



School organization and costs in Judith Basin County
by Douglas G Marshall

A THESIS Submitted to the Graduate Committee in partial fulfillment of the requirements for the
Degree of Master of Science in Agricultural Economics at Montana State College
Montana State University
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Abstract:

This is a study of school population, facilities, and costs in Judith Basin County. Social changes have taken place, necessitating a readjustment of schools.

The population trends of the county are discussed at some length, together with their implications. The financial discussion is limited to a brief exposition of sources of revenue, expenditures, assessment, tax rates, a short analysis of costs per pupil, and the money savings to be expected from reorganization. An interesting comparison of amounts and percentages that state and federal, county and district, respectively, contribute to education is shown. Various types of school systems are analyzed, and their merits are shown in respect to their attainment of the desirable goals of education and their applicability to Judith Basin County.

Consideration is given to the social problems which will probably arise from reorganization, and suggestions are made which might at least mitigate the effect of these.

The location of the children was accomplished through personal contact in the county and through the use of the Agricultural Adjustment Administration plat sheets. The population trends were estimated by using the census reports and adjusting future projections for mortality. Savings were computed by compiling the relative difference in transportation necessitated because of reorganization.

It was found that the current decline in school population will level off in about 1946, but it appears unlikely that there will be any increase in school population within the predictable future. A number of the schools are uneconomically operated and a reorganization program modeled after a modified county unit plan would probably alleviate many of the problems revealed in this study.

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DOUGLAS G. MARSHALL

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June 1941

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M 3554
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TABLE OF CONTENTS

	Page
ABSTRACT.....	5
PART I. GENERAL NATURE OF THE PROBLEM.....	6
PART II. SCHOOL POPULATION AND FACILITIES.....	8
Elementary Schools.....	8
Population Trends in Judith Basin County.....	10
Birth and Death Rate.....	10
Abnormal Age Distribution.....	15
Migration.....	18
High School Enrollment.....	18
Future Trends.....	18
High Schools.....	20
PART III. FINANCING SCHOOLS IN JUDITH BASIN COUNTY.....	22
Source of Funds.....	22
Apportionment of State Interest and Income Fund.....	22
State Public School Teaching Unit Apportionment.....	22
Transportation Aid.....	22
County Seven and One-half Mill Levy.....	22
Special Tax for General Fund.....	22
Special Tax for Interest and Sinking Fund.....	23
Transfers from Other Districts.....	23
State Equalization Fund.....	23
Oil License Tax for High Schools.....	23

109967

	Page
Reimbursement for Vocational Education.....	23
County High School Apportionment.....	23
All Other Sources.....	23
Expenditures.....	25
Taxable Valuation, Mill Rates.....	25
PART IV. ANALYSIS OF COSTS PER PUPIL.....	30
PART V. CHARACTERISTICS OF A DESIRABLE REORGANIZATION PROGRAM FOR JUDITH BASIN COUNTY.....	39
Larger Administrative Units.....	39
Plans of Administration.....	40
The Alberta Plan.....	40
The County Unit Plan.....	43
The Community Unit Plan.....	45
Feasibility of Plans in Judith Basin County.....	45
The Community Plan.....	45
The County Unit Plan.....	46
The Alberta Plan.....	46
Larger Areas of Tax Support.....	47
Dependence upon Existing School Facilities.....	48
Dependence upon One-room Rural Schools and Family Transportation.....	49
Elimination of Small and Unnecessary Elementary Schools.....	50
Elimination of Small and Unnecessary High Schools.....	50
PART VI. REORGANIZATION OF ONE-ROOM ELEMENTARY SCHOOLS.....	53
Reorganization by District.....	54

	Page
Source of Data.....	54
Probable Savings.....	57
PART VII. REORGANIZATION OF HIGH SCHOOLS.....	59
Analyses of the High Schools.....	59
PART VIII. SOCIOLOGICAL CONSIDERATION IN REORGANIZATION OF SCHOOLS IN JUDITH BASIN COUNTY.....	63
PART IX. CONCLUSIONS AND RECOMMENDATIONS.....	66
APPENDIX A. RECEIPTS BY DISTRICT ACCORDING TO SOURCE, JUDITH BASIN COUNTY, 1939-40.....	67
APPENDIX B. EXPENDITURES BY DISTRICT, ACCORDING TO PURPOSE, JUDITH BASIN COUNTY, 1939-40.....	69
LITERATURE CITED AND CONSULTED.....	71

SCHOOL ORGANIZATION AND COSTS IN JUDITH BASIN COUNTY

ABSTRACT

This is a study of school population, facilities, and costs in Judith Basin County. Social changes have taken place, necessitating a readjustment of schools.

The population trends of the county are discussed at some length, together with their implications. The financial discussion is limited to a brief exposition of sources of revenue, expenditures, assessment, tax rates, a short analysis of costs per pupil, and the money savings to be expected from reorganization. An interesting comparison of amounts and percentages that state and federal, county and district, respectively, contribute to education is shown. Various types of school systems are analyzed, and their merits are shown in respect to their attainment of the desirable goals of education and their applicability to Judith Basin County.

Consideration is given to the social problems which will probably arise from reorganization, and suggestions are made which might at least mitigate the effect of these.

The location of the children was accomplished through personal contact in the county and through the use of the Agricultural Adjustment Administration plat sheets. The population trends were estimated by using the census reports and adjusting future projections for mortality. Savings were computed by compiling the relative difference in transportation necessitated because of reorganization.

It was found that the current decline in school population will level off in about 1946, but it appears unlikely that there will be any increase in school population within the predictable future. A number of the schools are uneconomically operated and a reorganization program modeled after a modified county unit plan would probably alleviate many of the problems revealed in this study.

PART I. GENERAL NATURE OF THE PROBLEM

The cumulative effect of social changes which have been in progress since the establishment of schools in the plains area in Montana has brought about conditions pointing to the need for adjustments in school organization. The most noticeable and measurable of these changes has occurred in the nature and pattern of the population. The exodus of people from this area, together with a change in the age distribution of the remaining population, has resulted in a need for changes in the location and number of schools.

In general, the problem is one of a large number of schools in relation to the school population accommodated. The resulting high cost per pupil is inevitable in extremely small schools.

Poorly located schools decreasing the adequacy of the service are also a problem. It is known in a qualitative way that these problems exist, but additional information is required in order to make specific recommendations concerning their solution.

The same economic circumstances which caused the exodus of population from the plains area have placed an upper limit upon the ability of the land to support social services. The failures or inabilities of counties and districts to reduce their costs to a level in keeping with the ability of the land to pay has frequently resulted in an excessive tax burden upon land. This, in turn, has caused widespread tax delinquency. ^{1/} As tax delinquency has increased and the yield of the

^{1/} Renne, R. R. and Brownlee, O. H., Uncollected Property Taxes in Montana, Mont. Agr. Exp. Sta. Bul. 382, August 1940, p. 5.

property tax as a consequence decreased, counties and school districts have found themselves handicapped for lack of adequate support. Many of them are going further in debt each year. The joint problem of excessive tax burden and the failure of tax revenue to keep pace with expenditures for social services, including schools, suggests the need for studying the possibilities of increasing efficiency.

The financial problem presented by schools in the plains area of Montana is not the only phase of the problem. The complexity of modern society is placing even greater demands upon the educational system as an instrument of social progress. To meet these demands, adequate financial support is necessary. What is needed equally as much is an organization geared to modern society which can achieve optimum results with whatever support may be available.

Because of the limitation of funds and lack of ample time, an analysis of the problem has been made in only one county; namely, Judith Basin.

Judith Basin County represents the main elements of the problem outlined above. The solutions and recommendations can readily be applied to other counties in its vicinity.

PART II. SCHOOL POPULATION AND FACILITIES

There are 40 school districts in Judith Basin County. Six are joint districts, one with Wheatland County and the remaining five with Fergus County. Two of these districts are administered from Fergus County, hence only 38 districts will be considered in this study. During the 1940-41 school year, 13 districts did not operate schools, but instead transferred all pupils to other districts, or if joint districts, to the adjoining county. The remaining 25 districts operated a total of 25 elementary schools and 5 high schools.

Elementary Schools

Elementary schools, operated in combination with high schools, are located in Geyser, Stanford, Windham, Moccasin, and Hobson. Moccasin has the 6-6 type of arrangement, while the rest are modeled on the 8-4 plan. ^{2/} Two-room schools are located at Utica and Raynesford, while the other 18 schools operated in the county are one-room schools.

Of the total county enrollment of 465 in grades one to eight during the 1940-41 school year, 137, or 29.4 per cent, were attending one-room rural schools. Over 70 per cent of the pupils were enrolled in town or two-room schools (see table I). Over half (57 per cent) of the total enrollment lived in the open country. The remaining 43 per cent lived in towns and villages. These figures show the present importance of the

^{2/} The 6-6 type of school organization has the six elementary grades, with the remaining six classified as junior and senior high school, respectively, each containing three grades. The 8-4 type has eight elementary grades with the remaining four classified as high school.

