AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Economics Staff Paper 336
Potential Cost Savings and Framework of Strategies for Improved Delivery of Government Services*

by
Dr. Mark A. Edelman
Professor of Economics and Public Policy
Iowa State University

560A Heady Hall
515-294-6144
medelman@iastate.edu

A research report completed for the Governor's Strategic Planning Council under agreement with The Iowa Research Council

May 2000

ABSTRACT

*** This Preliminary Assessment represents a response to an important and timely request for information from the Governor's Strategic Planning Council. This report represents a limited response based on findings and principles from existing applied studies, academic literature, and input from a knowledgeable range of expertise from the private and public sectors represented on the Iowa Research Council Public Finance Study Development Committee. The intended purpose of this report is to provide a basis for discussion by the Governor's Strategic Planning Council as well as other state and local policymakers, leaders and citizens. The specific questions provided to the Iowa Research Council included: (1) Is there potential to generate significant savings from consolidation of public services across counties, schools and cities? (2) Will any potential savings from government consolidation be significant enough to fund major new statewide initiatives? (3) Is telecommunications technology changing the economies of scale for provision of public services? (4) What are the alternative strategies for efficient provision of public services in areas of growth and decline?**

Copyright © 2000 by Mark A. Edelman. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.

IOWA STATE UNIVERSITY IS AN EQUAL OPPORTUNITY EMPLOYER
Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam Era Veteran. Any persons having inquiries concerning this may contact the Director of Affirmative Action, 318 Beardshear Hall, 515-294-7612.

Preliminary Assessment of Potential Cost Savings and Framework of Strategies for Improved Delivery of Government Services

Executive Summary of Contents ……..…….. 2

Part I: Restructuring Iowa Schools …….. 4

School Economies of Size …….. 4

Size economies do exist for school districts. However, districts with 500 to 800 pupils are able to achieve per pupil costs that are within $100 of the optimum school size. School consolidation for districts with less than 600 pupils potentially saves up to $39 million--approximately 1.5 percent of Iowa's school operating costs. This process would involve about 40 percent of Iowa's districts and 10 percent of Iowa's K-12 students. Savings are not always generated by consolidation of all small schools; thus a case-by-case process is justified.

District Size, School Characteristics and Educational Performance…….. 6

Wide differences in school performance do exist. However, the findings are often contradictory and ambiguous in terms of explanatory skills, teaching practices and school attributes. Small schools have a much wider variation in mean student performance compared to large schools. In terms of student achievement scores, many small schools often out perform large schools while others do not. Therefore, consolidation of small schools does not always improve student performance.

Policy Choices for Encouraging Change in School Structure……... 9

Choices for changing school structure include mandatory consolidation, voluntary incentives, alternative/charter schools, private schools, home schooling, performance incentives, distance education, and combinations of various elements from the previous options. A targeted approach to identify the state's interest and responsibility in assuring performance could help garner public support for triggering consolidation in cases where student achievement, facility adequacy, and fiscal equity criteria are not met.

Part II: Restructuring Multipurpose Governmental Units…… 12

Economies of Size……12

Economies of size generally exist for multipurpose governmental units. However, size economies are typically unique to each service function or cluster of related functions. Therefore, costs for each function or cluster of related functions are often estimated separately to improve reliability of results and interpretation. In Iowa, there are 8,410 agreements (roughly 84.9 per county) covering a wide variety of joint service provision functions and government contracting for services.

Option 1. Geographic Consolidation……. 14

Geographic consolidation typically refers to the consolidation of one or more political jurisdictions, i.e., county mergers, school district mergers, and city mergers in cases where urban areas grow together and share jurisdictional boundaries. Consolidation of policy and administration functions for Iowa's 15 high-cost counties would generate up to $5 million in savings affecting 150,000 people. A more detailed feasibility study process is required to determine whether savings could actually be generated.

Option 2. Functional Consolidation…….. 15

Functional consolidation refers to the combining of complementary or similar service functions across political jurisdictions. A new joint city-county joint law enforcement facility reduced redundant space and generated 25 percent savings or $1.3 million in construction costs compared to building two new separate facilities. Additional ongoing operational savings were possible due to shared utility costs, labor savings from operating a joint communications dispatch center, and savings from better coordinated distribution of law enforcement manpower response, equipment, and investigative resources. A 1995 study of District Court consolidation options found increased state and local costs from consolidation rather than reduced costs.

Option 3. Internal Restructuring ……. 19

Internal restructuring represents a change within an existing unit of government and may take on a variety of forms: combining offices, reconfiguring responsibilities and functions, transferring a service from one office to another, and adjusting the mix of services. For example, Iowa transferred vital statistics services from the Clerks of District Court in each county to the County Recorders during the mid-1990s. One study estimated 20 to 25 percent savings due to wage differences between clerk and recorder staff.

Option 4. Privatization and/or Outsourcing…….. 14

Governmental units can save costs in some cases by contracting for services with private sector firms or other government agencies. A legislative study compared costs and performance for a pilot outsourcing program in six Southwest Iowa Counties to DOT driver's license issuance. Expansion of county issuance generated annual savings compared to continuing the status quo. Expansion of DOT issuance would have increased costs. Savings in labor costs from utilizing county staff more than offset cost increases for photo imaging equipment. Convenience, integrity of service provided, and helpfulness were identified as factors explaining differences in customer satisfaction.

Summary and Conclusions…….. 22

Efforts to economize the costs of providing government services represent a worthwhile and necessary part of self-government. In a number of past instances, such efforts have produced savings, increased the quality of services provided, or both. However, for a variety of reasons discussed in this report, such savings and enhancements can often be elusive. Local governments provide many unique services each with differing size economies. Transition costs can be high. Some consolidation concepts do not generate savings. Therefore, establishing a case-by-case feasibility study process and targeting consolidation initiatives, incentives and pilot projects toward specific units of government or combinations of service functions that show promise of savings and service delivery enhancement are most warranted.

Selected References…… 23

Preliminary Assessment of Potential Cost Savings and Framework of Strategies for Improved Delivery of Government Services

Part I: Restructuring Iowa Schools

School Economies of Size

An ISU study conducted for the 1988 General Assembly Interim School Finance Study Committee (Edelman and Knudsen, 1990) showed Iowa school district expenditures exhibited a modified-U shaped cost curve over school district size groups. This means that for a presumed level of education quality, costs per pupil decline as district size increases up to a certain district size at which point costs per pupil begin to increase as school district size increases to larger enrollments levels. A somewhat dated but extensive review of traditional size economies in schools was published by Fox (1981). All but one of 34 studies found size economies existed for relevant ranges of enrollment. Most of the studies reviewed by Fox found that per pupil school costs appear to be characterized by a U-shaped average cost curve. The studies show that lower threshold levels of size economies are generally reported in states where geographic sparsity dominates the observations. In addition, the threshold levels in economies of size in elementary schools can be achieved at nearly half the district enrollment level than is true for high schools. A limiting factor of the reported studies is that all were conducted prior to the inclusion of most distance education technology tools in the classroom.

The ISU study was based on 1986-87 data and indicated that Iowa education costs per pupil excluding transportation were minimized at district size of 2,163 students. Both larger and smaller districts exhibit higher costs per pupil. However, the ISU study also indicated that the threshold for most size economies (within $100 per pupil of the minimum) could be achieved by school districts with 800 or more pupils. In fact, Figure 1 shows many small districts exhibit expenditures below the threshold economies line. A similar study conducted in Nebraska by Forsythe, Yanagida and Johnson (1988) indicated that the threshold level for most size economies (within $100 per pupil of the minimum) could be achieved by school districts with 500 or more pupils.

