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Economic Impact of the
Nebraska School for the Deaf

January 1988

Center for Applied Urban Research
College of Public Affairs and Community Service
University of Nebraska at Omaha

ECONOMIC IMPACT OF THE NEBRASKA SCHOOL FOR THE DEAF

Introduction

Researchers from the Center for Applied Urban Research examined the economic impact of the Nebraska School for the Deaf (NSD) on the Omaha area and the state. The impact of the NSD reaches far beyond its primary function of providing educational opportunities for deaf children in Nebraska, therefore, measuring its value is difficult.

The school has a long history in the Omaha area. Since opening in 1869, it has been a focal point for deaf persons throughout Nebraska, and its 23-acre campus in North Omaha provides stability to the neighboring area.

Although NSD's contributions to the economies of Omaha and the state are not part of its mission, its economic impact should not be ignored. The most obvious and easily measured economic impact of the Nebraska School for the Deaf, or any similar facility, can be estimated by the incomes it generates and the jobs it provides. The total economic impact, however, consists of a chain of effects that ripple through the Omaha and state economies.

The direct effects include the expenditures and employment associated with the operation of NSD. Indirect effects are experienced when local goods and services are purchased by the NSD and when employees spend their wages locally and pay state and local taxes.

This report is based on data supplied by NSD staff from their administrative records. Occasionally, these data were insufficient for our analysis, so estimates were produced. Assumptions used in the report are presented in the appendix. This report presents only estimates of the economic effects of the Nebraska School for the Deaf on the local and state economies. It is not intended to evaluate the efficiency of the operation of the school nor is it intended to measure the quality of the education provided.

Basic and Nonbasic Industries

To better evaluate the total economic impact of the NSD, the distinction between basic and nonbasic industries must be understood. Basic industries export goods and services outside the region and bring in new income. Activities of basic industries, therefore, have multiple effects on an area, as the new income is spent and respent. For example, a food processing plant that exports most of its products to the rest of the country is a basic

industry. Cities and states try to attract and promote the growth of basic industries as an economic development strategy.

A nonbasic industry is one that produces goods and services that are consumed locally. Examples include real estate agencies and convenience food stores. Nonbasic industries depend on basic industries to export products that attract new money into the area. The health of nonbasic industries, therefore, is related directly to the health of basic industries in the area.

Most firms have both basic and nonbasic aspects. The extent to which a firm is basic determines the overall size of its impact. In one sense, the NSD can be considered primarily a nonbasic industry. That is, taxes and tuition collected throughout the state simply are redistributed to Omaha, with no net effect on the number of jobs and the total income for the state. If we assume that the state has decided to operate a school for the deaf, it makes little difference to the state's economy where the school is located. One area of the state will gain revenues while the remaining areas of the state will lose tax dollars.

A facility funded by state government can be a basic industry for an individual community. It attracts incomes and keeps taxes from leaving the area. Most people recognize that a federally funded facility adds to a local economy, with Senators and Representatives supporting federal projects in their states or districts. For example, Nebraska, Sarpy County, and Bellevue all gain jobs and incomes and sales activities increase because of Offutt Air Force Base. Similarly most residents of Chadron, Kearney, Lincoln, Omaha, Peru, and Wayne realize that their local economies benefit from the presence of state-funded colleges and universities.

Some activities funded by the state government may be considered basic industries (or have aspects of a basic industry) for Nebraska. Instead of bringing new expenditures from outside the state, they provide programs for Nebraskans that keep money (state and local taxes) within the state, preventing an outflow to other parts of the country. Thus, the impact of moving the NSD to another city in Nebraska would be different than moving the school to Iowa, and both would have different impacts than closing the school.

Clearly, the NSD is primarily a nonbasic industry at the state level. For the Omaha area, however, the school might be considered a basic industry, one that attracts tax revenues and converts them into incomes for area residents. Although a portion of the taxes paid by Omahans support the NSD, if it were located elsewhere in Nebraska, these tax dollars would leave the Omaha area.

Direct Impacts of the School

The direct impacts of the Nebraska School for the Deaf originate from the day-to-day operation of the institution. It provides employment opportunities and incomes and generates sales activities. These direct impacts then stimulate additional economic activities in the Omaha area.