TABLE 1.--NUMBER OF PUPILS, CLASSROOMS, AND SCHOOLS, CLASSIFIED BY
TYPE OF SCHOOL, ELEMENTARY SCHOOLS, JUDITH BASIN COUNTY, 1940-41*

Type of school	Number of schools	Number of classrooms	Number of pupils	Percentage of enrollment
Graded elementary, high school in addition	4	12	166	35.7
Graded elementary	1	5	129	27.7
Two-room elementary	2	4	33	7.1
One-room elementary	18	18	137	29.5
TOTAL	25	39	465	100.0

* Source: Office of County Superintendent of Schools, Judith
Basin County

town and village schools, The total capacity of the seven town and two-room schools is great enough to accommodate all elementary pupils in the county and still not be crowded (see table II).

The number of pupils enrolled in one-room rural schools varied from 2 to 20 in 1940-41. Most of the schools had low enrollments. About 80 per cent had ten or fewer pupils, and less than 6 per cent had sixteen or more pupils (see table III).

Elementary enrollment in Judith Basin County has been decreasing steadily since 1927. The 1940-41 enrollment of 465 was only 42 per cent of that of 1926-27. This is due to a combination of factors; namely, (1) changes in birth and death rates, (2) abnormal age distribution, and (3) migration.

Population Trends in Judith Basin County

When the county was first formed (1920), the population had a large proportion in the ages 25 to 45, inclusive, much larger than that found in a normal distribution (see figure 1). The number and composition of the present population has been influenced by birth rate, age distribution of original settlers, and migration both in and out of the county.

Birth and Death Rate.--The crude birth rate (birth per estimated 1,000 of population) has remained fairly stable, with a slight rise in recent years for Montana (see figure 2). It is probably safe to assume that the trend for Montana applied in Judith Basin County. Since the county has such a small population, a small change in the number of births would greatly influence the population trend and cause any predictions to

TABLE II.--PUPIL RESIDENCE, ENROLLMENT, AND CAPACITY OF ELEMENTARY SCHOOLS
HAVING MORE THAN ONE CLASSROOM, JUDITH BASIN COUNTY, DECEMBER 1940*

District number and name of school	Enrollment, December 1940				Estimated Capacity Total capacity unused		
	From town	County part of district	From other districts	Outside the county			
No. 5, Moccasin	17	15	3	0	35	50	15
No. 12, Stanford	99	21	9	0	129	200	71
No. 22, Windham	7	7	6	1	21	100	79
No. 25, Hobson	39	17	7	0	63	100	37
No. 28, Utica	7	9	0	0	16	29	13
No. 49, Raynesford	11	2	4	0	17	40	23
No. 58, Geyser	19	6	21	1	47	100	53
TOTAL	199	77	50	2	328	619	291

* Source: Office of County Superintendent, Judith Basin County.

TABLE III.--ELEMENTARY SCHOOLS CLASSIFIED BY NUMBER OF
PUPILS PER SCHOOL, JUDITH BASIN COUNTY, 1940-41*

Number of pupils	Number of schools	In per cent of total number
5 or less	7	38.9
6 to 10	7	38.9
11 to 15	3	16.7
16 to 20	1	5.5
TOTAL	18	100.0

* Source: Office of County Superintendent, Judith
Basin County.

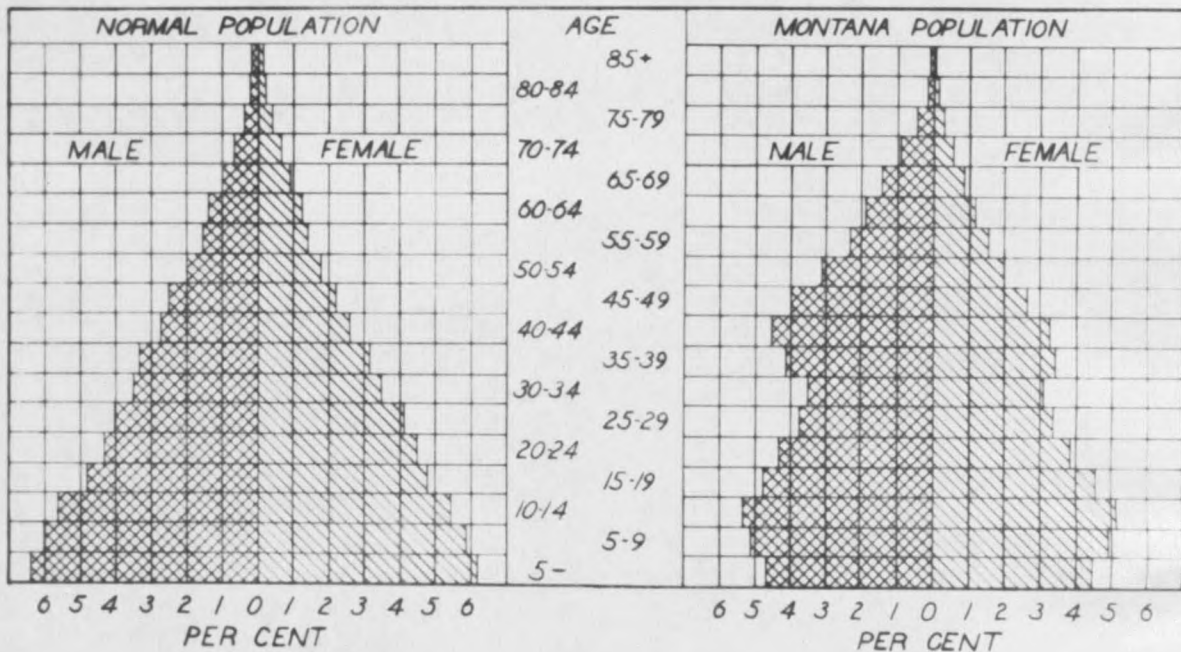


Figure 1.--The pyramid representing a normal population shows the age distribution of the United States native white population of native parentage in 1920 unaffected by migration. The pyramid representing Montana population shows the abnormal age distribution for the state in 1930 due to selective migration.

Source: Renne, R. R. and Kraenzel, C. F., Readjusting Montana's Agriculture: Population Resources and Prospects, Mont. Agr. Exp. Sta. Bul. 309, January 1936, p. 6.

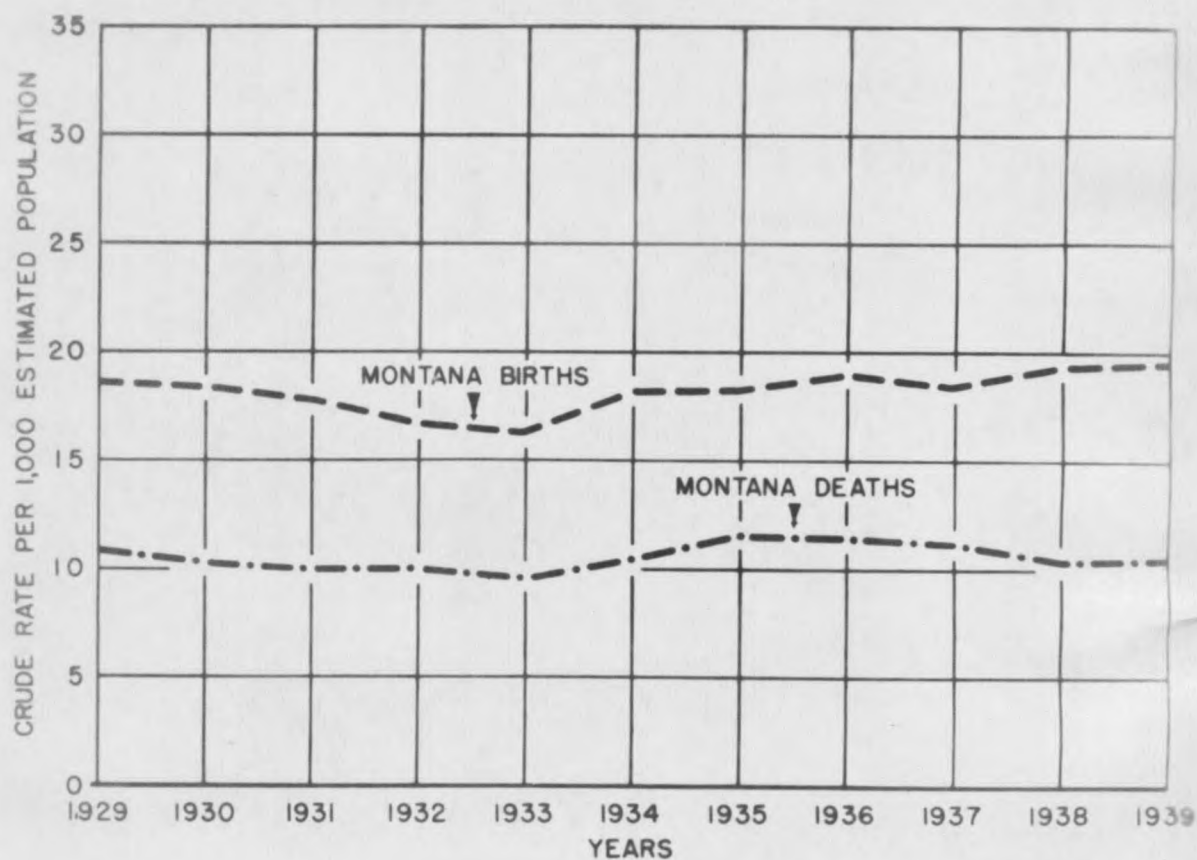


Figure 2.--Trends of crude birth and death rates for Montana, 1929-39.