In general, for rural school consolidation to be economically feasible relative to the status quo, the probable increases in pupil transportation costs must be more than offset by potential savings in school personnel and building costs. A feasibility study process is typically used to demonstrate whether savings exist. Savings results in some cases and but not in others. Transportation costs depend on geographic density of students and distance to attendance centers in neighboring districts. Personnel cost savings are more likely to be achieved if there is empty classroom space in the adjoining attendance centers and/or if the number of administrators and personnel are reduced after consolidation. Savings in building costs are most often achieved when two obsolete school facilities are replaced by one larger new facility. In this case, the combined new facility is likely to be less costly in comparison to the cost of building two new smaller school facilities in separate districts with redundant space.

For the 1999-2000 school year, Iowa reports 375 organized school districts (Table 1). Of this total, 40 percent of Iowa K-12 districts (151 districts) have less than 600 pupils. Iowa districts with less

than 600 pupils account for 12 percent (59,744) of Iowa students. Assuming no transition and extra transportation costs to achieve a hypothetical 10 percent savings from mandatory district consolidation of all districts with less than 600 pupils (40% of districts), extrapolation of 1990 ISU study relationships indicate that statewide savings would amount to less than 1.5 percent of the statewide school operating costs. The Combined District Cost for Iowa Public Schools 1999-2000 was $2,573 million. Therefore based on current costs, the estimate of maximum statewide savings from consolidation is $39 million, excluding transition and transportation costs.

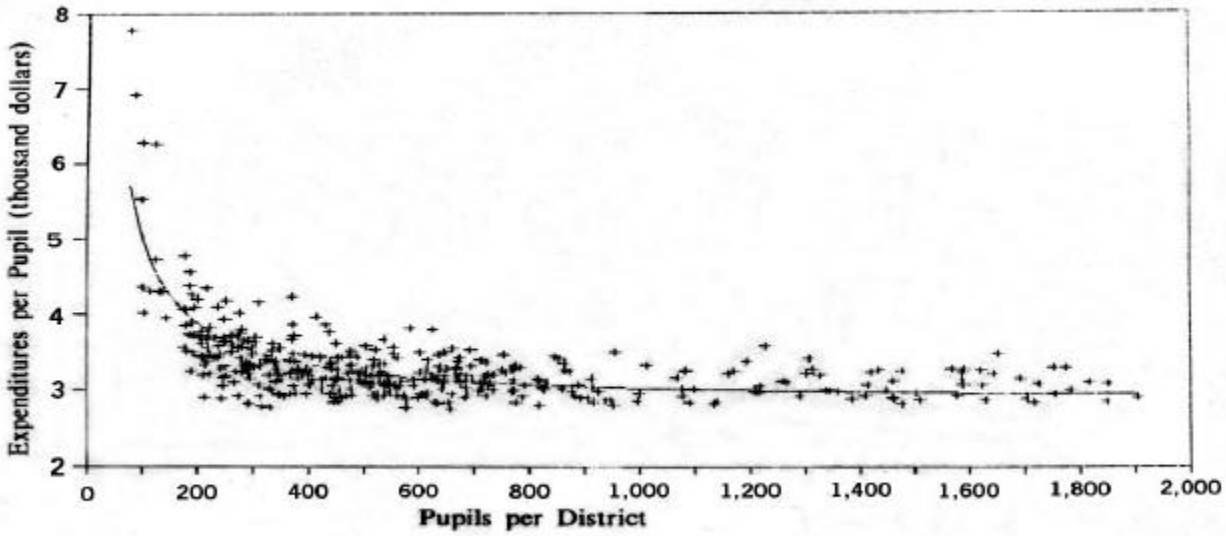

Figure 1. Plot of Average Expenditures per Pupil for Iowa School Districts with less than 2000 Pupils, 1986/87

Of the 375 total school districts in Iowa, 10 percent (37 districts) have less than 300 pupils. Many of these do not have high school attendance centers. Iowa districts with less than 300 pupils account for 1.65 percent (8,228) of Iowa students. Assuming no transition and extra transportation costs to achieve a hypothetical 20 percent savings from mandatory district consolidation for all districts with less than 300 pupils (10% of districts), extrapolation of 1990 ISU study relationships indicate that statewide savings would amount to less than 0.5 percent of the statewide school operating costs. Therefore, based on current Iowa school costs, the estimate of maximum statewide savings from consolidation is $13 million, excluding transition and transportation costs.

It is also important to note that for the 1999-2000 school year, 37 Iowa school districts were sending students to other districts under one-way or two-way whole grade sharing programs. Many of the sharing partners are districts with less than 300 or 600 pupils included in the small district analysis above. Thus, the merger savings estimates above would need to be further reduced by the amount of any savings that is already being realized through existing whole grade sharing programs.

If savings from school mergers occur, they typically are used to expand course offerings and otherwise improve the educational opportunities in the local schools involved. There is no mechanism for any precise accounting of any savings that might occur and there is no mechanism for collecting or reallocating any such dollars--should they exist-- on a statewide basis. Thus, the likelihood that school merger savings might represent a significant source of funding for new state initiatives may be fairly remote. However, this conclusion should not necessarily negate the consideration of approaches for fostering school mergers in cases where educational opportunities and performance might be improved.

Table 1. Distribution of Certified K-12 Enrollment Across Iowa School Districts, 1999.

District Size Category	Districts with Certified Enrollment		1999 Certified Enrollment	
	Number of Districts	% of School Districts Statewide	Number of Pupils	% Statewide Enrollment
≥10,000	7	1.9	114,648.9	22.99
≥ 5,000 <10,000	6	1.6	40,032.1	8.03
≥ 2,500 < 5,000	20	5.3	75,198.1	15.08
≥ 1,000 < 2,500	83	22.1	126,734.0	25.42
≥ 1,000 < 600	108	28.8	82,248.6	16.50
≥ 300 < 600	114	30.4	51,517.2	10.33
< 300	37	9.9	8,228.4	1.65
Total	375	100.0	498,607.3	100.00

Source: Compiled by Mark A. Edelman, ISU Professor of Economics from Iowa Department of Education Web Site Data on Certified Enrollment, April 19, 2000.

Differences in administrative costs and course offerings do exist across the relevant ranges of small Iowa school district size categories. Edelman and Knudsen (1988) found administrative costs decline per student as district size increases. Course offerings by size of school were analyzed for Iowa's smaller four-year high schools Edelman and Knudsen (1990). Districts with 300 students were associated with four-year high school enrollments of 100 pupils that offered about 40 course units (+-5). Districts with 600 students were associated with four-year high school enrollments of 200 students that offered 50 course units (+-5). Districts with 900 pupils were associated with four-year high school enrollments of 300 students that offered 60 course units (+-5). In addition, over this relevant range of school size groups, districts with 10 more course units tended to add eight additional course units in vocational subjects and two additional units in academic subjects (English, math, and science). It is important to note that this analysis was conducted prior to ICN deployment for Iowa school districts. During the 1990s, smaller Iowa school districts have benefited from greater access to specialized courses offered over the ICN. Also the ICN delivery system may tend to be better suited for specialized academic courses in contrast to hands-on vocational subjects.

District Size, School Characteristics and Educational Performance

A number of historically significant studies have engaged the debate over school attributes and student performance. The Coleman Report (1966) appeared to demonstrate that differences in schools had little to do with differences in student performance. Instead, family background and the characteristics of other students in the school seem to be much more important explanatory variables. In 1986, Hanusshek reviewed 147 studies conducted since the Coleman Report. He found five studies that focused on whether schools and teachers differ in terms of performance. All five unequivocally conclude that teachers and schools do differ dramatically in their effectiveness. However, indicators of factors that explain the interrelationships between student performance, schools and teachers are difficult to explicitly measure and have provided a multitude of mixed results.