Enrollment and Education

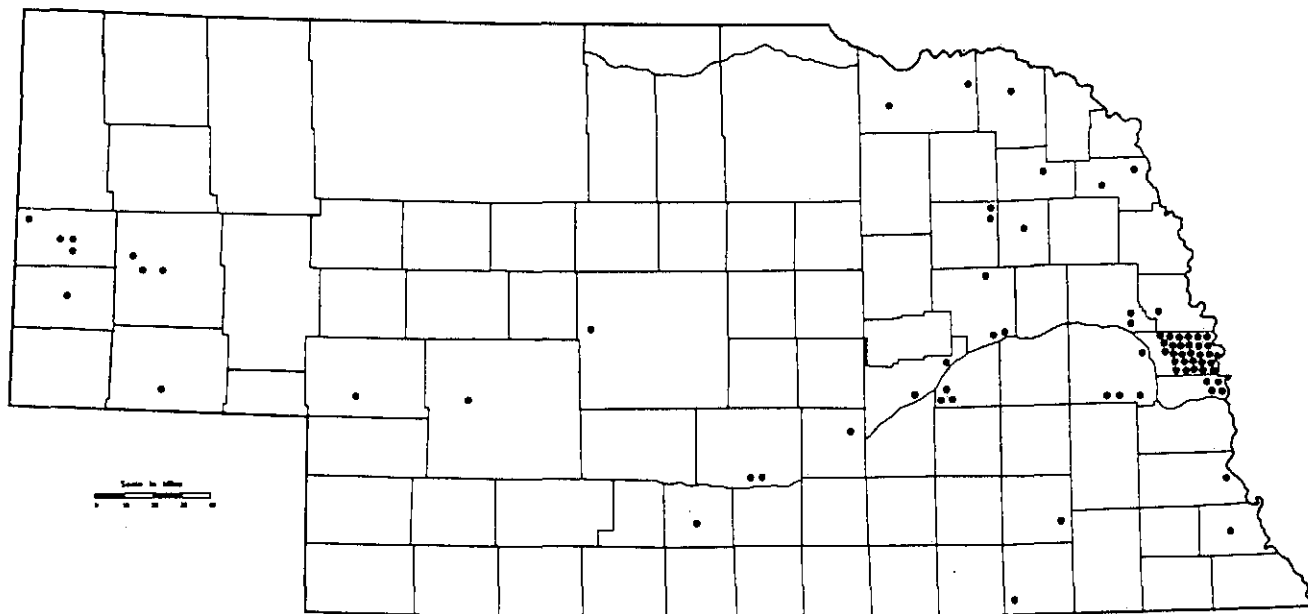
Because the major function of the institution is educational, it is important to review enrollment. Currently, the NSD serves 75 students (table 1). Most of these students are residential, with 47 students (62.7 percent) residing on campus. Among the day students, several are served by an outreach teacher in Scottsbluff. During the past few years, enrollment at the NSD has declined steadily. The school served 180 students at its peak in the late 1970s.

The characteristics of students at the NSD have changed; the number of students with conditions in addition to hearing impairment has increased. Table 1 shows that most students come from outside the Omaha area (56 percent). The Omaha area provides 33 students (44 percent of the school's enrollment). The city of Omaha accounts for 26 students, while 7 come from elsewhere in the area. Figure 1 shows the home counties of the students, and illustrates their dispersion throughout Nebraska, with a concentration of students coming from the Omaha area.

Table 1
Enrollment at the Nebraska School for the Deaf, Fall 1987

Students	Number	Percent
Type:		
Residential	47	62.7
Day	28	37.3
Total	75	100.0
Home address:		
Omaha	26	34.7
Remainder of Omaha area	7	9.3
Remainder of Nebraska	42	56.0
Total	75	100.0

Figure 1
County of Origin for Students Enrolled at the
Nebraska School for the Deaf, Fall 1987