Source: Montana, Summary of Vital Statistics, Department of Commerce, Bureau of Census, Washington, Vol. 10, 1941.

be inaccurate and subject to error.

The fact that there has been a heavy migration from the county would, in itself, decrease markedly the elementary enrollment, for the birth rate is such that the increase was not enough to offset the migration nor to change materially the distribution of the population by ages.

The change in the death rate, as that of birth rate, has been so small that it, in turn, has had little effect in changing the age distribution (see figure 2).

Abnormal Age Distribution.--The age distribution is effected primarily by birth and death rates and by migration. The original population of Montana had an abnormally high proportion in the age groups 25 to 45, inclusive, as previously stated. Again it must be assumed that the distribution for Montana can essentially be applied to Judith Basin County. Since the birth and death rates have done little to change this proportion, in that it has remained primarily abnormal, migration away must have been largely from the child-bearing group.

Hence, the recent decrease in elementary school enrollment is partly explained in that there has been a proportionately small group having children; or probably, what is more important, a portion of the group having children migrated from the county.

However, by 1940, the age pattern was changed, since these who were 9 to 15 years of age in 1930, have moved into the child-bearing age. This will cause an increase in the number of children under six years of age, assuming that migration remains approximately the same (see figure 3). This trend is already evident, as shown in table IV and figure 3. It is

TABLE IV.--DISTRIBUTION OF CHILDREN, BY AGE GROUPS, 1921-40,
JUDITH BASIN COUNTY*

Year a/	6 to 21	Under 6	7 to 13	14 to 21
1921	2,540	880	1,623	286
1922	2,281	-	-	-
1923	2,098	782	1,344	294
1924	2,007	-	-	-
1925	1,878	637	1,206	272
1926	1,708	574	1,103	265
1927	1,694	518	1,087	282
1928	1,697	548	1,023	286
1929	1,660	513	965	281
1930	1,591	566	904	290
1931	1,504	486	822	320
1932	1,513	475	788	306
1933	1,470	456	715	295
1932	1,437	414	678	304
1935	1,376	402	636	304
1936	1,278	367	594	288
1937	1,131	329	536	259
1938	1,058	320	514	237
1939	1,005	338	485	236
1940	962	343	465	222

* Source: Records of the Office of the County Superintendent,
Judith Basin County.

a/ As of October 15 of each year.

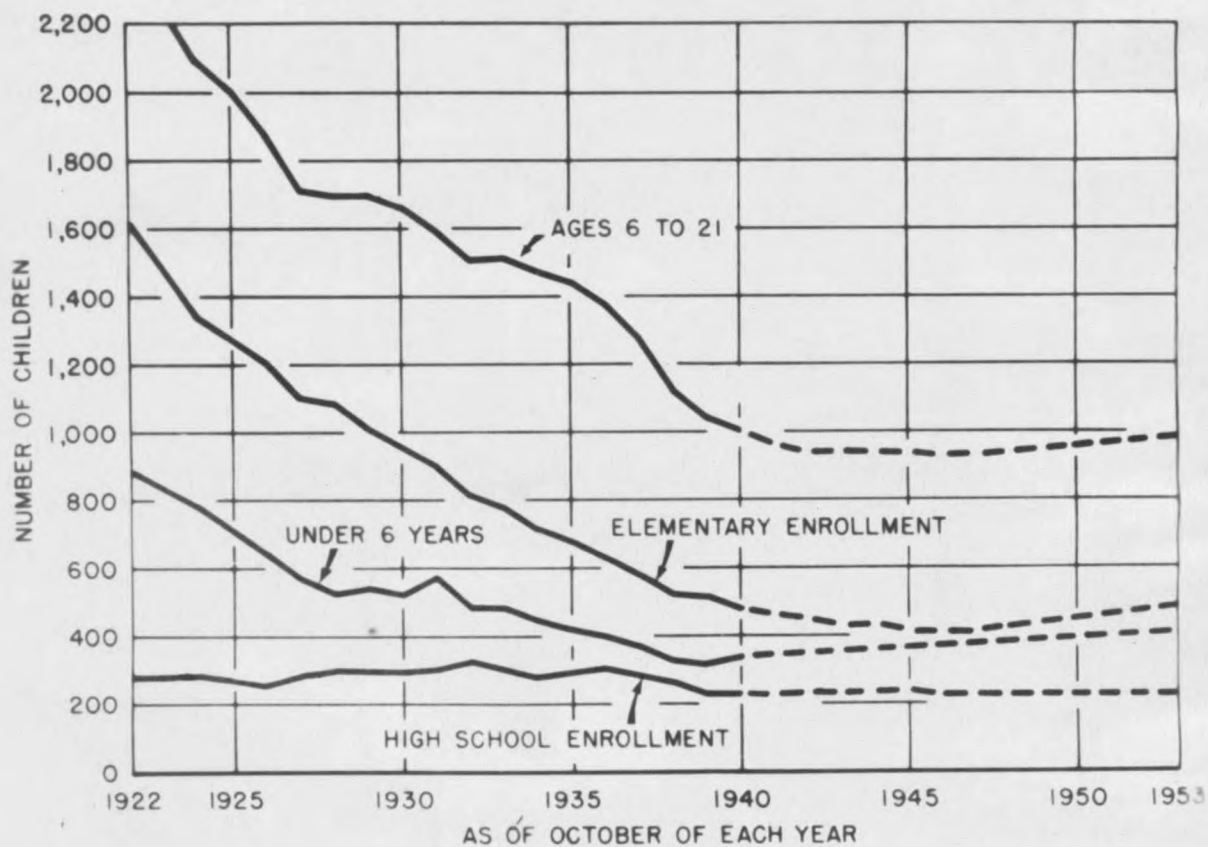


Figure 3.--Trend of school population and enrollment in Judith Basin County, 1922-47. Estimates are adjusted for mortality.

Source: See tables IV and V.

probable that this trend will continue until 1948. The upward trend of the under six years of age group will, in turn, cause a slight increase in elementary enrollment. Again, this trend depends largely upon the birth and death rate, migration, and other factors.

Migration.--This factor, previously shown to be greatly influenced by the age distribution, is the most important cause of a decrease in the elementary enrollment in the county. The fall in population from 5,238 in 1930 to 3,655 in 1940 was due largely to migration, although birth rate, death rate, and abnormal age distribution were contributing factors. Figure 3 shows the effect of the combination of these factors.

High School Enrollment.--The enrollment has remained quite stationary, largely because there has been a rapid increase in the proportion of elementary students entering high school (see figure 3). This increase has been sufficient to offset the corresponding decrease in the population as a whole.

Future Trends.--Estimates of future trends, based on the number and age distribution of children now living in the county, indicate that there will be an upswing in the number of pupils (see table V). The school census shows an actual increase for 1940-41 of children under six years of age (see table IV). This is significant, since any reorganization must take into consideration the population trends. It is possible that there will be a slight increase in elementary enrollment starting in 1945. This increase in children under six is due largely to better economic conditions, which decreased the rate of migration; and, probably what is more important, the second generation has now reached the

TABLE V.--ESTIMATED POPULATION TRENDS, JUDITH BASIN COUNTY,
1940-46*

Year a/	Children 6 to 21 years of age	Elementary enrollment, 7 to 13 years of age b/	High School enrollment, 14 to 21 years of age c/
1941	941	450	234
1942	936	436	231
1943	932	438	227
1944	930	413	237
1945	912	412	224
1946	902	412	212

* Source: Census Reports of Office of County Superintendent, Judith Basin County, adjusted for mortality and projected to 1946.

a/ As of October 15 of each year.

b/ Based on proportion of children 7 to 13 years of age in school as of October 15, 1940.

c/ Based on proportion of children 14 to 21 years of age in school as of October 15, 1940.

child-bearing age (see figure 1).

High Schools

The five high schools had a total enrollment of 222 pupils in September 1940. Of these, 40 per cent lived in town where they attended school, 52 per cent in the open country or in villages where there were no high schools, and 8 per cent outside the county (see table VI).

The state and county transportation aid has been largely responsible for the relative increase in the number of rural children attending high schools. These five high schools have an estimated capacity of 405 pupils; however, enrollment in 1940-41 was only 55 per cent of this. Moccasin and Windham were the only high schools operating anywhere near capacity. Stanford has sufficient capacity to permit doubling its enrollment (see table VI).

High school enrollment was at its maximum in 1932, and there has been a decline since. This trend will continue for a number of years; probably until 1948, when the increase of children under six should be of high school age and hence there might be a gradual increase again (see figure 3). In making these predictions, it is assumed that unpredictable circumstances will not arise to offset this increase, such as a change in the rate of migration in or out of the county.