The various studies reviewed by Hanusshek possessed wide variation in methods and variables used to explain student performance. Out of 112 studies evaluating class size, 89 were not significant at the 5 percent level, 9 were significant and indicated a positive relationship, and 12 were significant indicating a negative relationship. Similarly 95 of 106 studies found the relationship between teacher education and student performance not to be significant. Out of 109 studies, 69 found the relationship between student performance and teacher experience not to be significant. Out of 60 studies, 50 found the relationship between teacher salary and student performance not to be significant. Out of 65 studies, 49 found the relationship between expenditures/pupil and student performance not to be significant. The results are startlingly consistent in finding no strong evidence that school expenditures, teacher characteristics and pupil/teacher ratios have positive effects on student achievement. If teaching skill involves mixing different objective and subjective characteristics together, sometimes in very different ways across individuals, the search for a simply articulated and measured description of effective teachers and schools is likely to fail. Thus, policymakers are potentially left with measuring, identifying and rewarding performance along with developing programs to transfer the performance to other schools and teachers to foster improvement.

Hanusshek explored additional studies that evaluated the impacts of cultural and family background, characteristics of class cohorts, and administrative organizational indicators on student performance. The factors with the most explanatory significance were education and wealth of the student's parents. Downes and Horowitz (1995) examined whether moving resource control from the district level to the building level had an impact on student performance in Chicago schools. They found little impact on student achievement after accounting for student and neighborhood characteristics. Ferguson and Ladd (1995) have added to the debate about the influence of teacher/pupil ratio on student performance. In their study of Alabama schools they found smaller class sizes were consistently related to improved test scores. Using a dynamic modeling technique, Walden and Sisak (1999) found increasing the number of teachers while holding student numbers constant was associated with improved student performance in six of 17 student achievement equations. However, the study also found that school policy inputs, collective, have a relatively small impact on student achievement.

There continues to be little hard evidence for concluding that school district size is unambiguously related to student performance. Walberg and Fowler (1987) found that district size was significant in explaining student test performance but it had low explanatory power compared to student socioeconomic status. More importantly, the results were inconclusive for districts with less than 2000 students. One interpretation of Walden and Sisak (1999) findings suggests a contradictory finding in that increases in district pupil numbers are negatively related to student performance. Bidwell and Kasarda (1975) analyzed student achievement for 104 Colorado school districts. They found that size had no significant direct relationship and only very slight indirect effects on reading and math achievement scores. Larger schools tended to employ teachers with more experience and training, which was found to have a positive relationship with student performance. Larger districts were also associated with higher pupil/teacher ratios, which they found to have a negative impact on student performance.

A classic North Dakota study (Debertin, 1970) shows why many analyses of mean achievement scores are inconclusive in their attempts to find a relationship between school district size and student

performance. Debertin's graphical analysis (Figure 2) illustrates (1) that variation in district academic performance among the small districts was significantly greater than variation among larger districts and

(2) that the variation in district academic performance among small districts was significantly larger than the mean difference between the small and large district groups. This means that several small districts exhibited academic performance that was below the large district group, while several other small districts exhibited academic performance that was above the performance in the large district group. Furthermore, the comparison between large and small districts could be changed by adding a few large districts with student scores either above or below the mean for their group. Thus, any analysis of student performance by school size should consider more than mean comparisons across size groups.

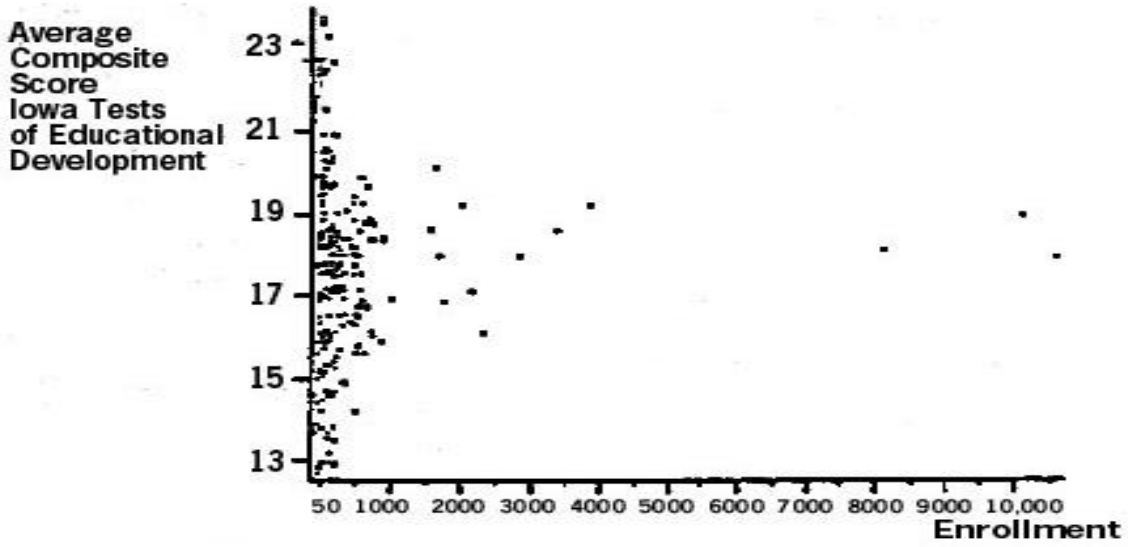

Figure 2. Relationship between District Enrollment and Average Composite Scores on the Iowa Tests of Educational Development, 207 School Districts, North Dakota, 1968-69.

In a study for the Iowa General Assembly, Chambers, Barber and Choi (1988) found that district size is related to a number of factors that potentially influence student performance. Smaller Iowa districts have lower student/teacher ratios and thus have the potential to provide more personal attention to each student in the classroom. Larger Iowa districts have teachers with higher pay and academic credentials beyond the bachelor's degree. Lindsay (1984) found that student participation rates decline as school size increases. Smaller districts generally have the potential to provide individual students with greater opportunity to excel at a broader range of academic and extracurricular activities--not withstanding the documented narrower range of course unit choices available. On the other hand, larger school districts provide individual students with higher levels of competition in academics and extracurricular activities. Thus, individual students are more likely to specialize and excel in a narrower range of pursuits.

Regarding performance after high school, an ISU study (Huba, 1983) found that students admitted to ISU from very small high schools have as good a chance for staying in college and getting good grades as students from very large high schools. However, students from small high schools were less likely to take more advanced courses during the freshman year. An earlier study by Debertin (1973) found similar results for large and small Indiana school districts. Pittman and Haughwout (1987) found that dropout rates increased as the size of high school increased.

Policy Choices for Encouraging Change in School Structure

The paramount educational policy question that often drives school restructuring decisions at the state and local level is: What kind of educational opportunity do we want to provide for our children? Toward this end, a number of school restructuring choices are outlined below:

Option 1. Mandatory Consolidation of districts or high schools. An example of this approach would be for state policy to require that all districts with less than 600 pupils either merge or dissolve. A state commission might be established to draw new district or high school boundaries that coincide with commercial centers and other political subdivisions of the state. Compared to the other options, this approach would likely come at high political cost, particularly if boundary lines were drawn top down by a statewide commission. Local leaders and citizens usually like to determine if they will merge and whom they will merge with. In many cases, small districts are more willing to partner with other small districts so as to retain relatively more local input and control over the future educational system.

The academic literature provides sufficient evidence to conclude that mandatory school consolidation for all small school districts (with less than 600 pupils for example) would sometimes result in negative unintended consequences. This results for three reasons. First, while savings may typically be generated, consolidation of smaller districts does not automatically generate cost savings in every case. Second, if the existing level of student achievement is relatively high in the smaller school, consolidation may potentially lower the mean student performance. Third, while increasing school size has been associated with increased course offerings in the past, deployment of distance education has enhanced the number of course offerings currently offered in small schools during the past decade. Therefore, depending on the number of distance education courses available in a small district, consolidation may not greatly increase course offerings to the degree it once would have.

