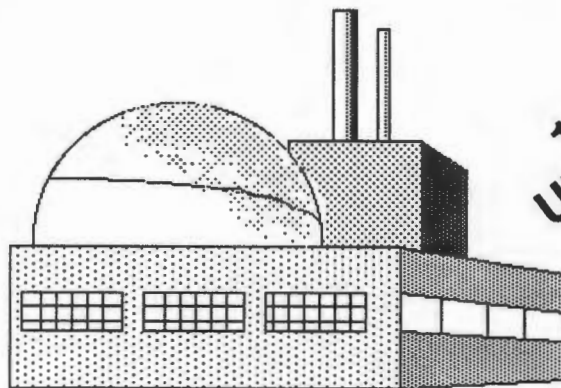




SOCIO-ECONOMIC IMPACTS OF THE IDAHO NATIONAL ENGINEERING LABORATORY



**1989
UPDATE!**

Public Reading Room
U. S. Department of Energy
Idaho Operations Office

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Pocatello, Idaho
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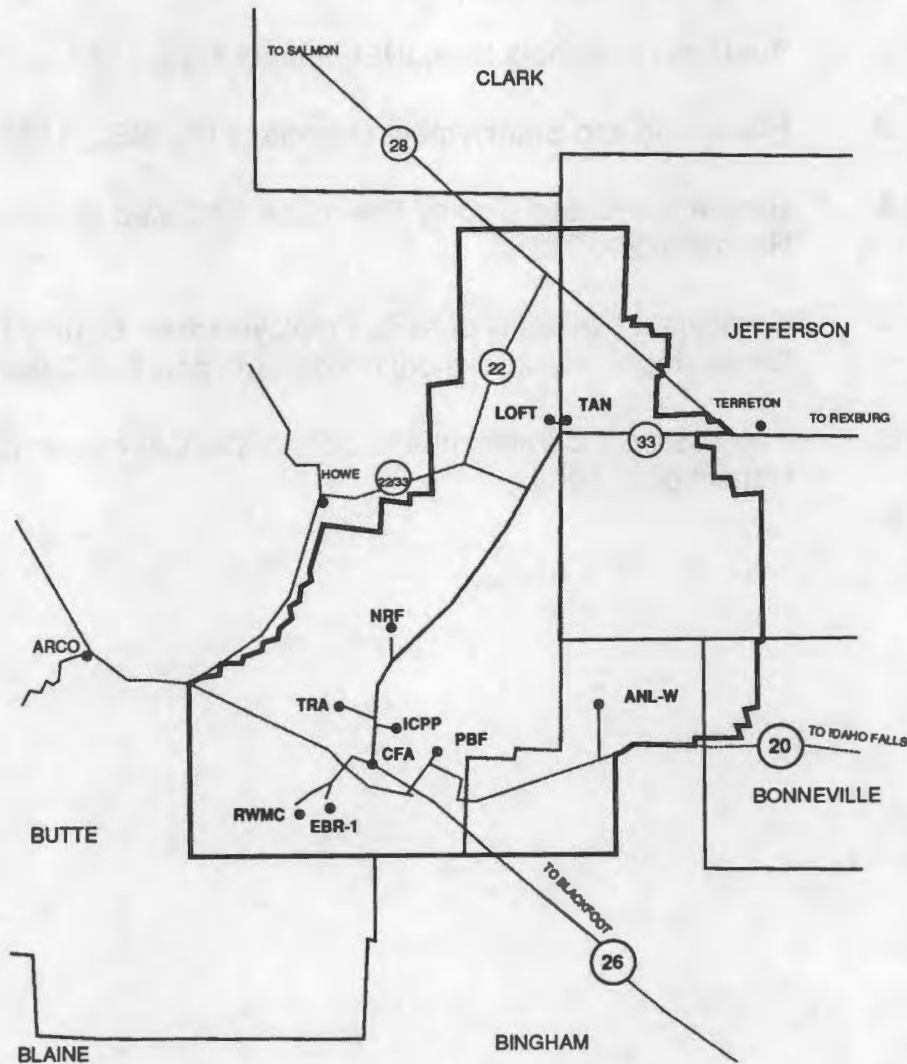
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IDAHO NATIONAL ENGINEERING LABORATORY



ANL-W	Argonne National Laboratory - West Area (Argonne)
CFA	Central Facilities Area - (EG&G)
ICPP	Idaho Chemical Processing Plant - (WINCO)
LOFT	Loss of Fluids Test Facility - (EG&G, Rockwell)
NRF	Naval Reactors Facility - (Westinghouse Elec. Corp.)
PBF	Power Burst Facility - (EG&G)
RWMC	Radioactive Waste Management Complex - (EG&G)
TAN	Test Area North - (EG&G)
TRA	Test Reactor Area - (EG&G)

EXECUTIVE SUMMARY

Highlights of the 1989 update include the following:

- The 10,252 employees of the INEL had more than \$14.5 million in State Income Taxes withheld from their wages in 1988. They paid an estimated \$2.8 million in local property taxes, and \$4.8 million in school taxes during the same year.
- Site employers contribute more than \$400 million in wages, salaries, and employee benefits; as well as more than \$3 million in direct contributions to area colleges, universities, and community groups.
- The local impact of INEL activity is concentrated in Bonneville County and the City of Idaho Falls, where two-thirds of all site employees reside.
- Measurable shifts in the residential patterns of INEL employees have occurred between 1985 and 1987, with a slight decline in number of Idaho Falls residents accompanied by gains for the smaller cities including Chubbuck, Shelley, and Rigby.
- Site employers paid more than \$2.7 million in sales tax on the equipment and other products that they purchased during 1988, with more than \$35 million in site procurement going to Idaho firms.
- Noneconomic impacts of the INEL are difficult to quantify but are nonetheless significant. Employee involvement and participation in local community life is reciprocated by a general acceptance and even enthusiasm for the INEL and its activities on the part of local residents.

