts</u>
	<u>All Kansas Districts</u>	<u>Type A*</u>	<u>Type B**</u>	<u>Type C***</u>	
<u>Test Scores - Standard ("z")</u>					
(8) Total "z"	.000	- 2.426	- 1.237	- 3.510	.098
(9) Reading "z"	.000	- .545	.061	- 1.297	.032
(10) Math "z"	.000	- .709	- .937	- .957	.029
(11) Writing "z"	.000	- 1.173	- .361	- 1.255	.037
<u>Other Variables</u>					
(12) 1998 Assessed Value Per Pupil	\$41,988	\$75,280	\$37,946	\$27,983	\$42,087
(13) Imputed Local Operating Tax Effort	34.5m	31.5m	31.0m	39.0m	34.4m
(14) District Enrollment	1,477	292	207	955	1,575
(15) Attendance Center Enrollment	387	176	124	348	391
(16) Percent of Pupils Eligible for Free Lunch	24.2%	24.3%	40.3%	24.9%	24.1%

\* Type "A" districts had *both* higher levels of spending and lower levels of performance than would have been expected given their circumstances.

\*\* Type "B" districts had higher than expected levels of spending *and* performance that has been lower than average for *two* years.

\*\*\* Type "C" districts had lower than expected performance in 1998 *and* lower than average performance in 1997 *and* have spending levels above the predicted level excluding the use of the confidence interval.

## Chapter IV

### INTERVIEW PROCEDURES

The State of Kansas requested that we collect interviews and information from at least sixty (60) school districts, thereby gathering information from a broad cross-section of the state concerning reorganization and efficiency. We received survey information from 90 districts. Using a variety of procedures (including review of the survey information), we identified sixty-four (64) districts and conducted meetings, interviews, observations and analysis with these districts.

#### The On-Site Visit and Interview Process

##### *Selecting Districts for Analysis*

Our review of the literature prompted us to identify districts that had low levels of student performance and high levels of per pupil spending, districts that could most benefit from reorganization and efficiency. Specifically, we selected districts that had a lower pupil performance and higher per pupil spending than would have been expected, given the district's characteristics. The previous chapter provided detail for the selection of the "target" districts in Map 1. In sum, 28 districts had lower performance and higher levels of spending than we expected. These districts became our primary focus for the interview planning, inquiry and collecting data.

In addition to the twenty-eight "target" districts, we identified 44 other districts that had one or more of the following characteristics: (1) below average performance in 1997 and 1998 and higher than average spending; (2) convoluted or odd boundaries; (3) dramatic enrollment changes (a decline of 20% in 5 or 10 years); (4) all buildings 50 years old, and (5) fewer than 150 pupils in the entire district and declining enrollment.

Of these 72 districts (28+44), we isolated 15 districts that would most benefit for an on-site visit, in which interviews and observations would be made to supplement and explain the district's unique circumstances, conditions and problems. Of these 15 districts, ten (10) were type "A" districts that had lower performance and higher spending than expected; four (4) were considered type "B" and "C" districts (of the 18 districts); and one (1) district that met at least five other criteria.

In addition, we sent surveys to 90 districts to supplement the information on enrollment projects, conditions of school facilities, course offerings, distance learning, and sharing with other districts. These 90 districts include the 72 that met the criteria described above, plus 18 neighboring districts.

### ***KASB School Board Meetings***

We met with 43 districts in conjunction with the Kansas Association of School Boards (KASB) meetings:

- 14 of the remaining Type “B” or “C” districts that were not visited.
- 11 districts that met multiple criteria.
- 17 “good neighbor” districts (i.e., a neighboring district of one of the 15 being visited, with relatively high performance and low spending).
- One district neighboring of a district with a convoluted boundary.

### ***The Research Teams***

Three experienced teams (of two) of researchers met with schools at the KASB school board meetings and at district sites. The meetings took place April 2- May 11, 2000.