Option 2. Voluntary Restructuring Incentives. Voluntary incentives take on a variety of approaches. The state might re-institute larger incentives for whole grade sharing, facility sharing, administrator and specialized teacher sharing. The state might work with districts to provide more specialized distance education courses via area education agencies, community colleges, and/or other colleges and universities. Sharing does not automatically result in merger. Therefore contingent on merger or dissolution, the state could provide additional school aid for transition, combined operating budgets and/or new school facilities. The state could increase parental voting rights or reduce voting rule requirements to facilitate district mergers or dissolutions, when low student achievement exists or when there is inability to meet state program and facility standards. The state could pay a greater share of

consolidation feasibility study costs. The state could pay a greater share of differential property tax levy rates of merging districts so as to reduce the impact of tax increases resulting from school consolidations.

In contrast to positive incentives, the state has also considered negative incentives for consolidation. Adoption of open enrollment has provided many parents with flexibility to change school districts based on parental criteria. While few argue with the principle of affording this parental flexibility, a marginal cost windfall for receiving districts has been attached to the transfer by the state of Iowa because both local property taxes and state aid follow the student to the receiving districts. To the degree that students open enroll for school performance reasons, districts left behind must attempt to improve quality with declining resources or eventually they are forced to consider consolidation as student population erodes. This approach to school consolidation has been criticized because the existing generation of students are impacted by school districts that are increasingly starved from financial resources.

Voluntary approaches to consolidation periodically create orphan districts and uneconomic alliances, unless a process of dual local and state approval required. Orphan districts are those which become isolated by surrounding neighboring districts. They often either do not wish to voluntarily merge or others do not wish to merge with them due to tax rate differences, cultural differences, performance differences, or other factors. Uneconomic alliances are districts that merge with districts with distant attendance centers to attempt to retain their own attendance centers or to avoid merger with other districts that attendance centers in much closer proximity.

Option 3. Create Alternative/Charter Public School Networks. The objective of this option is to separate students by interest, ability, positive and/or negative behavior, and other criteria. Recent efforts in mainstreaming have generated some criticism by those who feel that teachers are increasingly pressured to focus efforts on students with special or behavioral problems. Rather than accept local classroom standards, charter and alternative schools allow teachers and/or parents to recombine selected class cohorts to better target teaching plans to meet the achievement goals of a more homogenous (or less diverse) learning group. In other cases, such approaches are sometimes successful in diagnosis and remedial remedy for specific learning problems or abilities. Given the geographic dispersion among Iowa districts, this approach might take the form of regional program networks, utilizing resources of area education agencies, community colleges, and/or other colleges and universities. Critics have sometimes characterized this approach as elitism. Others suggest opportunities for socialization with a broad range of students may erode.

Option 4. Improve Private Schools. Iowa has possessed a long history of religious and private schooling. Private schools are even more predominant in other parts of the nation. Without significant state support, private schools tend to attract students with above average performance and/or with greater access to family wealth. Not withstanding the constitutional issues of using public funds in support private schools, government policies explicitly designed to improve the performance of private schooling options could be expected to result in declining public school performance unless public policy specifically addressed the student access issues. In contrast, increased parental dissatisfaction for public school conditions and performance resulting

from benign state policies may in turn result in additional parental resources being afforded for private school improvement. In this case, the private school system can be viewed as a safety net.

Increasingly some private school resources are being used to diagnose and address specific learning, attitude, and behavioral problems for public school students and their parents. The specialized private school is designed for temporary remedial measures with the intent to accelerate the student's progress so as to perform at grade level or above. Once this is achieved, the student and parents may re-enter public school or evaluate other alternatives.

Option 5. Improve Home School Alternatives. Home schooling enhances student opportunities to achieve individualized learning goals and to receive greater student-teacher-parent contact. However, this option generally reduces the student's opportunities for interaction with peers and interaction with a wider range of teacher experience and depth of knowledge. Iowa law provides access to local district assistance for developing teaching plans, use of learning resources and facilities. Home school students are also tested and monitored under various circumstances to measure progress and performance.

Option 6. Incentives, Rewards, and Flexibility for Improving Performance by school district, building, teacher team, and/or teacher performance. If one acknowledges the potential learning benefits from low pupil-teacher ratios in private schools and one-to-one student-teacher contact in home schooling, a consistent policy might be to also acknowledge the potential learning benefits from relatively low pupil-teacher ratios in smaller schools. Iowa has generally avoided initiatives that connect financial incentives to documented school performance or measured improvements in student achievement—not withstanding of open enrollment.

Given that academic literature indicates performance in student achievement can be quantified and does vary widely among schools and given that the same literature has been unable to identify specific skills and attributes to explain most of the variation, we are left with the notion that some schools and teachers simply develop practices and environments that are conducive to learning but which cannot be quantified. In this case it would appear useful to measure the variation on student performance, reward it, and develop support systems to transfer the culture, practices, and learning environment to other less performing schools. Just as the private sector cultivates and rewards "turnaround" specialists who save failing companies, perhaps the education system should facilitate teachers and administrators who develop a track record of similar accomplishments for schools through student achievement tests. If such talented individuals could be identified through their track record of measured student performance, they might also serve as valuable role models for student teachers and apprentice administrators.

Option 7. Improve Use of Distance Education and Upgrade ICN Technology. The ICN has improved the opportunity for isolated rural schools to provide a wider range of more specialized subjects. Functional consolidation of students—instead of geographic consolidation of districts-- can be achieved via distance education. In general, the ICN works best for courses with lecture or two-way interaction requirements. Under current technology, local teaching assistants are often required. Remote teaching can also have limitations for some vocational,

technology, and other subjects where students are expected to learn by hands on experience. Since telecommunications technology is advancing rapidly, the ICN will quickly become obsolete if it is not upgraded. Leasing the system to allow more efficient scheduling and private sector use of excess capacity in a manner that would continue educational use and provide upgrading of technology should receive serious consideration by policymakers.

Option 8. A Combination of Options. School consolidation could be approached with a more balanced combination of various elements from the previous options. This could be done by specifying criteria for judging when identifiable state interests are not being met by local districts. Public support could be generated if there was widespread agreement on specific measurable performance criteria that all school districts and high schools should meet. If a school district or high school does not meet threshold performance criteria, then consolidation or dissolution is triggered. If a particular small school district and high school exceeds mean student achievement scores of larger schools, is below state cost standards, and possesses facilities that exceed health and safety standards, they would be allowed to continue as an independent school district. If they do not, consolidation or dissolution is required. If consolidation/dissolution is required, districts and their citizens could be afforded the flexibility to draw the new boundaries provided that the resulting plan addressed the criteria deficiencies. The combination option would potentially send a signal to local schools, parents and taxpayers that elevates the state's interest and responsibility for improving student performance, assuring adequate facilities, and fiscal equity.

Part II: Restructuring Multipurpose Governmental Units

Economies of Size

Unlike school districts which represent a single function governmental unit, counties and cities are multi-functional units that provide a variety of services authorized by state laws and demanded by local citizens. The range in public service provision includes (1) street, road, bridge construction and maintenance; (2) law enforcement, public safety, and jail services; (3) home health care, mental health treatment, and public health services; (4) emergency communications, fire protection, and ambulance; (5) parks, recreation and environmental resource management; (6) waste collection, management, and landfill operations; (7) housing, transportation, public assistance and other human services; (8) land use planning, building inspection, and zoning; (9) vital statistics, property title, mortgage lien, judgments and contract registration; (10) property assessment, tax and fee collection, and intergovernmental revenue distribution; (11) elections, policy decisions and administration; (12) economic development, entrepreneurship, and job training activities; (13) legal aide, juvenile services, and local court facility support; (14) driver's license issuance and vehicle registration; (15) drinking water, sewage treatment, and storm water management, (16) electricity, telecommunications, and other services demanded by citizens.