TABLE VI.--CLASSIFICATION OF ENROLIMENT AND CAPACITY OF HIGH SCHOOLS,
JUDITH BASIN COUNTY, DECEMBER 1940

District number and name of school	From town	County part of district	From other districts	Outside the county	Total	Estimated capacity	Capacity unused
No. 5, Moccasin	9	8	13	6	36	50	14
No. 12, Stanford	32	13	12	8	65	150	85
No. 22, Windham	23	5	16	0	44	60	16
No. 25, Hobson	15	11	13	0	39	75	36
No. 58, Geyser	10	4	21	3	38	70	32
TOTAL	89	41	75	17	222	405	183
IN PER CENT	40.1	18.5	33.7	7.6	100.0	100.0	45.2

* Source: Office of County Superintendent, Judith Basin County.

PART III. FINANCING SCHOOLS IN JUDITH BASIN COUNTY

Source of Funds

Apportionment of State Interest and Income Fund.--These apportionments are made on a school census basis. During the fiscal year of 1939-40 they ranged from \$22.32 to \$1,300.26 in the various districts, and in all districts were but a small part of the total receipts.

State Public School Teaching Unit Apportionment.--Each unit received \$50 per teaching unit, and the revenue varied from \$50 to \$250 per districts. 3/ In general, a teaching unit is considered one teacher and at least 10 pupils.

Transportation Aid.--Families are entitled to transportation aid on the basis of distance to school, and each district having a school obtained state aid which varied from \$12.75 to \$1,115.82.

County Seven and One-half Mill Levy.--This is by far the largest source of revenue to the school districts. Much careful analysis could be made of this levy, as it is largely a property tax. Previous studies have indicated that the land and general property is carrying a heavy load in taxes. 4/ However, since this tax is the greatest source of funds for the operation of schools, careful consideration and study would have to be made regarding other sources of funds before there could be any reduction in it. The revenue from this source varied from \$150.54 to \$8,768.93 per district.

Special Tax for General Fund.--This is a district tax, and together with the county levies, is the main source of revenue for educational

3/ For specific definition of a teaching unit, see Section 1200.2 of the Revised Codes of Montana, 1935.

4/ Renne, R. R. and Brownlee, O. H., Op. cit. pp. 29 and 30.

purposes. These two taxes account for approximately 85 per cent of the total revenue (see table VII).

Special Tax for Interest and Sinking Fund.--In certain districts which have bonded indebtedness there is a small levy that brings in revenue varying from \$912.21 to \$2,236.21.

Transfers from Other Districts.--Some districts pay a fund to other districts for education of pupils transferred to the latter. This fund varied from \$43.20 to \$540 per district receiving it.

State Equalization Fund.--Judith Basin County receives no money from this fund.

Oil License Tax for High Schools.--The apportionments to the various high schools in Judith Basin County from the state oil license tax are only a fractional part of the total expenditures, and could probably be made a much larger source of funds. The amount varied from \$24.68 to \$64.81 per high school.

Reimbursement for Vocational Education.--Two high schools obtained this additional revenue from the state, one receiving \$803.83 and the other \$1,177.24 as its share.

County High School Apportionment.--This fund is the largest single source of revenue for the high schools, and is obtained from property and land taxes. The fund varied from \$5,011.38 to \$12,721.18 per high school last year.

All Other Sources.--Other sources which cannot be conveniently classified account for some additional funds. The revenue obtained varied from \$3.10 to \$1,254.28.

TABLE VII.--RECEIPTS OF SCHOOL DISTRICTS, BY FUNDS AND MAJOR SOURCES, JUDITH BASIN COUNTY,
FISCAL YEAR ENDING JUNE 30, 1940.*

Source of receipts	General funds		High school funds		Bond int. and sinking funds	Total	
	(dollars)	(pct)	(dollars)	(pct)	(dollars)	(dollars)	(pct)
State and Federal funds:							
State interest and income fund	5,480.10	6.2				5,480.10	3.4
Teaching unit apportionment	1,750.00	1.8	700.00	1.7		2,450.00	1.5
State transportation aid	2,908.60	3.2	2,648.48	6.4		5,557.08	3.5
Oil license tax			175.27	.4		175.27	.1
Reimbursement for vocational education			1,981.07	4.8		1,981.07	1.2
<u>Total State and Federal Funds</u>	10,138.70	<u>11.2</u>	5,504.82	<u>13.3</u>		15,643.52	<u>9.8</u>
County funds:							
General school fund	36,957.69	42.7				36,957.69	23.2
High school tax fund			35,850.61	86.7		35,850.61	22.5
<u>Total county funds</u>	36,957.69	<u>42.7</u>	35,850.61	<u>86.7</u>		72,808.30	<u>45.7</u>
Local sources:							
District property taxes	32,596.25	37.0				32,596.25	20.5
Bond interest and sinking fund					30,054.69	30,054.69	18.9
Tuition and transfer from other districts	1,898.80	2.1				1,898.80	1.2
All other	6,257.84	7.0				6,257.84	3.9
<u>Total local sources</u>	40,752.89	<u>46.1</u>			30,054.69	70,807.58	<u>44.5</u>
<u>TOTAL RECEIPTS</u>	87,849.28	100.0	41,355.43	100.0	30,054.69	159,259.40	100.0

* Source: Compiled from files and reports of County Superintendent of Schools, Judith Basin County.

The source, amount, and percentage of the school district receipts can be seen in table VII, which, above all, verifies that the state and federal governments are paying only a small portion of the total income used for education in the county; namely, 9.8 per cent.

The receipts for individual districts are compiled in Appendix A.

Expenditures

The 1939-40 expenditures of the 36 school districts in Judith Basin totaled \$149,506.92, of which \$76,734.15 was for current operation of elementary schools and \$36,011.80 for current operation of high schools (see table VIII). Expenses for new grounds, building, and equipment totaled \$4,914.55, or 3.3 per cent, while those for debt retirement amounted to \$31,846.42, or 21.3 per cent. Instructional expenses made up the largest single costs, or 49.6 per cent of total expense of elementary schools, and 50.1 per cent of high school expenses. Transportation of pupils and maintenance of school plants were also important items, making up 11.1 per cent and 12.3 per cent, respectively, for all schools. The expenditures for individual districts are compiled in Appendix B.

Taxable Valuation, Mill Rates

As is seen in table IX, there is a great variation in taxable valuation, largely due to size of districts, type of land, improvements, and utilities found therein. Better methods of assessing land are required, for much of it is inaccurately evaluated. 5/ In addition, an equalization of tax rates is needed, This is obtainable only if other

5/ Remme, R. R. and Lord, H. H., Assessment of Montana Farm Lands, Mont. Agr. Exp. Sta. Bul. 348, October 1937.

TABLE VIII.--EXPENDITURES OF SCHOOL DISTRICTS, BY FUNDS AND MAJOR PURPOSES,
JUDITH BASIN COUNTY, FISCAL YEAR ENDING JUNE 30, 1940*

Purpose	General funds		High school funds		Bond int. and sinking funds	Total	
	(dollars)	(pct)	(dollars)	(pct)	(dollars)	(dollars)	(pct)
Current expense:							
Administration	5,559.73	6.9	6,656.03	18.0		12,215.76	8.2
Instructional	40,042.59	49.6	18,478.91	50.1		58,521.50	39.1
Maintenance and operation	11,778.53	14.6	6,681.33	18.1		18,459.86	12.3
Transportation of pupils	13,376.88	16.5	3,205.37	8.7		16,582.25	11.1
Fixed Charges	1,479.28	1.8	557.86	1.5		2,037.14	1.4
Other	1,103.67	1.4	432.30	1.2		1,535.97	1.0
Transferred to other districts	3,393.47	4.2				3,393.47	2.3
<u>Total current expense</u>	76,734.15	<u>95.0</u>	36,011.80	<u>97.5</u>		112,745.95	<u>75.4</u>
Capital outlays:							
New grounds and buildings	2,078.32	2.6	402.29	1.1		2,480.61	1.7
New equipment	1,935.78	2.4	498.16	1.4		2,433.94	1.6
<u>Total capital outlays</u>	4,014.10	<u>5.0</u>	900.45	<u>2.5</u>		4,914.55	<u>3.3</u>
Bond interest and redemption					31,846.42	31,846.42	<u>21.3</u>
<u>TOTAL DISBURSEMENTS</u>	80,748.25	100.0	36,912.25	100.0	31,846.42	149,506.92	100.0

* Source: Compiled from files and reports of the County Superintendent of Schools, Judith Basin County.