Team One included John Myers, partner of Augenblick & Myers (A&M), and Dr. Michael G. Lacy, A&M associate and professor at Regis University; Team Two included: Dr. John Augenblick, and Justin Silverstein, partner and associate of A&M, respectively; and Team Three included: Dr. Chris Piphon, former of Senior Fellow at the Education Commission of the States (ECS) and Terry Whitney, former senior policy specialist for National Conference of State Legislatures (NCSL).

While at the meeting, a brief presentation was made describing the procedures, scope and timetable of the study. Questions were solicited at each school board meeting. Before and after the meetings, we met with superintendents, school board members, and community members. We asked the district officials a variety of questions pertaining to (a) per pupil performance and spending, (b) the role the school plays in the community, (c) the future of the district, and (d) views about developing relationships with neighboring districts.

### ***On-Site Visits***

The site visits we conducted gave district administrators, teachers, school board and community members a chance to (1) affirm or explain their (low) performance and (high) spending levels; (2) reaffirm their building capacity needs; (3) forecast future enrollments, and (4) discuss obstacles for student learning in their district.

We met with the district officials for approximately two hours. The interviews were designed to provide 30 minutes with the superintendent; 20 minutes with a

teacher; 40 minutes with a school board member and a leader or member of the community; and then, 30 minutes with a principal or superintendent again. Some school districts requested changed schedules, added interviews, or changed the interview formats. Observations were also made by each research team to confirm, deny, or supplement the interviews.

### ***School Districts Selected***

#### **Western Kansas**

The primary focus of Team One was western Kansas. They met the district superintendents, and school board members at the school board meeting in Weskan, Cimarron, and Stafford. Specifically, Team One met with Atwood (318), Chase (401), Hanston (228), Hill City (281), Hoxie (412), Hugoton (210), Jetmore (227), Oakley (274), Prairie Heights (295), and Rolla (217) all of which were “good neighbors” of districts that had lower than predicted pupil performance and higher spending. Team One conducted two site interviews with superintendents, school board members, community members, and teachers in Moscow (209) and Elkhart (218).

#### **Central Kansas**

Team Two focused on central Kansas. They attended two school board meetings in Cuba, Wellington and Goessel. After the meetings, the research team met with Burrton (369), Conway Springs (356), Lyons (405), Oxford (358), South Haven (509), Winfield (465), Wellington (353), Mankato (278), Phillipsburg (325), Clifton-Clyde (224), Pike Valley (426), Republic County (427), Southern Cloud (334), Washington (222). Team Two had site meetings at Belle Plaine (357), Caldwell (360), Eastern Heights (324), Hillcrest (455), Lenora (213), Morland (280), and Udall (463).

#### **Eastern Kansas**

Team Three went to the school board meetings in Fort Scott, Blue Rapids, Tecumseh, and Lansing. They met with Barnes (223), Bonner Springs (204), Cedar Vale (285), Lyons (406), Madison-Virgil (386), Marysville (364), Neodesha (461), North Central (221), and Pleasanton (344), and Turner-Kansas City (202).

### ***Phone Interviews***

Some school districts did not meet with us at the school board meeting, primarily because they were undergoing changes, such as a new superintendent, administrators, or other. For these districts, we conducted five telephone interviews with the superintendents. These interviews lasted about 90 minutes. The five districts were Argonia (359), Chetopa (505), Elk Valley (283), Fowler (225), and Sterling (376).

### ***Large School Districts***

In addition to per pupil performance and spending, we met with six (6) districts because of their "large" pupil population size (based on average high school enrollments above 900 pupils), to see if they could benefit from reorganization, and to hear their concerns. They were: Auburn Washburn (437), Kansas City (500), Olathe (233), Shawnee Mission (512), Topeka (501), and Wichita (259).

### ***Conclusion***

In sum, we interviewed 64 school districts, received survey information from 90 school districts in Kansas, and received school building capacity information from all school districts. This work provided the evidentiary material for descriptions, explanations and attitudes towards reorganization and consolidation, of substantial resistance and a call for state help found in the next section.