Economies of size studies (Fox, 1980; Doeksen and Peterson, 1987) have generally shown some explanatory relationship between per capita cost of services and the number of people served. However, size economies are typically unique to each service function or cluster of related functions being performed. Therefore, costs for each function or cluster of related functions are often estimated separately to improve reliability of results and interpretation. For example, labor intensive functions requiring the convenience of dispersed local delivery (law enforcement, fire protection, snow removal) will tend to have smaller scale economies in comparison to more specialized capital intensive functions with less time sensitivity that can periodically be served from remote locations. In addition, many opportunities for achieving efficiency are determined by facility design and regulation. Once facilities are constructed, many practical factors affecting the achievable efficiency are locked into place.

Many local governments, particularly smaller, more rural governments, have had a long and successful history of cooperating with neighboring local governments in the provision of public goods and services (Deller, 1998). For example, two Illinois counties share an engineer--as do some Iowa counties. The joint salary is higher than it would have been if the engineer was employed for one county. Higher salaries attract a larger and possibly more talented pool of job candidates. Both counties benefit from lower administrative costs and improved service. In Maine, regional councils of government coordinate the bulk purchase of winter road salt resulting in a $3.00 per ton cost savings or nearly $250,000 for the participating towns. Deller and others point out that in contrast to the impacts of geographic consolidation of counties, cooperative agreements with neighbors allow local governments to achieve greater scale economies and management efficiency without loss of local control. Instead of choosing geographic county consolidation, counties with populations of less than 1,000 people in western Kansas, Nebraska and the Dakotas have favored cooperative agreements and contracting for services to achieve efficiency savings while retaining a measure of self-determination. The smallest Iowa county is Adams County with 4,400 people, based on 1999 Census estimates.

Since 1965, Chapter 28E of the Iowa Code has authorized units of government to enter into a wide range of agreements. Thus similar to other states, many local governments in Iowa have been achieving substantial savings from institutional innovation on a voluntary basis. Additional savings might potentially exist in many cases as public officials learn from the experiences of others and as opportunities for achieving additional savings develop with new technologies. The 28E agreements allow local units of government to create new authorities that jointly provide services, to contract with other units of government for services, and/or to contract with private entities for service provision. Iowa law requires that all 28E agreements be registered with the Secretary of State. While compliance cannot be verified, on May 15, 2000, the Office of the Secretary of State reported 8,410 registered 28E agreements. On a statewide basis this provides a rough average of 84.9 agreements per county. The accuracy can only be considered rough because agreements involving multiple units of government only need to be registered once, agreement renewals are not separated from new agreements and discontinued agreements are not dropped. Even so, the number still represents a substantial five-fold increase over the number of agreements registered during the 1980s.

The University of Iowa Institute of Public Affairs maintains a file of 28E agreements (Bakshy) related to 46 different governmental functions. This file is used with a checklist of principles (Callahan) to provide models and examples for public officials during professional development training sessions. A listing of the different governmental functions (Table 2) provides a sense of breadth of functions in which various units of government are forming partnerships or outsourcing services with other governmental and private sector entities.

A 1988 ISU study (Otto and Edelman) outlined institutional innovation choices faced by local governments in rural areas experiencing demographic shifts and economic structural change. The range of choice encompasses some combination of economic development efforts, raising effective tax rates, reducing services, or institutional innovation and restructuring to achieve more efficient service provision. Institutional innovation and restructuring options include (1) geographic consolidation, (2) functional consolidation, (3) internal restructuring, and/or (4) privatization and outsourcing. This framework is highlighted in the following discussion of alternative consolidation strategies and consequences.

Option 1. Geographic Consolidation

Geographic consolidation typically refers to the consolidation of one or more political jurisdictions, i.e., county mergers, school district mergers, and city mergers in cases where urban areas grow together and share jurisdictional boundaries. In most states, the geographic consolidation process requires a public voting process. Therefore, voters must be convinced as to why the changes are in their best interests. Typically an affirmative vote is required by each separate entity. In some cases, however, a combined voting rule is used, which shifts outcomes toward preferences of the larger entity.

Most of the academic literature cites economies of size and management efficiency as rationale for geographical government consolidations. Savings can also be generated as arbitrary political boundaries are removed to allow more efficient service delivery. However, three studies (Broder and Thompson, 1985; Cook, 1973; Gustely, 1977) found that consolidation does not always generate savings. In these studies expenditures were higher after consolidation took place. Number of employees was not always reduced via consolidation and wages of the entity with lower pre-consolidation pay were equalized up to the scale of the higher paid entity after consolidation. The change in the mix of service preferences (urban and rural residents now within one jurisdiction) created unforeseen costs, such as expansion of services to residents who prior to the consolidation were not afforded a particular service. Finally, rural residents identify several fears that may result from consolidation, including loss of control and self-determination over issues affecting their community; loss of control over service level, convenience, and quality; unnecessary increases in taxes; increased likelihood local revenues will go to improve services in other communities, and loss of community identity (Broder and Schmid, 1983).

For multi-functional governmental units, costs for policy-making and administrative coordination can be estimated separately from specific service provision to determine if there are

economies of size in policy and management functions by size of governmental unit. An analysis of 1992 cost data from the Department of Management (Edelman, 1993) showed that Iowa county administrative costs exhibited a U-shaped cost curve. Per capita county administration costs were minimized at an optimum county population size of 50,000 to 75,000 and at a cost of $28 per capita. On average, higher costs were exhibited in both larger and smaller counties. Annual Supervisor salaries show wide variability with a range of $12, 662 to $68,313 for fiscal year 99-2000--indicating how some counties adjust costs. Some Iowa counties with as few as 12,000 people and as high as 200,000 people were able to achieve administrative costs that were as low or lower than the average for the optimum county size group. In contrast, administrative costs of $40 per capita were exhibited by Polk County--Iowa's most populated county. Only 15 of Iowa's smallest rural counties had administrative costs greater than $40 per capita.

According to the 1993 analysis, consolidation of county administration functions for Iowa's 15 highest cost rural counties would have generated up to $3 million in estimated savings. This estimate represents an average savings of $20 per capita (33% savings) for the 150,000 people residing in the 15 highest cost Iowa counties. The savings estimate is based on the difference for the high cost counties relative to the per capita costs achieved by the counties in the next larger size group on the cost curve. Similar to the school cost savings analysis, this method of analysis represents a gross estimate because the savings may be partially offset by increases in transition and transportation costs. Assuming the 1992 relative cost/size relationships continue to exist, the statewide savings from county administrative consolidation would be estimated at $5 million or less in 2000 after inflation adjustments.

Option 2. Functional Consolidation

Functional consolidation refers to the combining of complementary or similar services functions across political jurisdictions. One approach to functional consolidation is to explore the savings from combining similar services provided by various local jurisdictions. Examples include joint county-city law enforcement, emergency communications centers, economic development entities, airports, street and road maintenance equipment facilities, planning, zoning, and engineering services (See Table 2). Normally, functional consolidation does not require a public vote, unless bonding for a new building is required to facilitate service merger.

Considerable one-time and ongoing savings were estimated in one functional consolidation study (DLR Group, 1999) for a joint city-county law enforcement facility in Boone County. Shared space in the proposed joint facility accounted for approximately 25 percent of the total space. This included entrances, hallways, stairways, lobby, dispatch, armory, restrooms, break/training room, evidence, video, electrical, mechanical, and storage. Assuming costs of $150 per square foot, a joint facility saved $1.3 million in construction costs compared to building two new but separate facilities containing redundant space. Additional savings are estimated for purchase of one high quality set of radio dispatch equipment instead of two. Additional operational savings are possible due to shared utility costs, labor savings from operating one joint communications dispatch center, and savings from better coordinated distribution of law enforcement manpower response, equipment, and investigative resources.