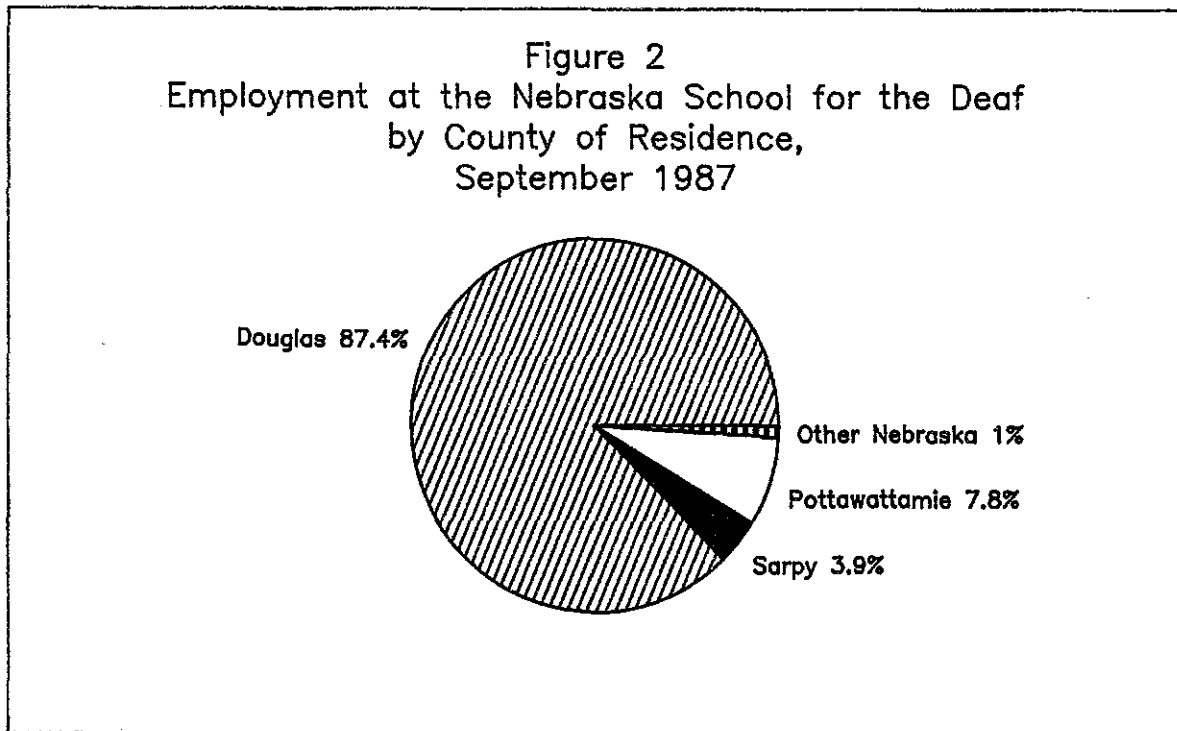
Employment

The Nebraska School for the Deaf is a major employer in Omaha, employing 103 persons in September 1987 (table 2). These 103 employees represent a full-time equivalent employment of 99.4 persons. Figure 2

Table 2
Employment at the Nebraska School for the Deaf,
by County of Residence, September 1987

County of residence	Number	Employees	
		Percent	FTE ¹
Douglas	90	87.4	87.6
Sarpy	4	3.9	2.8
Pottawattamie	8	7.8	8.0
Other Nebraska	1	1.0	1.0
Total	103	100.0	99.4

¹FTE—Full-time equivalent employees.



illustrates that most of these employees live in the Omaha area, with 87.4 percent residing in Douglas County and 3.9 percent residing in Sarpy County. One percent of the school's employees live elsewhere in Nebraska, and 7.8 percent live in Iowa.

The NSD ranks among Omaha's largest employers. According to *County Business Patterns*, less than 3 percent of Douglas and Sarpy Counties businesses employed 100 or more workers in 1985.¹

Funding Sources and Expenditures

The NSD is funded by a variety of sources. It receives income from the state general fund, tuition and other cash funds, and the federal government. Total funding in 1987-88 amounts to more than \$3 million (table 3). Table 3 and figure 3 show that the largest source of funds for the NSD is the state general fund. The state provides \$2.6 million, accounting for 84.8 percent of the school's budget.