Preface to the 1989 Update

The Center for Business Research and Services at Idaho State University has conducted empirical assessments of the economic impact of the Idaho National Engineering Laboratory at approximately two year intervals beginning in 1982. The most recent of those studies was released in May of 1988, and focuses on economic impacts occurring between the years 1985 and 1987. The information contained in the following pages is meant as an update to that 1988 report, and does not constitute a thorough revision. The next revision of the series is scheduled for the summer of 1990, and will focus on economic impacts that will have taken place between 1985 and 1989.

The biennial revisions rely on data from three different sources:

- the Personnel Survey conducted by the D.O.E. every two years.
- revenue and expenditure data for counties and cities falling within the impact area.
- selected employment information reported to the D.O.E. by employers operating on the INEL site.

Each revision of the report relies on new and updated data from each of the above three sources.

An updated report, which is reflected on the following pages, is different from a revision in that an update contains no new information on the residential patterns and household composition of INEL employees. The updated report utilizes the same Personnel Survey (1987 version) that formed the basis for the 1988 revision. This means that the update contains no new estimates of the geographic distribution of INEL employees within each of the counties and cities of the primary impact area.

Instead, the update assumes that the residential and household patterns obtained from the 1987 Personnel Survey apply to the year 1988. The impact of INEL employment for the year 1988 is then obtained by utilizing county-level revenue and expenditure data that have recently become available for the fiscal year 1988, and then applying base figures that reflect total site employment for the month of December, 1988.

The methodology utilized in the update is the same as that developed for the 1987 revision. Readers are encouraged to refer to the Methodological Appendix of the earlier report if they are interested in exploring that area in greater detail.

The 1989 update contains Data Sheets that reflect changes that have occurred between 1985 and 1988 in the demographic and economic characteristics of the seven counties of the primary impact area. Portions of the data sheets that pertain to the cities of a particular county have also been updated, using fiscal data pertaining to the year 1988. One modification has been made in the way sales tax data have been handled for the cities. The city portion of the DataSheets now report two amounts of Idaho Sales Tax actually returned to the cities. Revenue Sharing, which was once a

Federal program, is now funded through distribution of the Idaho Sales Tax. Six summary tables from the 1987 report have been updated to reflect the availability of 1988 information.

In addition to updating the Data Appendices and selected tables, this report also includes an interpretive essay on two topics of interest and concern to readers and users of the 1987 report. A more thorough discussion of non economic impacts of INEL employment has been included, as has a general discussion of economic impact analysis and the construction of multipliers.

The authors acknowledge the assistance of persons on the staff of the Department of Energy who provided site employer information for the year 1988. The collection and processing of county fiscal data was managed by Kenny Bossingham, a graduate student in Business Administration at Idaho State University. Production of the final report was in the capable hands of Debbie Richardson, Technical Typist for the College of Business at I.S.U.

While every effort has been made to insure data accuracy and correctness, oversights and mistakes do occur. The authors accept sole responsibility for any errors that have been retained in the report, and welcome comments or suggestions regarding improvement of subsequent revisions.

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August 15, 1989

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An Interpretive Essay:

Multipliers and Non Economic Impacts

Because the fields of Economics and Regional Planning are constantly evolving, disagreements frequently arise among practitioners regarding the selection and proper use of particular techniques. Given the significant economic activity represented by the Idaho National Engineering Laboratory, it follows that different methodological approaches will yield different estimates of the site's impact. Two areas of debate that have arisen involve the methodology underlying economic impact analysis in general, and the challenge to measure the considerable non economic impacts that site employees and their dependents have on the culture and community life of eastern Idaho. The purpose of this essay is to improve understanding of economic impact analysis among the business and government leaders who are consumers and interpreters of the data contained in this report. Our goal is to introduce the assumptions that are common to all economic impact analyses, and to extend that logic to a framework for the future assessment of the non economic impacts of site activity. This essay will hopefully promote a continued discussion of the INEL and its significant impact on the people and economy of eastern Idaho.

The most commonly used method for measuring regional economic impacts is based on the "circular flow" model of local economies (Tiebout, 1962; Hustedde et. al., 1984). This model states that a local economy is supported by the exchange of goods and services with other local economies. All economic activity can be classified as either export or non export to a given area on the basis of its role in this process of exchange. If a given industry produces more of a product or service than the local economy can absorb, then the excess is exported and the industry is considered an export or "base" industry to that local economy. The initial classification of an economic activity as either export or non export represents the first measurement problem that needs to be surmounted if an economic impact analysis is to proceed. In terms of the products, processes, and services produced at the INEL, there can be little doubt that activity is export to the Eastern Idaho economy.

Continuing with the logic underlying economic base theory, a given region's economy expands when its businesses increase the amount of goods and services they sell to other regions (export expansion) and when they increase the amount of goods and services they purchase from within the region (import substitution). When either of these positive changes occur in a local economy, something called a direct effect takes place. Direct effects can also be negative, as when the change in the economy involves a decline in sales to outside of the region or a reduction in the purchases of locally made goods. A direct effect on the economy takes place only through export expansion and import substitution.

The so called "expansion" of non export industries net to zero when the negative effect of their increased sales on competitors' sales is taken into account, or when the negative effect on their competitors of hiring new workers is taken into account.

Based on data included in this 1988 updated report, the INEL may be considered to have led to some export contraction (as measured by the slight decline in the INEL labor force) as well as having stimulated an increase in the region's import substitution (through an increase in procurement activity within Idaho). The precise measurement of these countervailing efforts is subject to alternative approaches and techniques.