Table 2. Sample 28E Agreements on File by Topic, University of Iowa Institute of Public Affairs, October 1999

Function	Range of Entities Involved
1. Airport Authority	City/County
2. Airport Services	City/Private
3. Animal Control	City/County & City/City
4. Ambulance Services	County/ Private, County/Township, Countywide
5. Billing/Collection Landfill/Sewer Fees	City/City
6. Bridge Engineering & Construction	City/County
7. Building Code Enforcement	City/City & City/County
8. Building Custodial Services	City/School
9. Cable Television Services	City/Private
10. Cemetery Maintenance	City/County, City/Church
11. CDBG Grant Sharing	City/County
12. Council of Governments Creation	Multi-County/Multi-City
13. Disaster/Emergency Communications	City/County, City/City
14. Economic Development Organizations	Multi-County/Multi-City/Private
15. Electric Utilities	City/City
16. Energy Conservation Finance Authority	Multi-County/Multi-City
17. Engineering Services	City/County
18. Equipment/Labor Sharing	City/City, City/County, City/School
19. Fire Protection, Hazardous Material Mutual Aid, Joint Fire Station & Emergency Medical Services Facility	Multi-City/Multi-Township, Multi-City, City/County, City/Multi-Township, City/School
20. Flood plain Enforcement	Multi-City
21. Housing Authority/ Inspections	Regional, City/School, Multi-City
22. Worker Compensation Association	Statewide Multi-City
23. Jail Services	City/County, Multi-County
24. Joint Purchasing	City/City, Multi-City, Multi-City/County, Multi-City/County/School, Bi-State
25. Job Training Partnerships	Multi-County, County/Community College
26. Law Enforcement & Dispatch	City-County, Multi-City/County, City/City
27. Library Services	Multi-City, City/County

28. Mental Health Services	Multi-County
29. Nuisance Code Enforcement	Regional
30. Planning Services	City/County
31. Radio Communication Centers	City/County, Multi-City/County
32. Recreation	City/School, City/Private, City/County
33. Recycling	Multi-County, City/County, City/City, County/Private
34. Risk Management Services	County/Private, City/County
35. School Administrator Sharing	School/School
36. Waste Management Agency	Regional, Multi-County, Countywide, City/County
37. Waste Collection/Disposal	City/City, City/County, Countywide
38. Office/Building Space Leasing	City/County
39. Street/Road Construction, Repair & Maintenance (including Snow Removal)	City/County, County/School, County/Private
40. Transportation Planning & Transit	Regional, City/County/State, City/County
41. Turf Maintenance (mowing, etc.)	City/School
42. Vehicle Maintenance	City/County/State/School
43. Wastewater Treatment Service	Multi-City, City/County
44. Water Operations & Well Inspections	County/State Agency, Countywide, City/State Agency, Multi-City
45. Water Storage	City/University
46. Zoning	City/County

Coordination of services across multiple jurisdictions has the potential to provide enhanced services in metro areas as well as in rural areas. Increasingly, central cities and suburbs are attempting to coordinate efforts and to develop specialized resources for solving crimes and responding to emergencies that often spread across local political subdivision boundaries.

A 1997 ISU study (Edelman and Mayer) estimated a U-shaped cost curve for existing county jails with less than 50 beds. This study showed that existing jails could achieve minimum costs at a relatively small jail size of 10 beds-- as long as dispatchers were allowed to participate in jail supervision. If jail use of dispatchers is disallowed, jails with 17 to 20 beds achieved the minimum cost levels. It is important to note that most of the jails studied were built prior to adoption of current space standards and possess less space per inmate than jails built in recent decades. This contributed to the higher ratings for older-smaller jails based on the efficiency criterion. In recent years, incarceration rates have increased and availability of jail space has

become a more important consideration. Other studies (Katsamples and Plepla, 1992) indicate a wide variation in inmate costs per day for larger jails and factors other than size are often more important determinants of costs for larger jail size groups.

A second approach to functional consolidation is consolidation of similar services over several political jurisdictions. This might include regional courts, regional jails, regional law enforcement services, multi-county housing authorities, multi-county landfills, and regional planning agencies. Again, consolidation provides no automatic assurance that potential savings exist or that they will always be realized.

A 1995 ISU study (Edelman and Raun) analyzed three Iowa District Court consolidation options as proposed by the Chief Justice of the Iowa Supreme Court. Option 1 eliminated District Court Clerk offices in 29 of Iowa's 99 counties. Option 2 consolidated 99 District Court Clerk offices into 31. Option 3 consolidated 99 District Court Clerk offices into 13 offices. Cost estimates were based on examination of court functions in representative rural counties with populations ranging from 8,000 to 21,000. So, the results may not be relevant for smaller rural counties with smaller caseloads than those examined in the study. In general, the ISU study found the consolidation proposals would increase costs for the state court budget. This resulted from additional clerk time, jury accommodation costs, and facility costs. In turn, these cost increases more than offset the potential savings to the state court budget from reduced judge and recorder time and travel expenses. In addition, all three options would have unambiguously increased court service costs paid by local law enforcement and other local government agencies. Instead of generating statewide savings from consolidation, Option 1 was estimated to cost Iowa taxpayers $1.5 million more, annually. Option 2 was estimated to annually cost $6.3 million more. Option 3 was estimated to annually cost $11.8 million more, statewide.

The ISU study suggested that deployment of telecommunications by the Iowa court system could potentially improve the productivity and efficiency for certain court procedures and this might lower the relative cost for regional service delivery. However at the time of the study, judges expressed differing opinions as to the appropriateness of using remote telecommunications technologies for various legal procedures. Thus, supporting law and administrative rulings may be required to determine appropriate telecommunications use for various courtroom proceedings and for transmission of official documents. The court study also identified some negative consequences of regionalization, which potentially raise constitutional issues regarding equal access to justice. For example, abuse victims may have less access to courts in rural areas when seeking timely protection orders. Local businesses, retailers, and others may incur more expense and time costs in seeking small claim judgments. All of the consolidation plans would require that title searches, judgments and liens be researched in two locations which would add costs to real estate closings and mortgage lending processes in rural counties. In short, the cost of justice would increase in rural areas. Lawyers and jails not located in close proximity to consolidated courts would see increased time and transportation costs in performing their services. Finally, the study concluded that it was cheaper for the state to simply add judges at District Court locations where case backlogs existed. This option was eventually selected by the General Assembly with the addition of 11 District Judge positions in 1998.

Finally, those who examine court services without considering transportation costs for law enforcement and proximity to jail space are less likely to develop a full appreciation of "system" efficiency. Transportation of prisoners to a neighboring county can add $10 a day (15% to 20%) or more on top of the typical $55 to $75 per day charge for inmate housing at a neighboring county jail (Hall and Johnson, 1994). If a new 20 to 50 bed jail facility can provide inmate housing for a cost of $55 per day or less (DLR, 1999), savings can be generated for a county by building its own space to house its own prisoners nearer to local District Court services and law enforcement agencies. For this reason, regional jails are likely to remain infeasible unless judicial, administrative, and legal barriers for using telecommunications to reduce transportation costs are removed. In the interim, other uses of telecommunications technologies may be achieved under existing policies. For example, the ISU jail study suggests that an electronic market for jail space might help to reduce search time and transportation costs.

Option 3. Internal Restructuring

Internal restructuring represents a change within an existing unit of government and may take on a variety of forms. In some cases, a division of labor and specialization might occur. For example, some counties have replaced their traditional Board of Supervisors--which exercised both policy and administrative functions--with a County Manager/Board of Supervisors form of government similar to cities. This change emphasizes specialization and division of policy-making functions from administrative implementation.

Internal restructuring can also represent a consolidation of services and responsibilities. Some counties have consolidated the functions of County Treasurers and Recorders within the same county in an attempt to increase staffing flexibility and productivity and/or to reduce staff expenditures while providing the same or more services. Internal restructuring can sometimes be accomplished by transferring a service from one office to another. In the mid-1990s, Iowa transferred vital statistics services from the Clerks of District Court in each county to the County Recorders. Edelman and Menz (1995) estimated that transferring vital statistics services from the Clerks to the Recorders would generate 20 to 25 percent savings relative to the existing cost of service. Nearly all of the estimated cost savings were due to lower wages paid to staff in County Recorder offices compared to wages paid to Clerks of District Court staff who performed the vital statistics functions in each county at the time of the study.