TABLE IX.--TAXABLE VALUATIONS AND TAX LEVIES IN
JUDITH BASIN COUNTY, 1940*

District number	Taxable valuations	Levy voted (mills)	Levy sinking (mills)	Levy general (mills)	Levy textbook (mills)	Total a/ (mills)
1	\$ 21,675	13.27		9.25		23.07
4	65,635			0		0
5	264,623	13.27	1.60	9.25	.55	24.67
6	43,853			2.90		2.90
7	37,446			10.00		10.00
8	34,242			9.50		9.50
10	36,045			4.50		4.50
11	43,358			0		0
12	603,508		3.20	1.44		4.64
13	219,699			3.80		3.80
14	106,312		6.10	0		6.10
17	21,676			0.50		0
18	40,927			2.50		2.50
19	66,151			6.34		6.34
20	51,492			5.50		5.50
21	73,013			10.00		10.00
22	212,618		10.30	10.00		20.30
23	103,461			4.80		4.80
24	214,910			3.30		3.30
25	449,126		2.81	10.00		12.81
27	52,350			0		0
28	214,668			10.00		10.00
31	62,739			5.00		5.00
34	87,227			10.00		10.00
35	138,784			7.00		7.00
36	153,196			0		0
37	44,257					0
39	64,691			7.70		7.70
40	57,719			8.40		8.40
44	113,753			2.80		2.80
47	18,619			9.20		9.20
49	198,205			9.13		9.13
50	47,682			9.50		9.50
51	33,292					0
52	56,274			3.10		3.10

TABLE IX.--(Continued) TAXABLE VALUATIONS AND TAX LEVIES IN
JUDITH BASIN COUNTY, 1940*

District number	Taxable valuations	Levy voted (mills)	Levy sinking (mills)	Levy general (mills)	Levy textbook (mills)	Total a/ (mills)
53	\$ 44,096			10.00		10.00
54	28,401			1.44		1.44
55	37,145			10.00		10.00
56	169,879			10.00		10.00
57	72,587			5.00		5.00
58	235,409		10.10	5.70		15.80
200	15,004	2.00		10.00		12.00
210	28,712			8.00		8.00
TOTAL	\$4,684,459					

* Source: Records of Office of County Superintendent of Schools
Judith Basin County.

a/ Total does not include county-wide levy for elementary grades
which is 7.5 mills or county-wide levy for high schools which is 7 mills.

sources of revenue are found to supplant the resulting decrease in land and property taxes.

The one salient feature of table IX is the great disparity evidenced in tax levies, as difference in rates ranges from 0 mills to 24.67 mills. The reorganization of schools in the county should carry with it an equalization of tax rates, which in turn would lead to a reduction in some districts and a small increase in others. Moreover, it would relieve excessive tax burdens on some farms. Various studies have been made to substantiate the fact that the average county is overburdened with property and land taxes and that other sources are needed to obtain the necessary revenue. A sales tax, higher fuel taxes, and luxury taxes have been suggested as substitutes for the disproportionate amount the land is now bearing. However, the sales tax is regressive, and little better than the property tax.

Another method of reducing taxes, in addition to finding other sources of revenue, is to reduce local governmental expenditures. 6/ This could be brought about in various ways; namely:

1. County manager form of government.
2. Consolidation of county offices.
3. More conservative spending program.
4. Reorganization of school districts.

Reorganization of school districts and equalization of tax levies are discussed at length in other sections of this report.

6/ Voelker, Stanley W., Local Public Finance Situation in Daniels County, Montana, Preliminary Report, Mont. Agr. Exp. Sta. Mimeo. Cir. 31, January 1941, pp. 33 to 52.

PART IV. ANALYSIS OF COSTS PER PUPIL

The costs per pupil have been broken down into total, instructional, and operational cost per pupil, in order that the trend in relation to the number of pupils per school might be compared. 7/

It was found that the smaller the enrollment of the school, the higher are the costs per pupil (see figures 4, 5, and 6). The costs per pupil decrease very rapidly as the enrollment increases from one to six pupils. The decrease in costs is moderate as the enrollment increases from six to fifteen. 8/

7/ Instructional costs include expenditures for teachers' salaries, textbooks, supplies, maintenance and operation of plant, libraries, health, fixed charges, and auxiliary costs. They do not include administrative expense, transportation costs or capital outlays. Operational costs consist of expenditures for operation and maintenance of plant. Total costs are the combination of instructional and operational costs.

8/ Tables X, XI, and XII are represented by scatter diagrams with the hyperbolic curve ($y = a - b/x$) fitted to each and their respective correlation coefficients computed. The curve indicates the general trend between the costs per pupil and the reciprocal of the number of pupils in the school. The correlation coefficient, r , is a measure of the degree of mutual relationship between these two factors pictured by the curve.

The standard error of the correlation coefficient, σ_r , is the measure of its reliability. In order that the correlation be significant and reliable, the standard error of the correlation coefficient should be less than one-third of the correlation coefficient. It is more than one-third of the value of the correlation coefficient, it is usually concluded that the correlation is unreliable and subject to error through chance and should be rejected.

The correlation coefficients for figures 4, 5, and 6 were .805, .942, and .658, respectively. The standard errors of the correlation coefficients were .088, .028, and .142. The value of r for the instructional costs was very high, indicating a close correlation and highly significant, since σ_r was only one thirty-fourth of the value of r . The value of r for the total costs was quite high, indicating a good correlation and significant, since σ_r was one-ninth of the value for r . The operational costs and number of pupils per school show a fair correlation. This is quite significant for σ_r was approximately one-fourth of r .

TABLE X.--TOTAL COSTS FOR ONE-ROOM ELEMENTARY SCHOOLS,
JUDITH BASIN COUNTY, 1939*

District number	Total	Number of pupils	Cost per pupil
18	\$894.40	2	\$447.20
6	993.21	3	331.07
51	767.64	3	255.88
31	901.35	4	225.34
7	925.71	5	185.14
11	724.61	5	144.92
39	746.35	5	149.27
20	907.42	6	151.24
21	1,281.70	6	213.62
23	948.31	6	158.05
55	798.50	6	133.08
10	890.18	8	111.27
19	1,378.93	8	172.37
53	980.93	8	122.62
56	1,745.80	8	218.23
44	1,088.83	10	108.88
13	1,288.47	12	107.37
14	3,283.15	12	273.59

* Source: Records of the Office of County Superintendent,
Judith Basin County

TABLE XI.--INSTRUCTIONAL COSTS FOR ONE-ROOM SCHOOLS
JUDITH BASIN COUNTY, 1939*

District number	Total	Number of pupils	Cost per pupil
18	\$796.67	2	\$398.34
6	889.90	3	296.63
51	664.34	3	221.45
31	882.60	4	220.65
7	694.86	5	138.97
11	681.41	5	136.28
39	721.35	5	144.27
20	756.22	6	126.04
21	1,195.30	6	199.22
23	823.71	6	137.28
55	768.50	6	128.08
10	878.38	8	109.80
19	1,147.08	8	143.39
53	832.48	8	104.06
56	1,183.66	8	147.96
44	1,051.43	10	105.14
13	1,251.47	12	104.29
14	873.16	12	72.76

* Source: Records of the Office of County Superintendent,
Judith Basin County.

TABLE XII.--OPERATIONAL COST FOR ONE-ROOM ELEMENTARY SCHOOLS,
JUDITH BASIN COUNTY, 1939*

District number	Total	Number of pupils	Cost per pupil
18	\$115.84	2	\$57.92
6	109.51	3	36.50
51	107.15	3	35.72
31	69.89	4	17.47
7	121.62	5	24.32
11	71.84	5	14.37
39	97.25	5	19.45
20	35.03	6	5.84
21	141.55	6	23.59
23	73.45	6	12.24
55	74.43	6	12.41
10	87.95	8	10.99
19	307.35	8	38.42
53	89.60	8	11.20
56	273.98	8	34.25
44	109.77	10	10.98
13	390.09	12	32.51
14	19.54	12	1.63

* Source: Records of the County Superintendent, Judith
Basin County.