The 1987 revision of this report assumes that 100% of site employment is export to the state of Idaho, and that INEL employees residing in a particular county are export to that county. A modification to this assumption was made in the case of Bonneville County, where a significant amount of residential INEL employment is in the construction and service industries, and thus initially defined as non export to that economy. A similar assumption could have been made for the type of contribution made by Butte County residents who are working in service jobs that are located within their county of residence. This assumption was not pursued because of the small numbers involved and by the level of occupational information made available by the D.O.E. As a result, the impact of site employment derived for Butte County in this report is higher than it would be if some portions of the workers involved were defined as non export to the county. All of these assumptions are also subject to debate and continued discussion.

These elementary distinctions mean that analysts need to be very careful before attributing a direct economic benefit to the multi-million dollar price tag associated with any particular INEL activity. For example, a given project might employ 400 construction workers. Is this to be considered a direct employment effect of 400 jobs? It depends on whether the workers hired already reside in the area (and thus would be contributing to the local economy in the absence of the INEL employment).

At this point we can introduce the basic equation underlying economic impact analysis:

$$\text{TOTAL IMPACT} = \text{DIRECT EFFECTS} + \text{INDIRECT EFFECTS}$$

The dollars represented by carefully measured direct effects continue to cycle their way through a local economy by way of linkages and responding. At each successive round of responding, however, smaller and smaller portions of the original amount remain in the area economy due to the inevitable leakages that

underlie the very basis of the theory. If you were to follow one dollar that was introduced into the economy in the form of wages, for example, maybe forty cents would remain as discretionary income, with the remaining 60¢ leaving the area in the form of taxes and outside purchases. Of the former amount, maybe fifteen cents would be spent locally. Of the original fifteen cents, perhaps three cents would be spent on local purchases by the business on whom the fifteen cents was spent initially. And so on until the dollar is exhausted. The sum of all this responding is referred to as the indirect effect of some known and measured direct effect.

The next equation is so simple that it is often overlooked:

$$\text{MULTIPLIER} = \text{TOTAL IMPACT} / \text{DIRECT EFFECT}$$

For example, 100 new production jobs at a new manufacturing plant (a true direct effect) might lead to 60 more jobs in the local service sector (the indirect effect). In this case the total impact would be 160 jobs, and the employment multiplier would be 1.6.

Three questions that always have to be answered before an impact analysis can proceed are:

First, the geographic basis for the analysis needs to be clearly defined and delimited. In studying the INEL and its impact, we need to establish at the outset whether we want to estimate a statewide impact or one affecting a smaller area, such as Bonneville County. The multipliers for the state would be larger than the multipliers for the separate counties simply because the leakages are greater as the economic area becomes smaller. This study utilizes multipliers at three different levels of focus in order to maximize application and use of the data--the state as a whole, the seven county area of primary economic impact, and each of the seven counties of the primary impact area.

Second, the time basis for a particular study needs to be determined. How long will it take for the total impact to occur? How long will it take for the direct effect to occur? More importantly, multipliers change over time as technology and other societal changes lead to modifications in the patterns of trade and leakage that characterize an area. Most studies assume that long run multipliers are being used, but few can estimate how many years it will take for the indirect effects to be felt. Our study assumes that the total impacts are long range and therefore multi-year in duration.

Third, the measurement basis for the selected economic event or activity needs to be assessed. In actuality this necessitates two measurement bases: one for the direct effects and one for the total impact. Specifically, economic ac-

tivity can usually be quantified in three different ways: jobs, income, or sales/output. In selecting a measurement basis for determining the direct effects of the INEL, we can focus on the 10,252 jobs, the \$336 million in income earned, or the unspecified dollar amount that reflects the value of the goods and services produced there. The measurement basis for total impact also needs to be assessed. For example, we might decide to measure the effect of 200 new jobs (employment basis of the direct effect) on the total number of jobs in the area (employment basis for the total impact). Alternatively, one could look at the total impact on incomes of \$336 million in INEL wages, or any other combination of direct and total effects. Parallel pairs of measurement bases are normally used, yielding the three most common types of multipliers — employment or job multipliers, income multipliers, and sales or output multipliers. Our study utilizes employment multipliers because they are the only ones that can be computed directly from local data.

As a result of the previous discussion, it is apparent that two measurement problems present themselves whenever you conduct an economic impact analysis:

- 1) How do you determine what amount of some general economic activity is export to a given area and thus constitutes a direct effect? And,
- 2) How do you determine the multiplier for the indirect effect?

If either or both of the above measures is unrealistically large, then the resulting total impact of the activity will be exaggerated. Unfortunately, it seems that the bigger a multiplier is, the more often it is quoted. And the larger the initial amount of money representing an infusion into the economy, the greater the likelihood that the full 100% of that amount will be considered a direct effect by policy makers. In order to be considered a direct effect, the activity must represent either export expansion (sales outside of the region) or import substitution (purchases made within the region).

The employment multipliers derived for the present study have been constructed directly from Location Quotient Analyses of the economies of the state, the primary impact area, and the constituent counties (see Methodological Appendix, 1987 report). Location quotient analysis is an accepted and straightforward way of estimating multipliers, but it is by no means the only available strategy. The method tends to overstate the multiplier by as much as 20%, according to some studies (Bourque, 1988), but has the advantage of being less costly and requiring the least amount of primary information. With this approach one assumes that a product is imported only when all the local production of that product is used up. Any surplus production is exported. As a result, location quotient analysis understates the leakages caused by imports, and, consequently, over-

states the multipliers. The method is, nevertheless, less costly than a survey-based econometric method, and more up to date than available input-output models based on aggregated data.

So far we have attempted to explain the fundamentals of economic base theory, and in so doing have asserted that the measurement basis for total economic impact is usually jobs, income, or sales/output. We have developed the idea that the measurement basis for any direct effect is usually the same as that for the anticipated total impact. The whole idea behind the measurement of "non economic impacts" may simply be the broadening of the two measurement bases to include quality of life dimensions that are at once extremely significant and difficult to quantify. Future revisions of this report will make an effort to quantify non economic impacts through an extension of economic base theory. In this way the report series will continue to evolve in scope and methodology.