## **Results**

### ***A Summary Of The Interviews***

The interviews with administrators, school board members, community leaders, and teachers suggest that (a) they have substantial resistance to the idea of reorganizing or consolidating school districts; (b) they support state involvement to reorganize districts in extreme cases (where there are declining enrollments and high spending); (c) they justified or defended low student performance and high expenditures; and (d) they viewed the use of technology for student learning and building projects as a way of surviving consolidation; and (e) they were ambivalent about mandates by the state.

### ***Resistance to Consolidation***

Many older and established community leaders and school board members resisted the idea of reorganizing school districts, primarily because they viewed consolidation as a threat to their community. They commonly cited the statewide consolidation in the 1960s, which created unified K-12 districts and reduced the total number of school districts in Kansas. The consolidation resulted in feelings of resentment, loss of autonomy and control, as well as disenfranchisement from the rank and file, they argued. Notably, these accounts did not reference the changing structural conditions in Kansas (e.g., economy, declining populations, desire for efficiency); instead the consolidation was blamed for the destruction of communities and difficult economic conditions. The school closures have had long-term effects they argued, because it is virtually impossible to attract new businesses and industries to

communities that do not have a school. In some counties, the school district is the major employer. In addition, community leaders and school board members consider the (high) school to be the hub of community and extracurricular activities (especially sports), thereby reinforcing a sense of community.

The resistance to consolidation also stems from longstanding and intense feelings toward neighboring districts, counties, and townships. The source of these rivalries is historic, said one superintendent, based on competition over being awarded the county seat over 100 years ago. Some argued that the differences were cultural and socioeconomic, reflecting how each of the communities developed its business activities and interests (e.g., farming, mining, oil and gas producing, and bedroom communities). These interests affected the expectations for student learning and advancement for higher degrees, explained one superintendent. Those communities that were near colleges had higher expectations for student learning. Differences were also expressed in terms of ethnic and regional differences, dramatized with lurid stories of crime and drugs in neighboring towns and cities.

Some district administrators resisted reorganization on financial grounds. They complained that combining school districts would result in less revenues and per pupil spending locally, and more money being sent to Topeka. This was a recurrent concern expressed by oil and gas-rich districts in southwestern Kansas, wanting the authority to act independently.

### ***A Call for State Help***

Some districts distinguished by low and declining enrollments (some fewer than 50 students) thought that they could benefit from state reorganization and support. Many of these districts had large geographic areas. For the most part, these school administrators were concerned about economic efficiency and lowering cost, however they resisted the idea that their declining enrollments affected the quality of education, curricula and student learning. However, one story told by a superintendent unearthed a serious problem. The superintendent reported that one of their most experienced and popular high school math teachers, who taught four grade levels, moved away. Her replacement was not a good teacher. The district enticed the established teacher to return (because of her status in the community); however during her absence, the students suffered. This stark and succinct example shows that in small districts, one good or bad teacher can affect many students, over many grade levels for one or many years.

Rather than closing or consolidating schools, struggling districts proposed that they become "special needs" or "education centers" (e.g., teaching special education, bilingual education, adult education). School board members and community leaders said that they would consider consolidation if the state would "bring neighboring districts here." In other words, the compromises and sacrifices should be made elsewhere.

### ***Explanations for Low Student Performance***

As suggested earlier, one of the criteria that we used to select the schools for the interviews was student performance. The district officials attempted to justify their low performance scores, or defended them by using other criteria.

#### **Justifications for Low Performance**

Some school district administrators justified their lower than predicted performance by complaining about the tests:

- the scope of the tests and indexes were unrepresentative (“scores in the past would have been much higher”).
- the tests were unreliable and unrepresentative (particularly the writing tests).
- the scores were attributed to a statistical aberration, caused by one or two students.
- each class is different and the test did not include the “good” classes.

School administrators accounted for their low student performance by blaming certain groups:

- a bad cohort of students who score poorly on the tests.
- the changing ethnic and socioeconomic demographics (the school serves a high number of ESL students, Hispanics, and “outsiders”).