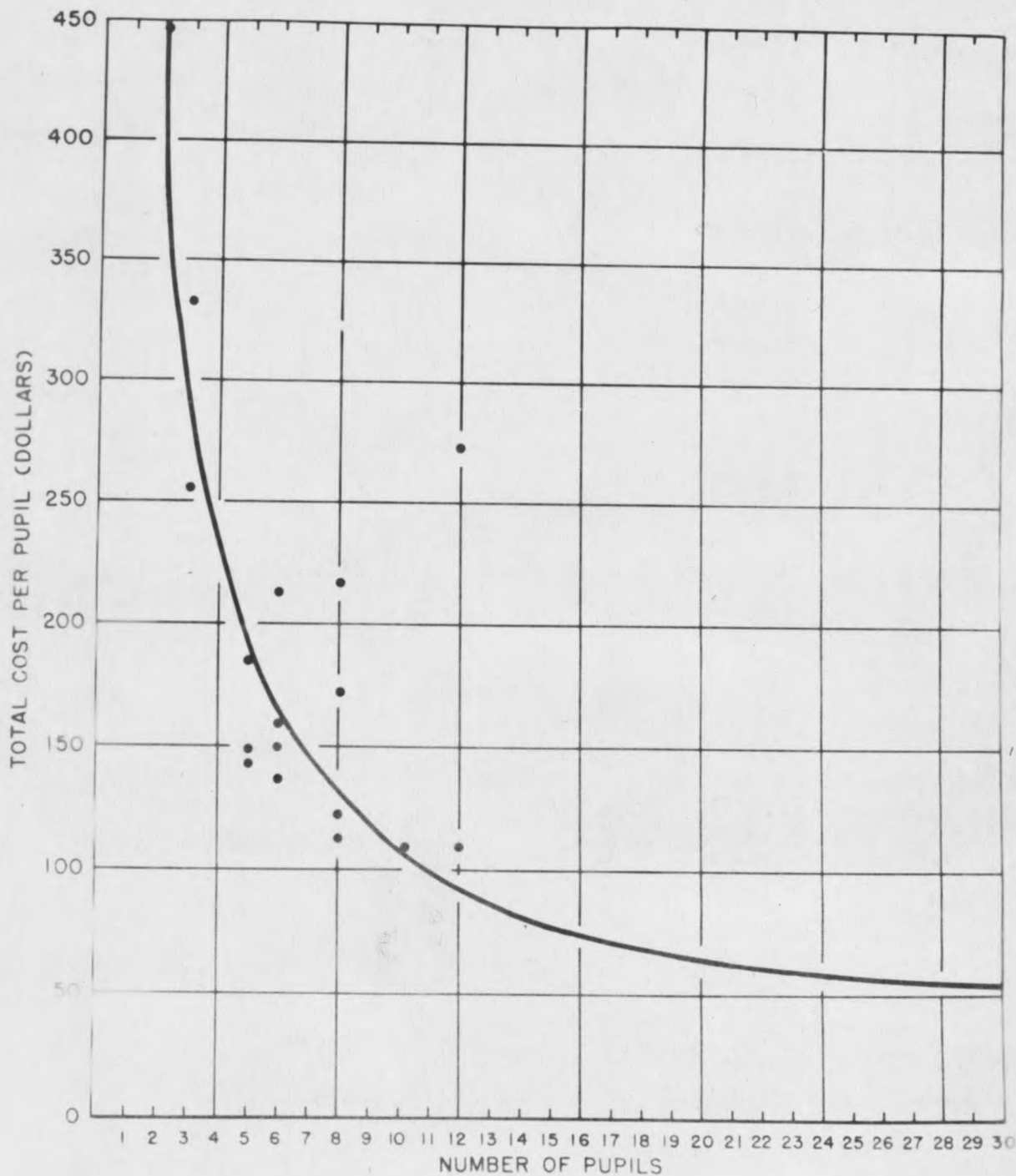


Figure 4.--Total costs per pupil in one-room schools of Judith Basin County, 1939. The degree of relationship between the reciprocal of the number of pupils and the total cost per pupil was .805. The error due to chance or standard error of correlation was .088.

Source: See table IX.

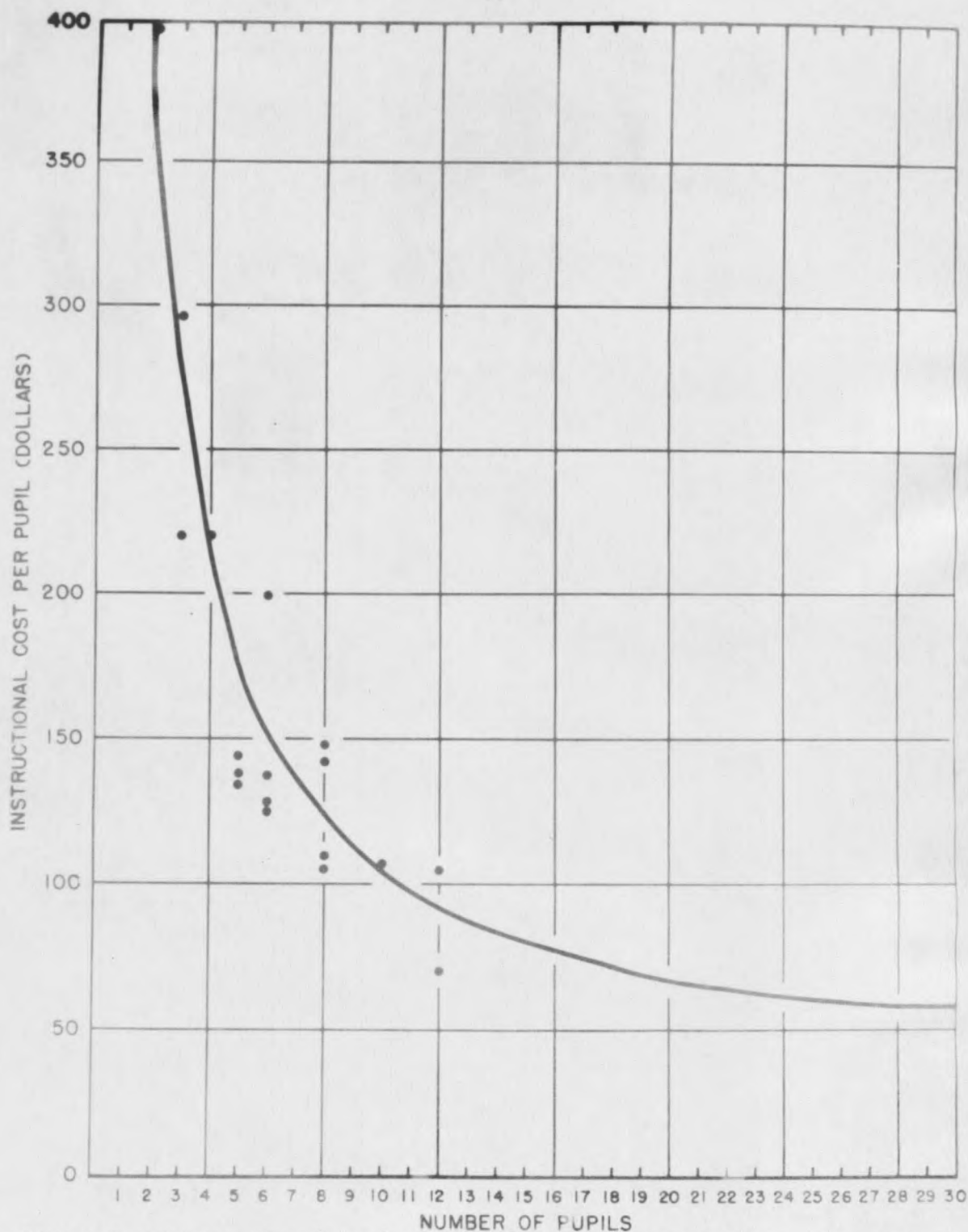


Figure 5.--Instructional cost per pupil for one-room schools of Judith Basin County, 1939. The degree of relationship between the reciprocal of the number of pupils and the instructional cost per pupil was .42. The error due to chance or standard error was .028.

Source: See table I.

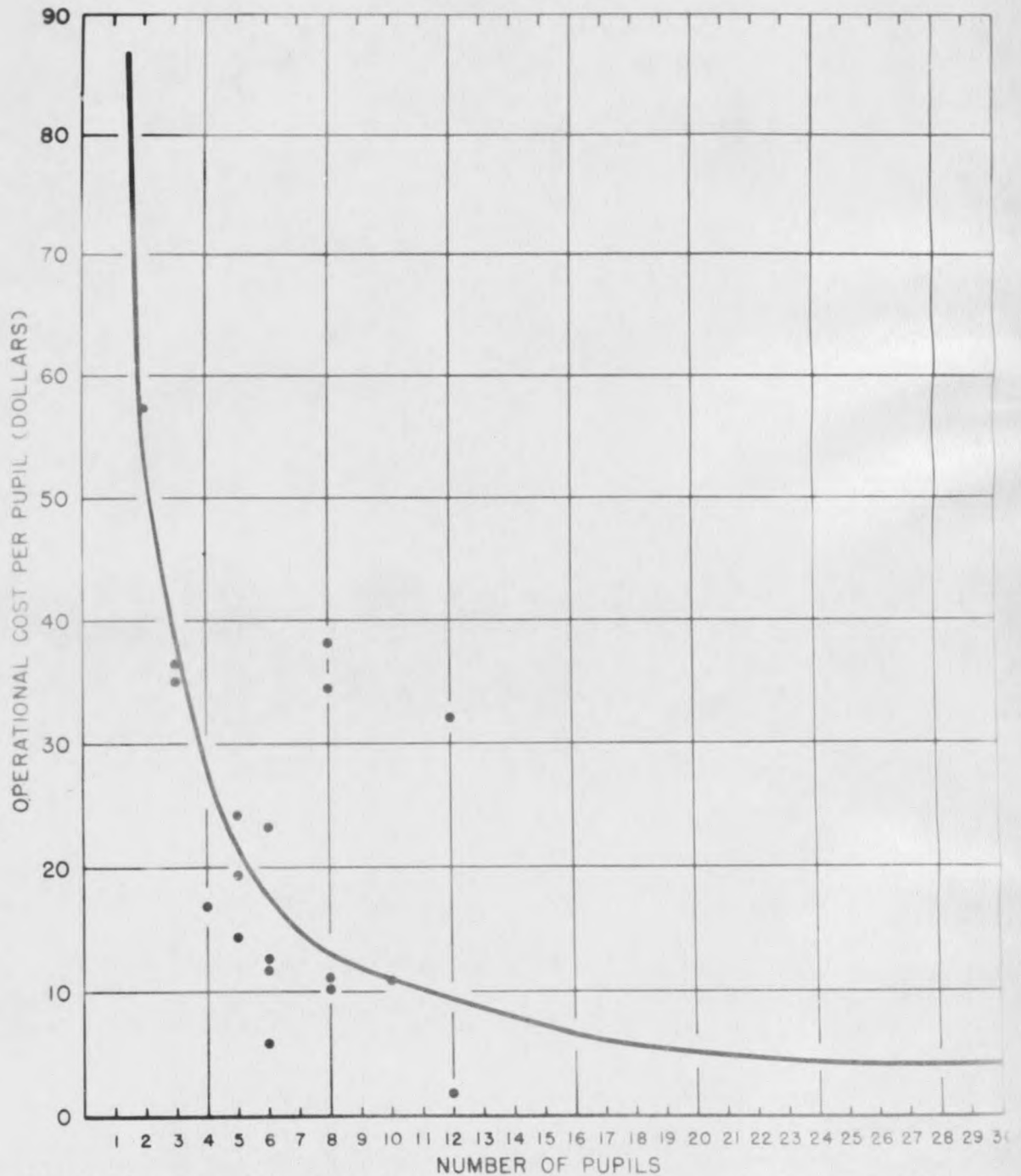


Figure 6.--Operational costs per pupil in one-room schools of Judith Basin County, 1939. The degree of relationship between the reciprocal of the number of pupils and the operational cost per pupil was .658. The error due to chance or standard error of correlation was .142.