For example, it ought to be theoretically possible to assess the total impact that the direct addition of 100 hours of community or civic involvement has on a given community's quality of life. By using a control group of area citizens to assess per household contributions, measurement of the significance of INEL related activity of this kind could easily be ascertained from a revised D.O.E. Personnel Survey.

Regardless of the methodology selected, it is important that any economic impact analysis clearly state its assumptions and underlying model. In that way both critics and supporters of the approach will stand a better chance of improving upon the study at hand.

DATA SHEETS

The following pages contain convenient summaries of the Idaho National Engineering Laboratory's impact on the state of Idaho, the seven county primary impact area, and on each of the seven counties within that area. County summaries are prepared in such a way that comparisons across several counties can easily be made.

Each county summary includes 1987 population and employment impact information. The number of INEL employees who are residents of a particular county is expressed first as a percent of the county's total population and employment, and secondly as a percent of total INEL employees and their families. The impact of INEL activities is then compared over time, with a third column of data indicating the percentage change in a particular factor between 1985 and 1988.

Similar data are provided for the major cities in each county. County and city revenues that are residually based (i.e., property taxes and various fees) are reported both as total collections and in terms of the estimated share paid by INEL employees residing within the particular county or city. Finally, the summaries include an estimate of the amount and proportion of school taxes paid by INEL employees to the public school districts within the impacted area.



IMPACTS

1989 UPDATE

IDAHO

SUMMARY

INEL employment decreased slightly from 10,620 to 10,252 between 1985 and 1988. The total number of INEL dependent jobs remained about the same. INEL employees contributed 6.2% of all state income tax withheld in 1988, while comprising only 2.3% of state employment. They are also estimated to contribute more than their share of property taxes (3.0%) and school taxes (3.0%). Only \$175,609 in Unemployment Insurance benefits were claimed by INEL employees during 1988, constituting 0.3% of claims made statewide. INEL employers contributed more than \$3.0 million to the State Unemployment Insurance fund in 1988.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
State Population	1,004,000	1,019,200*	1.5
Average INEL Family Size	3.37	3.49**	3.6
Total INEL Family Members	35,830	35,831	-0-
INEL Families as % of Total State Population	3.6%	3.5%	-2.8

*Woods and Poole Economics, Inc., 1989.

**The slight increase in INEL family size noted for 1987 may be attributed to a sampling bias caused by the low participation rate of the nearly 1,200 Navy personnel in the 1987 personnel survey.

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total State Employment:</u>	405,257	447,000*	10.3
<u>INEL Employment:</u>			
Number of Employees	10,620	10,252	-3.5
% of Total State Employment	2.6%	2.3%	-11.5
<u>INEL Dependent Jobs:</u>			
Number of Jobs	17,470	17,613	0.8
% of State Employment	4.3%	3.9%	-9.3

*Includes 346,077 covered employees and 100,923 uncovered workers.

PUBLIC SECTOR 1988

	<u>Idaho FY 1988</u>	<u>INEL</u>	<u>% INEL</u>
County Property Taxes	\$92,513,648	\$2,758,036	3.0
School Taxes	162,872,104	4,806,389	3.0
State Income Tax (withheld)	235,236,120	14,546,072	6.2
State Unemployment Insurance Payments	90,571,346	3,057,027	3.4
Unemployment Insurance Claims Paid	63,658,684	175,609	0.3
Sales Tax Contributions	132,045,679	7,625,770	6.0

SCHOOL DISTRICTS 1988

	<u>1987-88</u>
Total Revenue from Taxes (all districts)	\$162,872,104
Total Pupils	199,563
INEL Dependent Pupils	7,784
INEL Proportion of Pupils	3.9%

OTHER BENEFITS TO IDAHO

Salaries and Wages

Amount in 1988

State Wages (Total)	\$5,816,990,246
State Wages (Covered emp. only)	4,808,495,000
INEL Total Wages	335,937,000
INEL % of Covered wages	6.9

	<u>Paid In 1986</u>	<u>1986 Amount In 1988 \$</u>	<u>Paid In 1988</u>	<u>% Change</u>
Fringe Benefits for INEL Employees	\$45,919,000	\$49,564,030	\$63,217,000	27.5
Medical and Dental Claims	10,362,136	11,184,678	14,133,321	26.4

<u>Procurement Activity</u>	<u>Amount In 1980</u>	<u>1980 Amount In 1988 \$</u>	<u>Amount In 1988</u>	<u>% Change</u>
Awarded In Idaho	\$16,532,000	\$23,734,655	\$35,500,000	49.6
Total Awards	73,800,000	105,953,316	108,300,000	2.2
% Awarded In Idaho	22.4	22.4	32.8	46.4

	<u>Amount In 1986</u>	<u>1986 Amount In 1988 \$</u>	<u>Amount In 1988</u>	<u>% Change</u>
Subcontracts to Idaho Schools and Universities	\$2,142,058	\$2,312,094	\$3,135,338	35.6

	<u>Paid In 1985</u>	<u>1985 Amount In 1988 \$</u>	<u>Amount In 1988</u>	<u>% Change</u>
Sales Tax Paid by INEL Contractors	\$1,352,593	\$1,487,098	\$2,775,823	85.3



IMPACTS

1989 UPDATE

PRIMARY IMPACT AREA

SUMMARY

Significant increases in area employment not related to the INEL combined with a slight decline in site employment to produce a 7% decline in INEL employment as a proportion of area employment. Site employees are estimated to have contributed 14% of the area's county property taxes, while constituting 10.6% of total area employment. A total of 7,745 public school pupils in the seven county area are the children of INEL employees.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
Impact Area Population (Seven Counties)	224,000	224,770*	0.3
Average INEL Family Size	3.37	3.49**	3.6
Total INEL Family Members	35,628	35,660	0.1
Impact Area INEL Families as			
% of impact area population	15.9	15.9	-0-
% of all INEL families	99.4	99.5	0.1

*Woods and Poole Economics, Inc., 1989.