Neighboring superintendents and school board members argued that low performing schools were a product of:

- poor leadership by superintendents and administrators.
- inexperienced teachers (particularly in remote and rural areas of the state).
- low expectations of student performance, and too much emphasis on extracurricular activities.

#### **Defending Low Student Performance**

Although most did not provide hard evidence, school administrators argued that

the state assessments were not valid or credible because one student could easily bring down the score and status of the entire school. They argued for national comparative standards and new criteria (rather than state assessment), defending their student performance on the grounds that their scores on national test scores (e.g., the Comprehensive Test of Basic Skills or CTBS, or the Iowa Test of Basic Skills, or ITBS) were above the national average. In addition, they argued that scholastic achievement should be measured by graduation rates, which would be better and more reliable measures of success.

In addition, many school officials defended their performance scores by using anecdotal evidence, of three or four exemplars in the community that earned higher degrees from Ivy League Universities, who actively contribute to the community and, have talented children. Without hesitation, administrators could recite the names of students in their districts who received national merit awards or scholarships to major universities.

In addition, some school board members highlighted the benefits of small schools and small school districts, such as: (a) smaller class sizes; (b) higher participation in extracurricular activities; (c) lower dropout rates; (d) less problems; and (e) the production of more productive citizens – particularly when compared to neighboring districts known for crime, drug problems and low scholastic achievement. (“Parents would not send their children there!”)

### ***Explanations for High Spending***

Some districts accepted the fact that they were spending too much, but justified it because of teacher development, training and retention. In spite of the fact that the state is making it easier to cross county and district lines, transportation costs were still cited as the largest expenditure, particularly in large geographic areas with declining enrollments. Thus, because of teacher retention issues (in a climate of teacher shortages) and transportation issues, school administrators argued that the state would not be saving much by consolidating these districts. In addition, high spending was a result of special needs programs, such as ESL, adult education courses, and salaries for bilingual teachers.

In any event, some superintendents and school board members argued that the high level of spending was “not out of line” because the state allows that level of spending in their authorized budget and “local option budget” (LOB), which provided for additional expenditures. After all, they argued, the LOB was supported by the local school board elected by the community. Therefore, they argue that district spending levels are not necessarily a state issue. Moreover, the state financing formulas were inadequate and unrealistic to apply to the special demands of the districts.

### ***Responses to Consolidation***

There was a broad range of responses to reorganizing school districts in Kansas, including denial, capital improvements, innovations, and acceptance.

## Denial

Many school district officials and school board members were in denial about consolidation and reorganization (“Nothing will be done anyway!”), the extent that the districts were low performing and high spending, as well as declining enrollment problems. The most recalcitrant school board members said that they would not even discuss possible plans for sharing with neighboring districts because those “discussions” would eventually lead to consolidation.

Even given the intensity of the rivalries, school board members acknowledged that sharing and cooperation with neighboring districts was occurring in the area of sports and extracurricular activities, but not in the academic arena.

## The Building Boom

Perhaps the most striking response to reorganization was the “building boom.” Some districts were undergoing new construction of new buildings (especially gymnasiums) to increase the probability of the survival of their district. The belief was that by building new, large and modern structures, these districts were less likely candidates for school closures and consolidation. Students from neighboring communities would have to go there.

## Technology as Savior

In response to low student learning and limited curricula, superintendents promised that technology (Two-Way Interactive Television Networks, or ITV courses) was presently addressing their students’ needs. The ITV and distance learning courses offered college-bound students the curricula and course offerings that were not available in the traditional school setting. Through ITV courses, high school students could receive college credit before attending college. However, very few student performance measures on distance learning were available; instead, school officials lionized the ITV. In addition, there has been an effort to build a technology backbone throughout the state, using the community colleges and universities. While most rural areas considered the Internet courses a panacea, a few urban school districts felt burdened by the costs of the Internet.