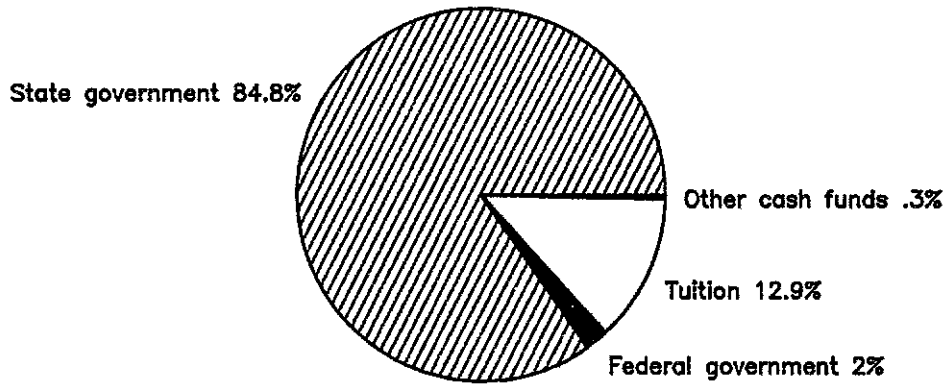
Cash funds are another important source of funding, amounting to \$0.4 million (13.2 percent). Almost all of the cash funds come from tuition.

The final funding source is the federal government. In 1987-88, federal funds are expected to total 2 percent of funding.

Table 3
Expenditures and Funding Sources for the
Nebraska School for the Deaf,
FY 1987-88

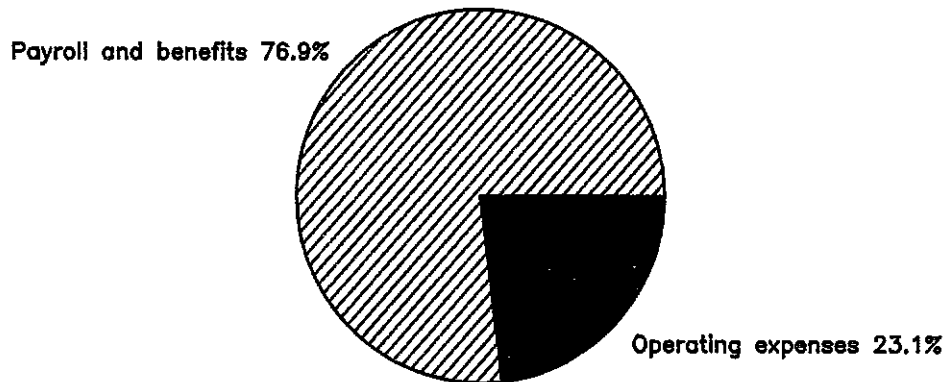
Item	Amount	Percent
Expenditures:		
Personnel services	\$2,332,927	76.9
Operating expenses	699,838	23.1
Total	\$3,032,765	100.0
Funding sources:		
State government	\$2,571,620	84.8
Federal government	61,795	2.0
Cash	399,350	13.2
Tuition	390,099	12.9
Other	9,251	.3
Total	\$3,032,765	100.0

Figure 3
Funding Sources for the
Nebraska School for the Deaf,
FY 1987-88



Personnel services are the largest expense for the NSD, accounting for 76.9 percent of total budgeted expenditures for 1987-88 (table 3 and figure 4). Of the more than \$2.3 million in personnel expenditures, most consisted of salaries and wages (\$2.2 million), and benefits accounted for the remainder.

Figure 4
Expenditures of the
Nebraska School for the Deaf,
FY 1987-88



Operating expenses, \$0.7 million, accounted for 23.1 percent of expenditures. Operating expenses indirectly add employment and income to the Omaha area because of goods and services purchased by the NSD. For example, the NSD contracts with Boys Town for counseling services, which adds to Boys Town employment but is not reflected directly in NSD's employment.

Total Impact

Previous sections examined the direct effects of the NSD on the Omaha and state economies, based on administrative records. In this section, the multiplier effects (indirect and induced) will be estimated for the Omaha area. Based on the earlier discussion of basic and nonbasic industries, the reader should recall that the economic impacts of operating a school for the deaf benefit the community in which it is located with little impact on the state as a whole. Although the impacts are estimated for Omaha, the process and impacts would be similar regardless of location within Nebraska.

Because Omaha is located on the Iowa border, economic activity flows between the two states. A change in activity in Nebraska will affect Iowa, and a change in activity in Iowa will affect Nebraska. In fact, the federal government has defined the Omaha Metropolitan Statistical Area (MSA) to include the Nebraska counties of Douglas, Sarpy, and Washington, as well as Pottawattamie County in Iowa.