**The slight increase in INEL family size noted for 1988 may be attributed to a sampling bias caused by the low participation rate of the nearly 1,200 Navy personnel in the 1987 personnel survey.

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total Impact Area Employment:</u>	92,256	96,347	4.4
<u>INEL Employment:</u>			
Number of Employees	10,560	10,203*	-3.4
% of Total Impact Area Employment	11.4	10.6	-7.0
<u>INEL Dependent Jobs:</u>			
Number of Jobs	17,326	17,468	0.8
% of Impact Area Employment	18.8	18.1	-3.7

*49 INEL employees do not reside within the seven county area of primary impact.

COUNTY REVENUE 1988

	<u>FY 1988</u>	<u>Attributed Per House- hold</u>	<u>INEL House- holds**</u>
Property Taxes	\$19,783,346*	\$272.33	\$2,758,036
Charges for Services	1,668,345	22.97	108,105
Licenses/Permits	1,256,912	17.30	202,966
Fines	1,103,096	15.18	142,472

*Includes all classes of county property tax, including residential and commercial.

**Total value includes imputed contributions of Custer County employees.

SCHOOL DISTRICTS 1988

	<u>1987-88</u>
Total Revenue from School Taxes	\$33,896,946
Total Pupils	52,544
INEL Dependent Pupils	7,745*
INEL Proportion of Pupils	14.7%

*Estimate based on 1987 proportion of INEL Dependent pupils to total pupils



IMPACTS

1989 UPDATE

BANNOCK COUNTY

SUMMARY

Between 1985 and 1988 Bannock County experienced a 0.9% decline in total employment, while at the same time four site employees are estimated to have moved from there. Pocatello School District enrolls an estimated 431 children of site employees. INEL households contribute an estimated \$215,872 in county taxes and fees.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	68,800	68,280	-0.8
Average INEL Family Size	2.85	3.11*	9.0
Total INEL Family Members	2,013	2,186	8.6
County INEL Families			
as % of Total County Population	2.9%	3.2%	10.3
as % of all INEL Families	5.6%	6.1%	8.9

*The increase in INEL family size noted for 1988 may be attributed to a sampling bias caused by the low participation rate of the nearly 1,200 Navy personnel in the 1987 personnel survey.

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	29,194	28,936	-0.9
<u>INEL Employment:</u>			
Number of Employees	707	703	-0.5
% of County Employment	2.4%	2.4%	-0-
% of Total INEL Employment	6.7%	6.9%	3.0
<u>INEL Dependent Jobs:</u>			
Number of Jobs	2,205	2,229	1.1
% of County Employment	7.6%	7.7%	1.3
% of Total INEL Employment	12.7%	12.8%	0.8

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$5,733,938	\$230.94	\$162,351
Charges for Services	1,316,457	53.02	37,274
Licenses/Permits	144,042	5.80	4,078
Fines	429,787	17.31	12,169

SCHOOL DISTRICTS 1988

	<u>Total School</u> <u>Taxes Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 21 Marsh Valley	\$1,624,798	1,600	14	0.9%
# 25 Pocatello	7,834,530	12,686	431	3.4%

CITIES 1988

	<u>Chubbuck</u>	<u>Pocatello</u>
Total Population	8,000*	44,420*
INEL Employees	106	577
Average INEL Family Size	4.07	2.93
Total INEL Family Members	433	1,690
INEL Families as % of City Population	5.4%	3.8%

	<u>Chubbuck</u>			<u>Pocatello</u>		
	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$634,721	\$218.19	\$23,200	\$6,626,000	\$410.21	\$236,562
Sales Tax Ret.	19,332	6.65	707	751,511	46.53	26,831
State Revenue						
Sharing	178,912	61.50	6,540	861,951	53.36	30,774

* 1987 Population based on local estimates



IMPACTS

1989 UPDATE

BINGHAM COUNTY

SUMMARY

Situated between two trade area centers, Bingham County is home to 1,423 site employees. Children of site employees make up an average of 13% of the county's five public school districts. Site employees contribute about \$367,786 to the City of Blackfoot.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	38,300	38,400	0.3
Average INEL Family Size	3.97	4.02	1.3
Total INEL Family Members	5,223	5,720	9.5
County INEL Families			
as % of Total County Population	13.6%	14.9%	9.6
as % of all INEL Families	14.6%	16.0%	9.6

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	14,600	15,261	4.5
<u>INEL Employment:</u>			
Number of Employees	1,317	1,423	8.0
% of County Employment	9.0%	9.3%	3.3
% of Total INEL Employment	12.4%	13.9%	12.1
<u>INEL Dependent Jobs:</u>			
Number of Jobs	2,934	3,131	6.7
% of County Employment	20.1%	20.5%	2.0
% of Total INEL Employment	16.9%	17.9%	5.9

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$4,820,992	\$ 409.29	\$582,420
Charges for Services	134,599	11.43	16,261
Licenses/Permits	210,393	17.86	25,415
Fines	220,270	18.70	26,610

SCHOOL DISTRICTS 1988

	<u>Total School</u> <u>Taxes Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 52 Snake River	\$1,004,106	2,247	312	13.9%
# 55 Blackfoot	2,149,917	4,173	572	13.7%
# 58 Aberdeen	771,154	747	13	1.8%
# 59 Firth	389,864	955	150	15.7%
# 60 Shelley	917,179	2,236	309	13.8%

CITIES 1988

	<u>Blackfoot</u>	<u>Shelley</u>
Total Population	10,080	3,680
INEL Employees	709	335
Average INEL Family Size	3.75	4.04
Total INEL Family Members	2,658	1,355
INEL Families as % of City Population	26.4%	36.8%*

	<u>Blackfoot</u>			<u>Shelley</u>		
	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$1,291,803	\$417.79	\$296,162	\$361,827	\$320.53	\$107,469
Sales Tax Ret.	151,701	49.06	34,779	35,878	31.78	10,656
State Revenue						
Sharing	160,709	51.98	36,845	59,984	53.14	17,816

* The number of INEL families residing in Shelley is probably inflated due to systematic sampling bias.