## Changing and Maintaining Convoluted Boundaries

On the onset of this study, the state expressed interest in changing or straightening the convoluted district boundaries. After all, the district boundaries were set in the 1960s and the rationale for maintaining them is perhaps no longer useful. Still, nearly all of the interviewees said that changing the boundaries is “more trouble than it’s worth,” primarily because of the present open enrollment policies permit students to enroll in districts other than they reside. In addition, the 1992 changes in the School Finance Act decreased the influence of local property value on school funding. Moreover, technology has created “virtual school districts,” one superintendent argued, thereby undermining the need for uniform district boundaries.

## Superintendents as Managers

In spite of the prevalence of Special Education Cooperatives, Service Centers, Interlocals and Networks, most administrators do not routinely and regularly share with neighboring districts. The more innovative superintendents have districts that shared technology, resources, nurses and teachers. Most sharing occurred because of prior relationships among superintendents. One superintendent argued that if reorganization was left up to the superintendents, organizational problems would be easily solved, because (unlike the school boards) superintendents are willing to work together. These superintendents saw the entrenched power of school board members and the lack of clear administrative roles and responsibilities as a major hindrance to taking thoughtful action. Some, however, suggested that sharing teachers for example, caused scheduling and governance problems (i.e., how would teachers be paid and by which district?). Some districts were sharing senior administrators, but savings were unrealized because the superintendents in small districts had other roles and responsibilities, including principal and transportation director.

Some administrators of large school districts have resisted sharing with smaller districts, particularly in rural areas, because of the budgetary, logistical and scheduling demands. The high transportation costs alone do not warrant the effort, they argued. Superintendents of larger districts expressed concern that the smaller districts viewed them as monoliths posed to usurp their schools and communities.

### ***The Reorganization Process***

The more established superintendents suggested that the state should mandate change, while providing timetables and incentives, and not require districts hold down spending and raise taxes until they no longer can afford it ("bleeding the district"). Mandating change would minimize the period of resentment, they argued, while taking the pressure off local school boards and administrators to make difficult financial decisions.

Some administrators wanted the state to provide incentives for reorganization efforts and the sharing of resources. Funding for the programs could occur without state mandates, and could be reevaluated periodically (every 2 or 3 years). Moreover, funding should be given for programs that encourage community dialogue, though "penal programs," head start programs, and others.

### ***Conclusion***

Although there is substantial resistance to reorganizing school districts in Kansas, some district officials acknowledge that something needs to be done. They suggest that a more comprehensive approach for organizing school districts will enhance efficiency and student performance.



## Chapter V

# ALTERNATIVE APPROACHES TO REORGANIZING SCHOOL DISTRICTS IN KANSAS

### Introduction

In Section III, we described two ways to identify districts that might need to be reorganized. First, we focused on school districts where pupil performance was low and where per pupil spending was high. Second, we focused on school districts where schools, or the district itself, may be too small or too large to provide a broad array of services effectively. Having identified "target" districts, we then examined the characteristics of all districts that are neighbors of those target districts to determine if reorganization with one or more of them might address the conditions in each target district. In the case of those districts selected on the basis of relatively low pupil performance and relatively high per pupil spending, we identified suitable neighbors as ones with relatively high performance and relatively low per pupil spending. In the case of those districts selected on the basis of size, we identified suitable neighbors based on proximity, size, and the availability of space to serve pupils. In pursuing these approaches, we discovered several situations in which we were either unable to find a suitable neighboring district for a target district, or the suitable neighbor we found differed depending on which approach (size or performance) was used to identify the neighbor. Therefore, we developed a third approach, which focused on the same target districts we identified using the first and second approaches, but selected neighboring districts using some criteria associated with the first two approaches, as well as information gleaned from the interviews we conducted with school districts, making the outcome both rational and reasonable.