However, we decided to exclude the Iowa portion of the Omaha MSA when calculating the total impact of the NSD on Omaha's economy. Pottawattamie County was excluded because the tax revenues used to fund the school originate primarily from Nebraska. As a result, references to the "Omaha area" include only the Nebraska portion of the Omaha MSA.

Because smaller areas have more leakages outside their areas, the multipliers for Omaha are smaller than multipliers for the entire state. They also are larger than the multipliers for other communities in the state. Multipliers vary over time and cannot be measured directly. In this study, it is assumed that Omaha's employment multiplier is 1.7, and its wage and salary multiplier is 2.0.

Table 4 indicates that 94 (91.3 percent) of the NSD's employees reside in the Omaha area. Additionally, it is estimated that the NSD's operating expenses result in indirect employment of 13 persons. Using a multiplier of 1.7, these 107 employees (direct and indirect) will generate employment for another 75 Nebraskans. The total employment impact, therefore, is 182 persons.

Table 4
 Impacts of the Nebraska School for the Deaf
 on the Omaha Economy,
 FY 1987-88

Type of impact	Employees (number)	Wages and salaries (millions)	Expenditures (millions)
Direct	94	\$1.991	\$1.692
Indirect	13	.260	.221
Induced	75	2.251	1.913
Total	182	\$4.502	3.826

Adjusting for wages and salaries paid to Iowans, the NSD will pay Nebraskans wages and salaries totaling nearly \$2 million in 1987-88. Because of the impact of operating expenditures, another \$0.26 million in wages and salaries will be generated indirectly as a result of NSD's activities. Eventually, more wages and salaries will be induced, and the total wage and salary impact will be \$4.5 million (table 4).

To estimate the spending impacts, it is assumed that 85 percent of the total wages and salaries are spent.² Table 4 shows that \$4.5 million in wages and salaries will generate expenditures amounting to \$3.8 million.

The NSD also has an additional impact on the Omaha area that is not included. Parents, family, and friends come to Omaha to visit residential students. They stay in motels, eat in restaurants, and otherwise spend money in Omaha. While this may be a spending impact to consider, it cannot be measured without additional research.

Taxes

Although the Nebraska School for the Deaf is tax exempt, many of the activities and expenditures related to its operation generate tax revenues. For example, wages and salaries are taxed by the state. Retail purchases by employees generate sales tax revenues for both the state and the city, and employees pay property taxes (either directly for homeowners or indirectly for renters).

The NSD will have an effect on some tax categories, but only the major taxes are included in this study.

Table 5 shows the multiple impacts discussed in the previous section. Based on wages, salaries, and expenditures, the data suggest that the NSD

will generate \$179,700 in major state tax receipts, \$94,000 in income taxes, and \$85,700 in sales tax receipts. Local governments will collect \$130,100 in property taxes during 1987-88. Sales tax collections for cities are estimated to be \$32,100.

Combining the various tax sources, it appears that the NSD will have a tax impact of \$273,700 for the state government and \$162,200 for local governments.

Table 5
State and Local Taxes Generated by the
Nebraska School for the Deaf,
FY 1987-88

Type of tax	Amount
State:	
Taxable spending resulting from NSD's operation	\$2,143,000
State sales tax rate	4.0 percent
Total state sales tax receipts	\$85,700
Wages and salaries resulting from NSD's operation	\$4,502,000
Total state income tax receipts	\$94,000
Local:	
Taxable spending resulting from NSD's operation	\$2,143,000
Omaha sales tax rate	1.5 percent
Total local sales tax receipts	\$32,100
Housing expenditures resulting from NSD's operation	\$650,500
Percent of housing expenditures paid for property taxes	20.0 percent
Total local property tax receipts	\$130,100

Economic Impacts of a Hypothetical Merger With Iowa

The economic effects of merging the Nebraska School for the Deaf with the Iowa School for the Deaf (ISD) are complex and difficult to measure and depend on the amount of funding and students transferred. The differences in revenues and expenditures can be estimated relatively easily, but the differences in jobs, wages, and salaries are much less certain. When multiplier effects are considered, the economic effects of a hypothetical merger become even cloudier.