IMPACTS

1989 UPDATE

BONNEVILLE COUNTY

SUMMARY

Over 20% of total county employment is directly tied to the INEL. An additional 10% of the county's employment is indirectly supported by site activity. About 65% of all site employees reside within Bonneville County. About 35% of the Idaho Falls School District is INEL dependent. Almost 19,000 Idaho Falls residents are direct beneficiaries of INEL wages and salaries. These households contribute more than \$3.4 million to the City of Idaho Falls in the form of taxes and fees.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	70,200	70,620	0.6
Average INEL Family Size	3.25	3.34	2.8
Total INEL Family Members	24,558	23,260	-5.3
County INEL Families			
as % of Total County Population	35.0%	32.9%	-6.0
as % of all INEL Families	68.9%	65.2%	-5.4

*The slight increase in INEL family size noted for 1987 may be attributed to a sampling bias caused by the low participation rate of the nearly 1,200 Navy personnel in the 1987 personnel survey.

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	31,266	33,224	6.3
<u>INEL Employment:</u>			
Number of Employees	7,548	6,964	-7.7
% of County Employment	24.1%	21.0%	-12.9
% of Total INEL Employment	71.5%	68.3%	-4.5
<u>INEL Dependent Jobs:</u>			
Number of Jobs	10,416	10,028	-3.7
% of County Employment	33.3%	30.2%	-9.3
% of Total INEL Employment	60.1%	57.4%	-4.5

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$6,021,433	\$ 250.68	\$1,745,764
Charges for Services	93,507	3.89	27,110
Licenses/Permits	477,600	19.88	138,468
Fines	293,767	12.23	85,170

SCHOOL DISTRICTS 1988

	<u>Total School</u> <u>Taxes Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 91 Idaho Falls	\$6,713,548	8,988	3,146	35.0%
# 92 Swan Valley	138,655	96	18	18.6%
# 93 Bonneville	4,695,325	6,840	1,751	25.6%

CITIES 1988

	<u>Ammon</u>	<u>Idaho Falls</u>
Total Population	4,910	43,356
INEL Employees	543	5,876
Average INEL Family Size	3.84	3.22
Total INEL Family Members	2,086	18,921
INEL Families as % of City Population	42.5%	43.6%

	<u>Ammon</u>			<u>Idaho Falls</u>		
	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$109,959	\$65.84	\$35,762	\$7,010,200	\$475.37	\$2,793,290
Sales Tax Ret.	3,228	1.93	1,050	698,178	47.34	278,197
State Revenue Sharing	76,466	45.79	24,869	845,996	57.37	337,096



IMPACTS

1989 UPDATE

BUTTE COUNTY

SUMMARY

While only 1,650 Butte County residents are employed, nearly 5,000 INEL jobs are performed there. The 283 site employees who are residents of Butte County comprise 17% of the county's resident labor force. A third of Arco School District's 721 pupils are children of INEL employees.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	3,200	3,250	1.6
Average INEL Family Size	3.49	4.04	15.8
Total INEL Family Members	985	1,143	16.0
County INEL Families			
as % of Total County Population	30.8%	35.2%	14.3
as % of all INEL Families	2.8%	3.2%	14.3

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	1,402	1,650	17.7
<u>INEL Employment:</u>			
Number of Employees	283	283	-0-
% of County Employment	20.2%	17.2%	-14.9
% of Total INEL Employment	2.7%	2.8%	3.7
<u>INEL Dependent Jobs:</u>			
Number of Jobs	404	416	3.0
% of County Employment	28.8%	25.2%	-12.5
% of Total INEL Employment	2.3%	2.4%	4.3

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$300,396	\$ 273.58	\$77,424
Charges for Services	76,797	69.94	19,794
Licenses/Permits	14,384*	13.10	3,707
Fines	-0-	-0-	-0-

* Butte County combines licenses/permits/fines in its accounting practices.

SCHOOL DISTRICTS 1988

	<u>Total School</u> <u>Taxes Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 111 Arco	\$504,580	721	239	33.2%

CITIES 1988

	<u>Arco</u>
Total Population	1,080
INEL Employees	199
Average INEL Family Size	3.51
Total INEL Family Members	699
INEL Families as % of City Population	64.8%*

	<u>Arco</u>		
	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$83,702	\$229.41	\$45,710
Sales Tax Return	11,112	30.46	6,068
State Revenue Sharing	18,572	50.90	10,142

*The number of INEL families residing in Arco is probably inflated due to small sample size.



IMPACTS

1989 UPDATE

CUSTER COUNTY

SUMMARY

Less than 3% of Custer County employment is site related, and less than 1% of all INEL employees reside there. Most are concentrated in the city of Mackay, where they and their families comprise nearly 30% of that city's population. Any overall decline in the population of the city of Mackay would represent an increase in site dependence.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	5,200	4,800	-7.7
Average INEL Family Size	3.76	3.68	-2.1
Total INEL Family Members	201	236	17.4
County INEL Families			
as % of Total County Population	3.9%	4.9%	25.6
as % of all INEL Families	0.6%	0.7%	16.7

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	2,669	2,745	2.8
<u>INEL Employment:</u>			
Number of Employees	53	64	20.8
% of County Employment	2.0%	2.3%	15.0
% of Total INEL Employment	.5%	.6%	20.0
<u>INEL Dependent Jobs:</u>			
Number of Jobs	106	120	13.2
% of County Employment	4.0%	4.4%	10.0
% of Total INEL Employment	.6%	.7%	16.7