The result of pursuing these three approaches was the development of three maps that display the districts we believe should be reorganized. There are several important things to take into consideration in reviewing the maps. First, we have attempted to use data to drive the process. That is, we established criteria to guide our work and then collected and evaluated relevant information to determine whether any district met the criteria and whether other districts should be involved in reorganization. We strongly believe that this approach is the only legitimate way to do this kind of work and that other approaches would not withstand scrutiny by those who are affected by policy decisions. Second, we used data in making our decisions that some might complain were never intended to be used for that purpose. In our view, the state has gone to the trouble of developing pupil performance data using statewide tests as well as school district spending data using statewide accounting procedures, and such information is the best and only basis for making the kinds of decisions we needed to make in doing this work. Third, while we took our work to completion; that is, we used the data and information we had to recommend that specific districts be reorganized. We did this primarily to illustrate that it is possible to reach such conclusions. However,

as is discussed in Section IV, we believe that the actual reorganization of school districts should follow a process that places the burden on the state to identify districts targeted for reorganization. This should be based on appropriate criteria and data, which might be similar to those we used, then gives target districts some time to overcome the problems that brought them to the state's attention, and then creates a process for identifying which districts would be reorganized if the target district were unable to rectify the situation by itself. Finally, a number of the issues we encountered in doing this work are intra-school or intra-district issues that focus on whether schools should be reorganized or closed. The discussion below is focused exclusively on school districts and assumes that the state has no authority to make school closure decisions or decisions of a similar nature even when they might be what is required to address an issue that brought a school district to our attention.

### **The First Approach to School District Reorganization (Map 1)**

The purpose of Map 1 is to show how school districts in Kansas might look if districts with lower than expected pupil performance and higher than expected per pupil spending were required to merge with other districts in response to those conditions. As has been discussed in the literature review, the rationale for making changes in school district organization has focused on three broad areas of interest: (1) spending levels; (2) programmatic elements; and (3) levels of pupil performance. Map 1 is designed to reflect the results of statistical analysis of pupil performance data and per pupil spending data, which was used to identify target districts as well as to select neighboring districts that might make the best candidates for merger with target districts.

#### ***The Target Districts***

As discussed in Section III, we identified 28 districts that have a combination of relatively low pupil performance and relatively high per pupil spending. Those 28 districts are as follows:

Type "A" (much lower than expected pupil performance and much higher than expected per pupil spending): Moscow Public Schools (209), West Solomon Valley Schools (213), Elkhart (218), Washington Schools (222), Hanston (228), Nes Tre La Go (301), Belle Plaine (357), Chase-Raymond (401), Hillcrest Rural Schools (455), and Udall (463).

Type "B" (much higher than expected levels of spending *and* performance that has been lower than average for *two* years): Fowler (225), Triplains (275), Elk Valley (283), Cedar Vale (285), Herndon (317), Eastern Heights (324), Wathena (406), and Chetopa (505).

Type "C" (somewhat lower than expected performance in 1998, lower than average performance in 1997, *and* spending levels somewhat above the

predicted level): Turner-Kansas City (202), Bonner Springs (204), Mankato (278), Pleasanton (344), Oxford (358), Caldwell (360), Marysville (364), Madison-Virgil (386), Neodesha (461), and South Haven (509).

### ***Identifying Appropriate Neighboring Districts***

Having identified 28 target districts, we examined all their neighboring districts to find appropriate candidates for merger based on four factors: (1) pupil performance; (2) per pupil spending; (3) distance between schools; and (4) being in the same county. Our assumption is that the best candidates for merger are those districts with relatively high levels of pupil performance and relatively low levels of per pupil spending that are reasonably close to target districts (that is, having schools within a distance of 20 miles of each other) and within the same county (representing a similar community of interest). The figures in Table V-1 indicate those characteristics of neighbor districts for each of the 28 target districts.

Table V-2 indicates the recommended mergers of districts, which result in: (1) the creation of 20 merged districts, combining 20 target districts with 22 neighbor districts; (2) of the 20 new districts, 18 reflect merging a target district with one other district and two reflect merging a target district with two other districts; (3) no mergers between target districts; and (4) eight target districts that cannot be reorganized.