Finally, internal restructuring can represent a decision to eliminate a service. Deller (1998) points out that service reduction is often difficult to undertake as local residents assign value to that which has been previously provided. Several studies suggest that participation in professional development training can reduce costs while maintaining or perhaps even increasing services levels (Deller and Halstead, 1994; Starn, 1996). Professional budget planning with a focus on capital items can reduce costs long term by removing "surprise" expenditures and costs associated with "crisis management," according to Eilrich, Doeksen and Frye (1995).

Option 4. Privatization and/or Outsourcing

Economic feasibility of privatization and outsourcing opportunities depend in part on the cost structure of existing services and perhaps how well or how poorly existing services are managed. Privatization may not always make economic sense or generate savings (Deller, 1998). The government must normally maintain an ability to audit performance, assure integrity in the services provided, and maintain accountability in the use of the public funds. These functions may be harder to accomplish when private and public funds and objectives become commingled or when political patronage becomes a factor which influences the restructuring decision. In addition--assuming the costs of labor, management, and all other factors of production are the same-- the profit margin and taxes of the private for-profit firm represents costs of production incurred by the private sector firm that would not be required under public sector agency service provision. Theoretical differences disappear with private non-profit firms with tax exempt status.

However, labor, management, and all other factors of production are never identical in terms of cost. So, outsourcing can sometimes be relatively more efficient. This may be particularly true when one or more of the following occur: (1) if newer and more productive technologies are used by private sector firms, (2) if lower wages are paid by private sector firms, (3) if greater economies of size can be achieved by private sector firms, and (4) if the private sector firms exhibit slack capacity. Compared to public agencies, private firms may be subject to fewer political and administrative barriers such as arbitrary limits on the number of employees hired, inter-agency turf, jurisdiction boundaries, and procedural barriers. As a result, while there are many cases in which public agencies can provide services more efficiently and effectively than private sector firms, there are also some other cases in which public services can be more efficiently and effectively provided by private sector firms. A case-by-case analysis is required to determine whether potential savings from private sector outsourcing actually exist.

According to a national survey (David, 1986) solid waste collection is the municipal function most likely to be contracted out with a private sector entity. In a survey of Illinois cities, Johnson and Walzer (1996) found that 87% privatized residential solid waste collection, 84% privatized solid waste disposal, 77% privatized recycling programs, and 64% privatized yard waste collection. In contrast, several other functions exhibited very little privatization such as 8% privatized wastewater treatment and 4% privatized sewage collection. When asked which services the city might consider privatizing, out of a list of 59 services and 29 support functions, water distribution, waste water treatment and sewage collection were among the top five. One of the reasons often cited for this area is the ability to monitor and measure quality and quantity of the service produced (Deller, 1998). Miranda (1994) reviewed 17 studies since 1965. Only four studies found no significant difference in costs. Hirsch (1995) provides a cautionary note that the empirical cost estimates provided by the review of empirical studies come from a biased sample that include cost data of firms that have a contract, and they received a contract only because their costs were below in-house production. The sample does not include private firms that did not receive contracts because their costs were higher than public provision.

Outsourcing of public services doesn't necessarily require contracting with a private firm. In some cases, other units of government can perform a particular function more effectively and efficiently than the service can be performed internally. For example, Iowa's townships have increasingly contracted for fire protection services with neighboring cities. Small towns increasingly contract with counties for law enforcement services.

Driver's license testing and issuance represent a unique case study of public service outsourcing by a governmental unit in Iowa (Legislative Service Bureau, 1987). In this case, state government via the Department of Transportation (DOT) outsources testing and issuance services to County Treasurer offices in voluntary clusters of rural counties. A Motor Vehicle Driver's License Issuance Study Committee authorized by the 1997 Iowa General Assembly examined a pilot project of issuance by County Treasurers that had existed in six rural southwest Iowa counties. The Committee compared the costs and performance to issuance services provided by DOT via a combination of permanent regional offices and traveling teams that visited outlying counties for one or two days per week. Finally, the Committee recommended future directions for Iowa's driver's license testing and issuance services. The Committee's incremental cost analysis indicated the three alternatives representing expansion of County Treasurers' issuance were less costly than continuing the status quo. In addition, three alternatives considered for expansion of DOT issuance teams would have increased costs. In general, the savings in labor costs from utilizing County Treasurers' staff compared to DOT staff more than offset the increase in expenditures required for the added units of visual testing and digital photo imaging equipment.

In addition to the cost analysis, the Committee conducted a scientific survey to compare responses from randomly selected citizens who previously received drivers' license testing and issuance services in the pilot project counties served by County Treasurers and six matched counties served by DOT. The results indicated travel time, distance to testing location, hours of operation, and waiting time at testing sites were important convenience factors explaining differences in satisfaction and choice of service location between the two groups of respondents. Statistical analysis also indicated significant differences in favor of County Treasurers regarding customer service attributes such as helpfulness, politeness, and knowledge of the rules and procedures. While those receiving service from DOT sites were more likely to respond that their site was better in terms of protecting public safety, there were no significant differences found when respondents of both groups were asked about the likelihood of qualified persons being denied privileges or unqualified persons being granted privileges at their testing site. In response to quality assurance concerns, the Committee recommended comparable training for all staff involved in issuance. DOT retains authority for monitoring of staff performance and authority to discontinue county issuance contracts under the 28E agreement format recommended.

Finally, Florida public officials testified to the Driver's License Issuance Study Committee and indicated the State of Florida not only contracts with local government to issue driver' licenses, but it also contracts with local private sector entities in metro areas. This expands the number of locations for convenience and private sector contractors often provide more flexible evening and weekend hours to attract those who work during normal business hours. Citizens who visit the private testing and issuance sites are willing to pay an extra $5.00

fee for the added convenience. The extra revenue is shared by the state and local contractors to cover extra costs for providing the service. At issue in many consolidation discussions is whether or not local citizens are willing to pay extra for local access, convenience and control. If local citizens know the tradeoffs and are willing to pay the extra costs for having local government and local schools, under what conditions should the state's interest in pursuing consolidation be considered the paramount or secondary priority of concern relative to local citizens? This is a question deserving of much deliberation at both the state and local level.

Summary and Conclusions

It is generally easier for state governments to create incentive frameworks for voluntary local restructuring than to impose mandatory consolidation. Local governmental units often wish to modify and invent solutions that work best for their unique circumstances and objectives. When savings do exist, they typically accrue to merging entities as an incentive to proceed with reorganization. These savings are typically reinvested to improve the quality of service and to facilitate transition to the reconfigured delivery system. Unless well-conceived benefits are articulated, top-down mechanisms to collect and reallocate consolidation savings toward new statewide initiatives may risk the perceived local incentives for voluntary restructuring and impose new unintended barriers that could impede continuation of progress made in recent decades. A detailed and objective feasibility study process involving the relevant governmental units should be conducted on any specific proposals to identify whether potential savings are generated, who gains, who loses, and whether other important service characteristics are changed in the process. If this step is not taken, decision-makers risk encouraging consolidations that generate little or no savings or service enhancement. Public support for such efforts can easily erode when unintended consequences occur or when savings cannot be realized or verified.