SCHOOL DISTRICTS 1988

	<u>Total School Taxes Collected</u>	<u>Total Pupils</u>	<u>INEL Dependent Pupils</u>	<u>INEL Proportion of Pupils</u>
# 181 Challis	\$1,393,109	595	4	0.6%
# 182 Mackay	161,939	307	52	17.1%

CITIES 1988

	<u>Mackay</u>
Total Population	650
INEL Employees	53
Average INEL Family Size	3.50
Total INEL Family Members	184
INEL Families as % of City Population	28.4%

	<u>Mackay</u>		
	<u>FY 1988</u>	<u>Per House- hold</u>	<u>INEL House- holds</u>
Property Tax	\$28,154	\$114.78	\$6,048
Sales Tax Return	4,889	19.93	1,050
State Revenue Sharing	10,657	43.45	2,289



IMPACTS

1989 UPDATE

JEFFERSON COUNTY

SUMMARY

Jefferson County experienced an 18% increase in its number of INEL employees between 1985 and 1988, with those individuals comprising 9.5% of total county employment. Six hundred twenty-one of the county's public school children are members of INEL families. Site employees and their families contribute an estimated \$248,086 in county taxes and fees.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	16,300	16,630	2.0
Average INEL Family Size	4.07	4.05	-0.5
Total INEL Family Members	2,215	2,620	18.3
County INEL Families			
as % of Total County Population	13.6%	15.8%	16.2
as % of all INEL Families	6.2%	7.3%	17.7

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	6,203	6,783	9.4
<u>INEL Employment:</u>			
Number of Employees	545	647	18.7
% of County Employment	8.8%	9.5%	8.0
% of Total INEL Employment	5.1%	6.3%	23.5
<u>INEL Dependent Jobs:</u>			
Number of Jobs	986	1,197	21.4
% of County Employment	15.9%	17.6%	10.7
% of Total INEL Employment	5.7%	6.9%	21.1

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$1,508,852	\$ 307.55	\$198,986
Charges for Services	46,985	9.58	6,196
Licenses/Permits	196,867	40.13	25,963
Fines	128,458	26.18	16,941

SCHOOL DISTRICTS 1988

	<u>School Taxes</u> <u>Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 251 Jefferson City	\$1,554,074	3,588	513	14.3%
# 252 Ririe	264,627	635	65	10.3%
# 253 W. Jefferson	525,740	647	43	6.7%

CITIES 1988

	<u>RIGBY</u>
Total Population	2,580
INEL Employees	360
Average INEL Family Size	4.14
Total INEL Family Members	1,516
INEL Families as % of City Population	58.8%*

	<u>Rigby</u>		
	<u>FY 1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$243,420	\$319.84	\$115,204
Sales Tax Return	39,566	51.99	18,726
State Revenue Sharing	43,184	56.74	20,438

*The number of INEL families residing in Rigby is probably inflated due to systematic sampling bias.



IMPACTS

1989 UPDATE

MADISON COUNTY

SUMMARY

INEL employees who are residents of Madison County have families averaging 4.16 persons. While only 119 site employees resided there in 1988, that number represents an 11% increase over 1985. Nearly 100 site employees reside in the City of Rexburg, and contribute approximately \$23,000 to city revenues.

POPULATION 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
County Population	22,000	22,790	3.6
Average INEL Family Size	4.47	4.16	-6.9
Total INEL Family Members	433	495	14.3
County INEL Families			
as % of Total County Population	2.0%	2.2%	10.0
as % of all INEL Families	1.2%	1.4%	16.7

EMPLOYMENT 1988

	<u>1985</u>	<u>1988</u>	<u>% Change</u>
<u>Total County Employment:</u>	6,922	7,748	11.9
<u>INEL Employment:</u>			
Number of Employees	107	119	11.2
% of County Employment	1.5%	1.5%	-0-
% of Total INEL Employment	1.0%	1.2%	20.0
<u>INEL Dependent Jobs:</u>			
Number of Jobs	273	347	27.1
% of County Employment	3.9%	4.5%	15.4
% of Total INEL Employment	1.6%	2.0%	25.0

PUBLIC SECTOR 1988

	<u>FY</u> <u>1988</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Taxes	\$1,397,735	\$ 232.45	\$27,662
Charges for Services	-0-	-0-	-0-
Licenses/Permits	213,626*	35.53	4,228
Fines	30,814	5.12	610

* Madison county combines licenses/permits and charges for services in its accounting practices.

SCHOOL DISTRICTS 1988

	<u>Total School</u> <u>Taxes Collected</u>	<u>Total</u> <u>Pupils</u>	<u>INEL</u> <u>Dependent</u> <u>Pupils</u>	<u>INEL</u> <u>Proportion</u> <u>of Pupils</u>
# 321 Madison	\$2,423,302	4,123	82	2.0%
# 322 Sugar-Salem	830,499	1,360	31	2.3%

CITIES 1988

Rexburg

Total Population	12,240
INEL Employees	92
Average INEL Family Size	4.21
Total INEL Family Members	381
INEL Families as % of City Population	3.1%

Rexburg

	<u>FY 1986</u>	<u>Per</u> <u>House-</u> <u>hold</u>	<u>INEL</u> <u>House-</u> <u>holds</u>
Property Tax	\$577,459	\$178.80	\$16,443
Sales Tax Return	41,035	12.71	1,169
State Revenue Sharing	190,543	59.00	5,426

**TABLE 1. EMPLOYMENT MULTIPLIERS BY COUNTY,
TRADE AREA, AND REGION OF INEL IMPACT, 1987**

<u>Area of Impact</u>	<u>Multiplier</u>
Idaho ¹	3.75
Southeast Idaho ²	2.36
Trade Areas	
Pocatello ³	2.92
Idaho Falls ⁴	3.50
Counties ¹	
Bannock	3.17
Bingham	2.20
Bonneville	3.66
Butte	1.47
Custer	1.88
Jefferson	1.85
Madison	2.92