### **The Second Approach to School District Reorganization (Map 2)**

As discussed in Section III, we also identified school districts that might benefit from reorganization on the basis of school size. In looking at enrollment figures and numbers of high schools in Kansas, we found 50 districts with enrollments less than 260 pupils. We also found 24 districts with enrollments that are too large in relationship to the number of high schools they have. We also identified two districts where total enrollment is simply so high that, regardless of numbers of high schools, they might be viewed by some people as being too large to manage effectively.

#### ***The Target Districts***

Districts that are too small relative to the number of schools they operate.

*Too small with only one high school:* Cheylin (103), White Rock (104), Moscow Public Schools (20-9), Northern Valley (212), West Solomon Valley Schools (213), Rolla (217), Ashland (220), North Central (221), Fowler (225), Hanston (228), West Smith County (238), Weskan (242), Palco (269), Triplains (275), Jewell (279), West Graham-Morland (280), Elk Valley (283), Cedar Vale (286), Grinnell Public Schools (291), Wheatland (292), Prairie Heights (295), Sylvan Grove (299), Nes Tre La Go (301), Smoky Hill (302), Bazine (304), Brewster

(314), Golden Plains (316), Herndon (317), Eastern Heights (324), Logan (326), Burrton (369), Montezuma (371), Hamilton (390), Paradise (399), Chase-Raymond (401), Mullinville (424), Midway Schools (433), Hillcrest (455), Healy (468), Dexter (471), Haviland (474), Copeland (476), Pawnee Heights (496), Lewis (502), and Attica (511).

*Too small with more than one high school:* Barnes (223), Leroy-Gridley (245), Southern Cloud (334), Rural Vista (481), and Axtell (488).

Districts that are too large.

*Too large relative to the number of high schools:* Turner-Kansas City (202), Blue Valley (229), Olathe (233), Emporia (253), Derby (260), Haysville (261), Goddard (265), Maize (266), Salina (305), Hutchinson (308), Seaman (345), Newton (373), Manhattan (383), Great Bend (428), Auburn Washburn (437), Dodge City (443), Leavenworth (453), Garden City (457), Geary County Schools (475), Liberal (480), Hays (489), Lawrence (497), and Kansas City (500).

*Too large:* Wichita (259) and Shawnee Mission (512).

### ***Identifying Appropriate Neighboring Districts***

Once the target districts using this approach were identified, we examined neighboring districts to determine whether consolidation could address the issue that brought the district under scrutiny. In order for a merger to be feasible, we decided that existing high schools in two districts should be no more than 20 miles apart and that there would need to be sufficient capacity in one or more schools to serve all of the pupils in the newly formed district. The figures in Table V-3 indicate the characteristics of neighboring districts for all 76 target districts.

We found that 45 of the 50 districts considered to be too small could be merged with one or more neighboring districts and would meet all criteria while. For five districts, consolidation with a neighboring district would not solve the problem. Twenty-nine neighboring districts were merged with these 45, resulting in 34 new districts. This meant that where there had originally been 74 districts there were now 34 (of those 34 new districts, 29 are the result of the merger of two districts, four are the result of the merger of three districts, and one is the result of the merger of four districts).

We also found that district reorganization would only address the needs of six districts that are too large relative to the number of high schools they operate. These six districts could be merged with seven neighboring districts to create five new districts (of these five districts, two are the result of merging two districts and three are the result of merging three districts). In 18 districts, some other approach, such as creating "schools within schools," would need to be used to address the issue of large high schools. That approach plus others, such as dividing a district into several districts,

would need to be used to address the issues associated with the two districts that are very large.

Mergers that we consider to be appropriate are shown in Table V-4(A) and Table V-4(B). Map 2 indicates a variety of approaches that might be used to address optimum size issues. The map shows a total of 39 new districts created by merging 51 target districts (ones considered to be too small or too large given the number of high schools they operate) with 36 neighboring districts that, together, are close enough and have sufficient capacity to address the concern in a reasonable way. The map shows that the 39 new districts are the result of 31 mergers of two districts, seven mergers of three districts, and one merger of four districts. In the end, the state would have 256 school districts rather than the 304 districts that exist currently. The map also shows: (1) the five districts that have enrollments that are too low to support a high school of 100 pupils for which we could not find a suitable neighbor for merger; (2) the 18 districts that have high schools considered to be too large but for which we could not find a suitable neighbor for merger (and within which some other approach would need to be taken to address the problem); and (3) the two districts that are very large.