To complicate matters, the ISD is located in Council Bluffs (Pottawattamie County). The effects of the merger, therefore, will be different than if the ISD were located in eastern Iowa. Obviously, any shift

in funds to the ISD, will have some benefits on the Nebraska portion of the Omaha MSA. No comprehensive study examines the flow of goods and services between the Nebraska and Iowa portions of the Omaha MSA. The 1980 census, however, measured the exchange of workers between the areas. In 1980, 13 percent of the persons who worked in Pottawattamie County lived in the Nebraska portion of the Omaha MSA. On the other hand, 6 percent of the persons who worked in the Nebraska portion of the Omaha MSA lived in Pottawattamie County.³

We were given two scenarios to consider for the transfer of the NSD. One scenario assumes that two-thirds of the NSD's budget will be transferred, and the remainder will be returned to the state budget. The other scenario also assumes that two-thirds of NSD's budget will be transferred to ISD, but the remainder will be used to fund several types of services at the former NSD site. In both scenarios, all NSD students will be served by the merged program.

Regardless of the scenario, the merger will have both benefits and costs associated with it. The following section present estimates of some of the economic effects of the merger. It should be remembered that these are only estimates, and are based on a number of assumptions described in more detail in the appendix. Although the hypothetical merger would begin in the 1989-90 school year, we only have current budget information. Therefore, the analysis of the mergers assumes 1987-88 conditions.

Alternative Scenarios

The most easily measured effect of the hypothetical merger under the first scenario is a savings of \$1.0 million, assuming two-thirds of the \$3.0 million budget will be transferred to the ISD. If all the tuition and federal funds transfer, the entire \$1.0 million savings will go to the state budget. It is likely that this \$1.0 million will be reallocated to other state agencies rather than resulting in an adjustment in tax rates. In reality, therefore, the two scenarios will have similar impacts. The major difference is the part of the state in which the savings are spent. In the first scenario they could be spent anywhere, but in the second they will be spent in Omaha.

Estimating economic impacts other than direct budget impacts associated with the hypothetical merger becomes much more uncertain. Not only is it unclear how many jobs will be added directly at the ISD, it is also unclear how much of the transfer will go to additional wages and salaries, operating expenses, or offsetting existing Iowa costs. Earlier we said that it made little difference to Nebraska as a whole where the NSD was located as long as it was somewhere in Nebraska. If funds are transferred to Iowa, however,

there is a difference. Tax dollars are leaving the state. Because the ISD is located in the Omaha MSA, some of them will return.

To assist in estimating the total impacts of the transfer, we used recently completed input-output tables for the Omaha MSA.⁴ These input-output tables allowed us to estimate the impact a changing government budget would have on employment and incomes. The results, summarized in table 6, illustrate the total (direct and indirect) impacts of the changes; they do not show the direct and indirect components separately.

Table 6 shows that in the Omaha MSA, government expenditures of \$2.0 million typically result in 63 jobs (direct and indirect) and wages and salaries of \$1.7 million. If 20 percent carries over to the Nebraska side of the Missouri River, Nebraska will retain 13 jobs and wages and salaries of \$0.3 million as a result of the transfer of \$2.0 million to ISD.

The \$1.0 million savings also represents jobs and incomes. Again, using the input-output tables, if the \$1.0 million in savings is spent in other state operations, 76 jobs will be generated in Nebraska along with incomes of \$1.5 million. If additional services are added to the former NSD site, these impacts will go to Omaha. Otherwise, they will be spread throughout the state.

Table 6
Summary of Gross Impacts of a Hypothetical Merger
of the Nebraska School for the Deaf and the
Iowa School for the Deaf

Impact	Employees (number)	Wages and salaries (millions)	Expenditures (millions)
Transfer \$2 million to ISD:			
Total	63	\$1.698	\$1.444
Nebraska	13	.340	.289
Iowa	50	1.358	1.155
Return \$1 million to the state budget:			
Nebraska/Omaha	76	\$1.504	\$1.279

The net economic impact of the hypothetical merger, therefore, is the difference between the total jobs and income before the merger and after the merger. Table 7 summarizes the results from tables 4 and 6 and shows that Nebraska will lose 93 jobs and wages and salaries totaling \$2.7 million. All of the difference will come from the Nebraska portion of the Omaha MSA. In addition, if the \$1.0 million in saving is spent for state operations outside Omaha, table 6 shows the Omaha area will lose another 76 jobs and incomes of \$1.5 million because they will go elsewhere in Nebraska.