Footnotes:

1. *Compiled from location quotient analysis computed by the authors using 1987 employment data, Idaho Department of Employment.*
2. *Hofman, et. al., Socio-Economic Impacts of the Idaho National Laboratory, 1986.*
3. *Southeast Idaho Economic Development Profile, 1987.*
4. *Nellis, A Social and Economic Profile of Bonneville County and Idaho Falls, 1988.*

**TABLE 2. AVERAGE HOUSEHOLD SIZE,
INEL IMPACT AREA, 1987**

<u>County</u>	<u>Average County Household Size¹</u>	<u>Average Family Size, INEL Employees²</u>
Bannock	2.75	3.11
Bingham	3.26	4.02
Bonneville	2.94	3.34
Butte	2.96	4.04
Custer	2.65	3.68
Jefferson	3.39	4.05
Madison	3.79	4.16

Footnotes:

1. *Woods and Poole Economics, 1987.*
2. *1987 INEL Personnel Survey, DOE.*

**TABLE 3. POPULATION AND EMPLOYMENT
IMPACTS OF THE INEL, 1988**

<u>County</u>	<u>1985 INEL Employees</u>	<u>1988</u>			
		<u>Employment Impact</u>		<u>Population Impact</u>	
		<u>Direct</u>	<u>Total¹</u>	<u>Direct²</u>	<u>Total³</u>
Bannock	707	703	2,229	2,186	6,130
Bingham	1,317	1,423	3,131	5,720	10,207
Bonneville	7,548	6,964	10,028 ⁵	23,260	29,482
Butte	283	283	416	1,143	1,231
Custer	53	64	120	236	318
Jefferson	545	647	1,197	2,620	4,058
Madison	107	119	347	495	1,315
Totals	10,560	10,203 ⁴	17,468	35,660	52,741

Footnotes:

1. *Number of INEL employees residing in county times county employment multiplier derived through location quotient analysis.*
2. *INEL Direct employment times average family size based on 1987 INEL Personnel Survey.*
3. *Total INEL-dependent employment times average household size, estimate from Woods and Poole Economics, 1987.*
4. *An additional 49 employees reside in Southeast Idaho counties other than those listed in the table.*
5. *Derivation of the numbers can be found in the Bonneville County Profile.*

**TABLE 4. RESIDENTIAL-BASED COUNTY
REVENUES ATTRIBUTED TO INEL HOUSEHOLDS, 1988**

FY 1988 RESIDENTIAL-BASED COUNTY REVENUE SOURCES

County	TAXES		CHARGES FOR SERVICES		LICENSES/PERMITS		FINES	
	Total	INEL ¹	Total	INEL ¹	Total	INEL ¹	Total	INEL ¹
Bannock	\$5,733,938	\$162,351	\$1,316,457	\$37,274	\$144,042	\$4,078	\$429,787	\$12,169
Bingham	\$4,820,992	\$528,420	\$134,599	\$16,261	\$210,393	\$25,415	\$220,270	\$26,610
Bonneville	\$6,021,433	\$1,745,764	\$93,507	\$27,110	\$477,600	\$138,468	\$293,767	\$85,170
Butte	\$300,396	\$77,424	\$76,797	\$19,794	\$14,384	\$3,707	-0-	-0-
Jefferson	\$1,508,852	\$198,986	\$46,985	\$6,196	\$196,867	\$25,963	\$128,458	\$16,941
Madison	\$1,397,735	\$27,662	-0-	-0-	\$213,626	\$4,228	30,814	610
Totals *	\$19,783,346	\$2,740,607	\$1,668,635	\$106,635	\$1,256,912	\$201,859	\$1,103,096	\$141,500

Source: FY 1988 County revenue data for the above categories are derived from annual budget summaries provided by the respective counties.

¹Revenues contributed by INEL employees are estimated by multiplying the proportion of INEL households to total county households by the total revenue figure.

* Does not include Custer County.

**TABLE 5. COMPARATIVE IMPACTS OF INEL EMPLOYMENT
ON COUNTY POPULATION, EMPLOYMENT, PUBLIC
SCHOOL ENROLLMENT, AND TAX COLLECTIONS, 1988**

<u>Counties</u>	<u>Percent of District Enrollment</u>	<u>Percent of Total Population</u>	<u>Percent of Total Employment</u>	<u>Percent of Total Taxes</u>
Bannock	3.1	3.2	2.4	2.8
Bingham	13.1	14.9	9.3	11.0
Bonneville	30.8	32.9	21.0	29.0
Butte	33.2	35.2	17.2	25.8
Custer	5.5	4.9	2.3	n/a*
Jefferson	12.7	15.8	9.5	13.2
Madison	2.1	2.2	1.5	2.0

** Figures not available*

Source: Proportions contained in columns 1 through 4 are computed from data contained in Tables 6, 3, and 4 respectively.

TABLE 6. PUBLIC SCHOOL ENROLLMENT AND SCHOOL TAX CONTRIBUTIONS OF INEL HOUSEHOLDS, 1987

<u>County</u>	<u>School Tax Revenue</u>	<u>Total Enrollment</u>	<u>Attributed Tax Per Household</u>	<u>School Tax Attributed to INEL Households</u>
Bannock	\$9,459,328	14,286	\$381	\$267,828
Bingham	5,232,220	10,358	444	632,095
Bonneville	11,547,528	15,924	481	3,347,918
Butte	504,580	721	460	130,051
Custer	1,555,048	902	858	54,920
Jefferson	2,344,441	4,870	478	309,183
Madison	3,253,801	5,483	541	64,394
Totals	\$3,389,946	52,544		\$4,806,389

*Source: Idaho Department of Education,
Financial Summaries: Idaho School District, July 1, 1989.*

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