Efforts to economize the costs of providing government services represent a worthwhile and necessary part of self-government and, in a number of past instances, such efforts have produced savings, increased the quality of services provided, or both. For a variety of reasons discussed in this report, such savings and enhancements can often be elusive. Local governments provide many unique services each with differing size economies. Transition costs can be high. Some consolidation concepts do not generate savings. Therefore, it may be important to target any restructuring initiatives, pilot projects, and incentives toward units of government or specific combinations of functions for which the most promise for savings and service delivery enhancements might be indicated. For example, citizens in the highest cost counties or highest cost school districts are likely to achieve greater savings per capita and improved services than other jurisdictions. Incentives for pilot projects involving circuit riders, internal restructuring, functional consolidations and outsourcing would provide valuable demonstrations that allow citizens, policymakers, and analysts to evaluate the degree of success or lack thereof in achieving savings and/or service enhancement. In an era of new information technologies that promise to enhance productivity, service quality and convenience, it is particularly important to create an environment for experimentation and testing to determine appropriate best practices.

Selected References

Part 1. Restructuring Iowa Schools

Bidwell, Charles E., and John D. Kasarda . " School District Organization and Student Achievement**." American Sociological Review**. 40(February 1975): 55-70.

Coleman, James S. et al. *Equality of Educational Opportunity*. Washington, DC, US GPO, 1966.

Chambers, George, Dale Barber and Joon Yul Choi. "Studying School Finance in Iowa: Variations in Pupil-Personnel Ratios, Teachers' Degrees, Experience, Salaries, Turnover Rates and Applications." Interim School Finance Study Committee, Iowa General Assembly, November 15, 1988.

Debertin, David L. "Cost-Size-Quality Relationships affecting North Dakota Schools." M.S. thesis, North Dakota State University. 1970.

Debertin, David L. "An Econometric Investigation of the Provision for Public Education in Indiana." Ph.D. thesis, Purdue University, 1973.

Downes, T.A. and J.L. Horowitz. "An Analysis of the Effect of Chicago School Reform on Student Performance." **Economic Perspectives of the Federal Reserve Bank of Chicago.** 19(1995): 13-35.

Edelman, Mark A. and James J. Knudsen. "A Classic Economies of Size Analysis on Average School Costs: An Iowa Case Study." **North Central Journal of Agricultural Economics**. 12-1(January 1990): 99-108.

Edelman, Mark A. and James J. Knudsen. "An Analysis of Iowa School Spending Patterns and Size Characteristics." Department of Economics Staff Paper 194, Iowa State University, October 1988.

Ferguson, Ronald and Helen Ladd. "Additional Evidence on How and Why Money Matters: A Production Function Analysis of Alabama Schools." Presented Performance-Based Approaches to School Reform Conference, The Brookings Institution, Washington D.C, April 6-7, 1995.

Fox, William F. "Reviewing Economies of Size in Education**." Journal of Education Finance.** 6(1981): 273-296.

Forsythe, Ken W., John F. Yanagida, and Bruce B. Johnson. "Public School Resources in Rural Communities: An Examination of Size Economies in Eastern Nebraska Public School Districts." **North Central Journal of Agricultural Economics**. 10(1988): 293-300.

Hanusshek, Eric A. "The Economics of Schooling**." Journal of Economic Literature**. 24-3(September 1986): 1141-1177.

Huba, Mary E. "Relationships Among High School Size, Other High School Characteristics and Achievement in Freshman Year of College." **College Student Journal,** 17(Fall 1983): 284-293.

Lindsay, Paul. "High School Size, Participation in Activities and Young Adult Social Participation: Some Enduring Effects of Schooling." **Educational Evaluation and Policy Analysis.** 6-1(Spring 1984): 73-83.

Pittman, Robert B. and Perri Haughwout. "Influence of High School Size on Dropout Rates." **Educational Evaluation and Policy Analysis.** 9-4(Winter 1987): 337-343.

Walberg, Herbert J. and William J Fowler, Jr. "Expenditure and Size Efficiencies of Public School Districts." **Educational Researcher**. (October 1987): 5-13.

Walden, Michael L. and Mark R. Sisak. "School Inputs and Educational Outcomes in North Carolina: Comparison of Static and Dynamic Analyses**." Journal of Agriculture and Applied Economics.** 31-5(December 1999): 593-609.

Part II: Restructuring Multipurpose Governmental Units

Bakshy, Leah. "28E Agreements on File" Institute of Public Affairs, Univ. of Iowa. Oct. 1999.

Broder, J. M. and A. Schmid. "Public Choice in Local Judicial Systems." **Public Choice.** 40(1983): 7-19.

Broder, J. M. and R. A. Thompson. "An economic Analysis of Citizen Influence o Community Service Delivery and Consolidation." College of Agriculture Experiment Station Research Bulletin #334, University of Georgia, Athens, GA, 1985.

Callahan, Pat. "Governmental Service Sharing Program: 28E Agreement Checklist Model Agreements." Institute of Public Affairs, University of Iowa. 1999.

Cook, G. C. "Effects of Metropolitan Government on Resource Allocation: The Case of Education in Toronto." **National Tax Journal.** 26-4(1973): 585-590.

David, I. "Privatization in the United States," in *The Municipal Year Book.* Washington D.C. International City Management Organization, 1998.

Deller, Steven C. "Local Government Structure, Devolution, and Privatization**." Review of Agriculture Economics**. 20-1 (Spring-Summer 1998): 135-154.

Deller, Steven C. and J. M. Halstead. "Efficiency in the Production of Rural Road Services: The Case of New England Towns." **Land Economics**. 70-2(1994): 247-259.

DLR Group. "Boone County/City Law Enforcement Center Study." January-April, 1999.

Doeksen G. A, and J. Peterson. *Critical Issues in the Delivery of Local Government Services in Rural America.* Washington D.C. U.S. Department of Agriculture, ERS, 1987.

Edelman, Mark A. "Reinventing Local Government." Chp. 4 in *Restoring Iowa's Democracy*. Mid-Prairie Books, Parkersburg, IA, 1993.

Edelman, Mark A. and Adrian J. Mayer. "An Analysis of Costs by Size of Jail for Selected Counties in Iowa." Department of Economics Staff Paper 289, Iowa State University. December 20, 1997.

Edelman, Mark A. and Terry L. Raun. "Does Rural Court Consolidation Save Costs? An Iowa Case Study." **Judicature: Journal of the American Judicature Society**. 79-2(November 1995): 86-90.

Edelman, Mark A. and Brian L. Menz. "A Cost Analysis of Providing Vital Statistics Services by Iowa Local Government. Department of Economics Staff Paper 262, Iowa State University. January 16, 1995.

Eilrich, F. C., G. A. Doeksen, and J. Frye. *Capital Improvement Planning: A Guidebook for Wisconsin Communities.* Local Government Center and Center for Community Economic Development, University of Wisconsin-Extension, 1995.

Fox, W. F. *Size Economies in Local Government Services: A Review.* Washington D.C. U.S. Department of Agriculture, ERS, 1980.

Gustely, R. D. "The Allocation and Distributional Impacts of Governmental Consolidation: The Dane County Experience." **Urban Affairs Quarterly.** 12-3(1977): 394-364.

Hall, David B., and James Johnson, Inc. "Franklin County, Iowa Needs Analysis and Study, Jail Operations Final Report." August 1, 1994.

Hirsch, W. Z. "Costs Functions of an Urban Government Service: Refuse Collection." **Review of Economic Statistics.** 47(1965): 87-92.

Katsamples, Paul and Gordon Plepla. "Marshall County, Iowa Jail Facility and Pre-Architectural Planning." June 1992.

Legislative Service Bureau. "Final Report: County Issuance of Motor Vehicle Licenses Study Committee. Iowa General Assembly, January 1998.

Miranda, R. A. “Government or Market: Privatization of Municipal Service Delivery.” **Research in Governmental and Nonprofit Accounting.** 8(1994a): 237-266.

Otto, Daniel M. and Mark A. Edelman. “Innovation in Structural Change of Local Government.” **American Journal of Agricultural Economics.** (November 1990) Pages1074-1080.

Starn, M. L. “Public Works Management: Old School Approach Doesn’t Cut it Anymore.” **Current Municipal Problems.** 23-2(1996): 217-223.