Table 7
Summary of Net Impacts on Nebraska and Omaha
of a Hypothetical Merger of the Nebraska School for the Deaf
and the Iowa School for the Deaf

Impact	Employees (number)	Wages and salaries (millions)	Expenditures (millions)
Current operation	182	\$4.502	\$3.826
Saving	76	1.504	1.288
Transfer	13	.340	.289
Difference	93	2.658	2.259

Summary

The Nebraska School for the Deaf is an important source of jobs, incomes, and expenditures for the Omaha area. The positive economic impacts of any state-funded facility primarily accrue to the community in which it is located. The economic impact to the state is negligible as one area gains and the others lose. When tax dollars leave the state, however, it is a different matter. Nebraska will lose potential jobs, incomes, and expenditures.

This report reviews economic impacts of the NSD as it currently exists to serve as a base of comparison following a hypothetical merger with the Iowa School for the Deaf. It is beyond the scope of this report to provide a precise estimate of the economic impact of the merger. There simply are too many unknowns. It is clear that the state government will save money as a result of the merger. It is also equally clear that the state (particularly the Omaha area) will lose jobs, incomes, and expenditures.

Given the assumptions used in this report and the two scenarios, some of the likely economic effects are shown in table 7. No attempt is made to judge the efficiency of the NSD or the quality of its service. Similarly, no attempt is made to evaluate alternatives other than merging with the ISD.

APPENDIX

Background Data and Assumptions

1. The average wage or salary per employee is \$21,242 ($\$2,1879,281/103$).
2. Wages and salaries account for 85 percent of expenditures. Taxable spending is 56 percent of total spending, and housing expenditures account for 17 percent of total spending.⁵
3. Eighty percent of the state's population aged 25-64 is married, and the average size of a married couple's family is 3.03 persons.⁶
4. Based on an income of \$21,242 and using standard deductions, the federal income tax for single₇ taxpayers is \$3,000 and \$2,000 for married taxpayers with one child.
5. The state income tax for 1987-88 will average 20 percent of the federal tax liability.
6. The general sales tax rate in 1987-88 will be 4 percent for the state and 1.5 percent for Omaha.
7. The employment multiplier for Omaha is 1.7, while the wage and salary multiplier is 2.0.
8. Thirteen percent of the persons who work in Pottawattamie County live in the Nebraska portion of the Omaha MSA, and 6 percent of the persons who work in the Nebraska portion of the Omaha MSA live in Pottawattamie County.⁸
9. In the Omaha MSA, government expenditures to operate a facility like the NSD or the ISD typically generate 30.78 jobs for every \$1⁹ million of expenditures and incomes of \$.84 for each \$1 of expenditures.
10. In the Omaha MSA, government expenditures for operations that do not have the auxiliary services like the NSD and ISD typically generate 74.9 jobs for every \$1 million of expenditures and incomes of \$1.29 for every \$1 of expenditures.¹⁰
11. Twenty percent of the economic activity originating in Pottawattamie County will carry over to the Nebraska portion of the Omaha MSA.

Endnotes

1. U.S. Department of Commerce, Bureau of the Census. *County Business Patterns, 1985. Nebraska*. U.S. Government Printing Office, Washington, DC, 1987.
2. U.S. Department of Labor, Bureau of Labor Statistics. *News*, USDL: 86-451. Washington, DC, November 20, 1987.
3. U.S. Department of Commerce, Bureau of the Census. "Place of Work Destinations: 1980," unpublished.
4. William J. Corcoran. *Omaha Metropolitan Statistical Area Input-Output Tables and Multipliers: A Users Manual*. Center for Applied Urban Research, University of Nebraska at Omaha, December 1987.
5. See note 2.
6. U.S. Department of Commerce, Bureau of the Census. *Census of Population, 1980*, Chapter B-Nebraska (General Characteristics). U.S. Government Printing Office, Washington, DC, July 1982.
7. U.S. Department of Treasury, Internal Revenue Service. *1986 Instructions for Preparing Form 1040*. Washington, DC, 1986.
8. See note 3.
9. See note 4.
10. See note 4.