Source: See table XI.

From these results one might conclude that in any reorganization effected an attempt should be made to have larger one-room schools, preferable 15 to 25 pupils. As the enrollment increases, the total costs remain approximately the same. In this study, as illustrated in figures 4, 5, and 6, the total costs change very little for enrollments over 15. If the total costs increase very little, it follows that the total cost per pupil will decrease as the enrollment increases. For example, maintenance and operation of the plant, an item included in total costs, will change very little as the enrollment increases. This is true for the remaining expenditures included in total costs, with little exception.

One-teacher schools with enrollments of from 15 to 25 pupils are not only the most economically sized, but also are most efficiently handled by one teacher. The education efficiency or teacher-pupil education is less in smaller schools, as well as in those having enrollments over this range, which is another advantage in having larger enrollments in one-room schools. The author found, through teaching in various one-room schools, that this suggested range of enrollment gave the best educational attainment.

The costs per pupil in high schools is presented in table XIII, but with such a small sample little can be done to estimate a trend. If there were larger schools, the costs per pupil would probably be less.

The small number of high schools in this county does not give sufficient data to indicate any definite relationship between costs per pupil and the size of the schools. The total cost per pupil varied from \$110 to \$186 in the five high schools.

TABLE XIII.--HIGH SCHOOL COSTS FOR JUDITH BASIN COUNTY, 1939*

District number	Total per school	Number of pupils	Total cost per pupil
5	\$6,711.79	36	\$186.43
12	11,955.35	75	159.40
22	4,711.79	36	130.88
25	5,168.88	43	120.21
58	5,051.07	46	109.81

* Source: Records of the Office of County Superintendent,
Judith Basin County.

PART V. CHARACTERISTICS OF A DESIRABLE REORGANIZATION
PROGRAM FOR JUDITH BASIN COUNTY

The reorganization to be presented is designed to fulfill the following aims:

1. Equalization of educational opportunities.
2. Equalization of the financial burden in the county.
3. Increased efficiency in the operation of the school system.
4. A reduction of property taxes.

These aims can best be achieved by the following means: (1) larger administrative units, (2) larger areas for tax support, (3) dependence upon existing school facilities in order to curtail capital expenditures, (4) dependence on one-room rural schools and family transportation to incorporate a plan with the least possible expense, (5) elimination of some small and unnecessary elementary schools to increase educational efficiency, and finally, (6) elimination of unnecessary high schools.

Larger Administrative Units

Larger administrative units would centralize administrative responsibility, increase efficiency, and equalize educational opportunities and financial burdens. An enlarged administrative unit will not necessarily bring a reduction in property taxes.

Studies from the Office of Education, United States Department of Interior, indicate that the optimum size of an administrative unit is 280 teaching units, which under a 6-6 type of school organization would accommodate approximately 9,800 pupils. The minimum size of an efficient

administrative unit is 46 teaching units serving 1,600 pupils. ^{9/} During the 1939-40 school year there were 60.5 elementary and high school teaching units in Judith Basin County and a total of 721 elementary and high school pupils. In other words, the total size of the 25 school districts in Judith Basin County could easily be administered as a unit.

Plans of Administration

The Alberta Plan.--(a) The main features of the plan are: (1) the Minister of Education is given the authority to constitute School Divisions consisting of any number of rural districts in areas where it appears in the interests of education to do so. (2) Village, town, and consolidated districts are not included, although provision is made for them to enter later by agreement.

The new section of The School Act (Part XVII-1936) set out the various steps to be taken in establishing a School Division, specified the powers and duties of the Divisional Boards and the local boards, decided what was to be done with the assets and liabilities of the school districts and determined how funds were to be raised and how spent. Amendments have been made from time to time to eliminate minor defects. ^{10/}

^{9/} Cook, Katherine M., Reorganization of School Units, Office of Education, Washington, D. C., Bulletin 15, 1935, p.10.

^{10/} After Three Years, bulletin published by the Department of Education, Edmonton, Alberta, 1940, pp. 8 to 28.

The control of the affairs of the Division is placed in the hands of a Board of five members, each of whom represents one of the five subdivisions constituting the larger unit. In order that the local trustees may have some control over this election, each local board appoints a delegate to a delegates' meeting at which candidates are nominated. On a fixed date, an election is held at which each elector of a subdivision has a vote. The legal qualifications for the members of the Divisional Board are exactly the same as those for the members of local boards.

(b) The boundaries and size of divisions--In fixing the boundaries of the various divisions, care is taken to include in each division, schools which are geographically related to each other. Natural boundaries are taken into consideration as well as the positions of the main highways and roads and, to a certain extent, homogeneity of population. It is not found possible to permit districts to choose the divisions in

On the date set in the order, all the assets and liabilities of local boards, with the exception of actual cash on hand over and above which is necessary to retire current liabilities, become the assets and liabilities of the Division. Where a district has cash on hand over and above what is necessary to retire current liabilities the amount is placed to the credit of the District in the books of the Division. At the expiration of the third year after the year in which the Division is constituted, this amount becomes available for the provision of education facilities and equipment not ordinarily furnished by the Divisional Board.

The Divisional Board is given full control of the staffing of the schools of the Division and of financing their operation. It appoints the teachers, assigns them to schools, pays their salaries and terminates their contracts when this step becomes necessary. The Divisional Board is also responsible for the erection and care of buildings and the supply of equipment and furniture as needed.

It is further the responsibility of the board to draw up an annual budget showing the amounts of money it is proposed to use for each class of expenditure and to requisition the collecting authorities for the amount required. The collecting authorities under the divisional system are in all cases, the municipal authorities. In organized municipalities the local councils are responsible. In improvement districts the Department of Municipal Affairs assumes the duty.

The Board of the Division is also given certain powers which it may exercise at its discretion including the hiring of physicians, dentists or nurses, the employment of teachers of special subjects and furnishing of free textbooks and supplies.

The board of each local district continues to function as before except that the control of finance and of the teacher is now in the hands of the Divisional Board. The local boards are permitted to make such recommendations as they see fit to the Divisional Board or the Superintendent of the Division.

As already intimated, provision is also made for any town, village, consolidated or separate school district to enter a division upon terms agreed upon with the Board of the Division.

Provision is also made to protect the interests of Roman Catholic or Protestant school districts that may find themselves included in School Divisions in which such districts are in the minority.

which they will be included, since a certain uniformity of size has to be maintained and since all rural districts in an area have to be included in some division. The number of class-rooms which one superintendent can be expected to supervise with a reasonable degree of efficiency serves as the measuring rule to govern the size in all but a few cases.

(c) The advantages which have resulted are namely:

1. Equalization of taxation within the division.
2. A better calibre of trustees.
3. Improvement in the provision for high school instruction.
4. Improvement in library facilities.
5. Increased supervision.
6. Effective placement of teachers.
7. Improvement in teachers' positions shown in increased security, better salaries, and prompt payment of salaries.
8. Removal of local causes of friction.
9. Improved attendance.
10. More activity on the part of the pupils.
11. Maximum use of schools and equipment.
12. Increased length of school year.

(d) The financial problem

1. A more business-like administration.
2. Divisions can give same services as local district for less.
3. Increased average cost per class-room justified in

better education, expansion of capital outlay and increased salaries.

4. Average cost per pupil has increased, but not as much as schools outside the division.

5. Increased maintenance and building program.

6. Overdue debentures are being better taken care of.

7. A definite policy of retiring overdue liabilities.

In conclusion, all the criteria of reorganization can be attained if this plan were used.

The County Unit Plan.--The county is the principal unit of administration of schools in 12 states; namely, Alabama, Florida, Georgia, Kentucky, Louisiana, Maryland, New Mexico, North Carolina, Tennessee, Utah, Virginia, and West Virginia. 11/ Partially developed county unit systems are found in five states: Arkansas, Mississippi, Ohio, South Carolina, and Texas. These states provide county boards of education with some administrative authority. The county unit of school administration may be established by a vote of the qualified electors in any county of Oregon and Montana, and in certain counties of Minnesota, Nebraska, and Texas. 12/

No one size is best for administrative purposes, but most school authorities are agreed it should be larger than the small district unit states, and larger than the township in some of the township unit states.