### **The Third Approach to School District Reorganization (Map 3)**

The purpose of Map 3 is to combine the information shown in Map 1 and Map 2 with other information we obtained, including that gained during the interviews with school district personnel, to create a set of districts that should be, and could be, reorganized. Map 3 reflects the research on school and school district size, the actual performance and spending levels of districts, and the practical matters that ought to be taken into consideration before making recommendations about changing school district boundaries.

In order to create Map 3, we developed nine rationales (A-I) for selecting target districts and neighbor districts. The rationales are shown below.

#### **Rationale "A"**

Select any reorganized sets of districts that are the same on both Map 1 and Map 2. In this case, any target district would be selected on the basis of the criteria used in both Map 1 and Map 2 and any districts selected for merger with a target district would meet the criteria used in both Map 1 and Map 2. We identify five target districts and five merger districts using this rational.

#### **Rationale "B"**

Select any target district that meets the criteria for identifying target districts on both Map 1 and Map 2 but that is reorganized differently in Map 1 than it is in Map 2; resolve the differences in Map 3. In some cases, this means that we selected a merger district for a target district for which no merger district is

selected in Map 1. In other cases, we selected a merger district from among alternative districts that we identify in Map 1 or Map 2. Using this rationale, we identify seven target districts and nine merger districts, four of which are targets in Map 2, using this rationale.

#### Rational "C"

Select sets of districts in which one district is a target district in Map 1 and merger districts are target districts in Map 2. Using this rationale, we identify six sets of merger districts.

#### Rationale "D"

Select all districts using Map 1 criteria that have not been selected already and reconfigure them using merger districts from Map 1 or Map 2 if they are reasonable based on distance and information obtained in interviews. We identify nine target districts and nine merger districts using this rationale.

#### Rationale "E"

Select all districts that have schools considered to be too small using Map 2 criteria that have only one high school, which have not been selected already, and reconfigure them only if they meet the following additional criteria:

- (A) If they have between 150 and 260 pupils, they must also meet two out of the following three criteria:
  - (1) Have little or no projected enrollment growth;
  - (2) Have actual per pupil spending that is more than 30 percent above predicted spending per pupil;
  - (3) Have actual average pupil performance below predicted pupil performance.
  
- (B) If they have less than 150 pupils, they must meet one of the following criteria:
  - (1) Have little or no projected enrollment growth;
  - (2) Have actual per pupil spending that is more than 20 percent above predicted spending per pupil.

Using this rationale, we identify nine target districts and nine merger districts, one of which meets Map 2 selection criteria.

### Rationale "F"

Select all districts that have schools considered to be too small using Map 2 criteria that have more than one high school, which have not been selected already, and reconfigure them only if they meet two out of three of the following additional criteria:

- (1) Have little or no projected enrollment growth;
- (2) Have actual per pupil spending that is more than 30 percent above predicted spending per pupil;
- (3) Have actual average pupil performance below predicted pupil performance.

We identify four target districts and four merger districts using this rationale.

### Rationale "G"

Select all districts that have schools that are too large using Map 2 criteria where merger with other districts can alleviate the concern and merger is possible due to available capacity in existing facilities. Using this rationale, we identify three target districts and four merger districts.

### Rationale "H"

Select all districts that have schools that are too large using Map 2 criteria where merger with other districts does not appear capable of resolving the concern and where intra-district or intra-school action needs to be taken. We identify 19 districts using this rationale.

### Rationale "I"

Select districts considered to be too large using Map 2 criteria. These districts may need to be disaggregated into smaller districts. We identify two districts using these criteria.