11/ Renne, R. R., Organization and Costs of Montana Schools, Mont. Agri. Exp. Sta. Bul. 325, August 1936, pp. 93-94

12/ Covert, Timon and Deffenbaugh, Walter S., School Administrative Units, Office of Education, Washington, D. C., Pamphlet 34, January 1933, p. 10.

Most authorities favor the county unit plan, while in older, established communities the community unit plan has found some favor. 13/

The county unit plan has been on the statutes of Montana since 1919 under a law known as the county unit law. Any county in the state may, under its provisions, introduce the plan by a vote of the qualified electors residing in the proposed unit. However, it is not in the true sense of the word, a county unit plan, for the county becomes the unit for tax purposes only. The important administrative functions are still retained by the local district authorities.

The third class districts and small portions of first and second class districts isolated from their parent district can be combined into a single unit. Three counties, Cascade, Carbon, and Chouteau, adopted the plan, but later returned to the old local district method of administrative schools. Several factors accounted for this; namely, (1) the law went into effect when school costs, just as other costs, were increasing, (2) the large debts of most districts made it impossible to show any great reduction in taxes until these debts had been wiped out, which took considerable time, (3) the first and second class districts did not come under the jurisdiction of the law, and the administrative functions continued to be dealt with by the local school district authorities, (4) the plan was not given time to prove its worth, and (5) it actually decentralized authority more than the old plan, for new offices and agencies were created.

Changes in the present law that will be needed to have a large

13/ Covert, Timon and Deffenbaugh, Walter S., Op. cit. pp. 3 and 4.

administrative unit function property are namely:

1. The tax collecting and tax spending agencies should be coterminous.
2. Unnecessary offices should be eliminated.
3. All districts should be required to enter any plan of re-organization.

Conditions which prevail in the state will determine largely the kind of legislation that will facilitate the reorganization of the school districts. A careful study should be made of the laws now used on other states having larger units of administration.

The Community Unit Plan.--Under this plan, school districts would be enlarged to include within their boundaries the territory contributive to an important trading, educational, or social center. Judith Basin County would probably contain 4 or 5 districts under this plan. It has the advantage of retaining control of the educational system in a community area, thus not destroying local interest in the functioning of the schools. However, the plan would, in all probability, not effect as much saving as the other two plans discussed.

Feasibility of Plans in Judith Basin County

The Community Plan.---This plan could, with some modifications, be made adaptable to Judith Basin County. However, it seems to be better molded for older established communities as found in the East. Then too, little could be gained in the way of bettering the educational facilities, for little saving could be made. In all probability, it is the best

alternative, if the county unit plan could not be installed.

The County Unit Plan.--The county unit plans, described above, are patterned more particularly for regions in which they are at present functioning. As has been stated previously, it is important that not only the educational factors be considered when planning reorganization, but the geographical factors as well. There are many worth while experiences and points of interest to be gleaned from the various county unit plans now functioning, but the geographical factor must not be overlooked. None of the 12 states having county unit plans are found in the north-western plains area, while the Alberta plan has been in successful operation for three years in a physical background even more severe than Montana. In conclusion, methods of making the county unit plan politically feasible can be obtained from those states having successful plans; but those factors which are pertinent to this region, namely, roads and weather, can be best surmounted by following the Alberta plan.

The Alberta Plan.--The Alberta plan is not properly called a county unit plan, since Alberta has divisions instead of counties. However, a division would, in many respects, be similar to a county. The portion of Alberta now having divisions in operation would cover an area approximately the size of Montana. In all, there are 33 divisions, which would tend to make a division a little larger than the average county in Montana.

The weather and climate of Alberta and Montana are similar in many respects--an important factor in favor of the Alberta Plan if it is to be used as such in Montana, and particularly in Judith Basin County.

Finally, the Alberta plan as set up and now modified, placed special emphasis when reorganizing, on the position and condition of roads. Transportation is the main cause for worry in reorganizing on a county-wide basis. Undoubtedly, road conditions in general are better in Judith Basin County than the average division in Alberta.

In conclusion, the factors which make the Alberta plan especially applicable to Judith Basin are:

1. Similar weather, climatic, and road conditions.
2. Similar age distribution.
3. Both have relatively new communities and sparse settlements.
4. Similar land use problems, with the accompanying property tax dilemma.

Larger Areas of Tax Support

A second characteristic of a desirable school reorganization plan is the enlargement of the primary unit of tax support. This would equalize the financial burden, as well as increase efficiency, by reducing certain administrative expenses such as those involved in collecting taxes and in office supplies.

As is the case under the present district organization, it is desirable to have the unit of basic tax support coterminous with the administrative unit area. To do otherwise would separate tax-spending responsibility from tax-levying authority. The separation of the two leads to careless spending, discourages administrative reorganization, and results in a waste of public funds.

The main advantage of enlarging the area of tax support, with or without increasing the size of the administrative unit, is the equalization of tax rates. The present inequalities are largely due to the fact that taxable valuation is not apportioned among the districts in a way to satisfy the need for revenue. The extreme variations in tax rates occur when some of the districts do not need to operate schools or are blessed with a public utility or more fertile land (see table IX). As previously shown, the mill rate varies from no district levy to 24.67 mills (see table IX).

When a district no longer operates a school, its tax base cannot be fully utilized by the educational system until it is abandoned and attached to an adjoining district. Too often this is not done because of the weakness of the existing law and reticence of the county superintendent to cause local friction. During this time, a larger proportion of the total school tax is forced upon those districts which must continue to operate schools.

Dependence upon Existing School Facilities

Although there is little school debt, it would be undesirable to incur further indebtedness for new capital construction in view of the present high taxes and the inability of people to carry a heavier load. A reorganization program must be content to use such facilities as are now available.

Dependence upon One-room Rural Schools
and Family Transportation

Many areas have reorganized schools by consolidation, and thus depend upon busses to bring the pupils to the school over fixed transportation routes. This type of school reorganization does not at present appear adaptable in many parts of Judith Basin County. This is largely because of the lack of all-weather roads and because of severe winter weather conditions in areas where consolidation could be applied. Regardless of the type of reorganization effected, roads are in need of improvement. This improvement should take into account not only inter-town and farm-to-market traffic, but also school transportation. It will be some years before this county will have enough all-weather roads so that a safe, comprehensive transportation system for carrying pupils can be established.

Another factor which rules out more extensive bus transportation is the relatively sparse settlement. A bus route of 25 miles requires that the children be on the road at least 2 hours a day. Busses must be operated at or near capacity to be economical. In most cases, 25 or 30 children would have to be served by a bus line of less than 25 miles in length in order for such transportation to be more desirable than the operation of rural schools. ^{14/} In only a few communities of Judith Basin County are there enough children to meet these criteria as to numbers and distances.

^{14/} Voelker, Stanley W., Possibilities of Farm Tax Reduction Through School Reorganization in Sheridan County, Montana, unpublished report, 1940, p. 9.

Hence, it would not seem desirable to base a school reorganization program for Judith Basin County on any great increase in the use of bus transportation. As more roads are improved in the future, then additional bus routes could be established; but for the time being, transportation will have to be reimbursement to each family or group of families on a combination mileage and pupil basis. A number of one-room rural schools whose operation may seem uneconomical will probably have to be operated in the future because of the physical limitations on transportation either by families or by busses.

Elimination of Small and Unnecessary Elementary Schools

Small, one-room schools are undesirable primarily because of their high cost per pupil. It is also possible that a lower quality of instruction is found in these schools, largely because they pay lower salaries and hence must hire teachers who are inexperienced.

The comparatively high cost per pupil in the small, one-room school has been illustrated in table XIV, which compares schools of various sizes on the basis of salaries paid, total instructional cost per pupil, and cost per pupil during the year 1939-40. It will be noted that the salaries paid and total instructional cost per school are greater as the enrollments are increased. At the same time, costs per pupil decrease as the number of pupils increases.

Elimination of Small and Unnecessary High Schools

There is a possibility of eliminating some of the high schools under the present setup, but roads must be improved and bus facilities added to

TABLE XIV.--AVERAGE COSTS PER PUPIL AND PER SCHOOL,
ONE-ROOM SCHOOLS OF VARIOUS ENROLIMENTS,
JUDITH BASIN COUNTY, 1939*

Number of pupils per school	Number of schools	Average salary per teacher	Average instructional cost per school	Average instructional cost per pupil
5 or less	7	\$599.57	\$761.59	\$222.37
6 to 10	9	719.72	959.64	133.44
11 to 15	2	742.50	1,062.31	88.52
ALL SCHOOLS	18	675.53	894.03	137.55

* Source: Records of the Office of County Superintendent,
Judith Basin County.

bring the pupils to school.

It is uneconomical to operate five high schools for such a small enrollment. With two high schools, or possibly three, educational facilities could be increased, with a resulting decrease in cost per pupil.

To summarize, a reorganization program which fits the conditions found in Judith Basin County would have the following characteristics:

1. Larger administrative units.
2. Larger areas for basic tax support.
3. Dependence on existing facilities.
4. Dependence upon one-room schools and family transportation at present.
5. Elimination of some of the small, one-room schools, and establishment of schools with 15 to 30 pupils
6. Elimination of some unnecessary high schools

All these conditions can be realized if the county were reorganized on the Alberta plan.

PART VI. REORGANIZATION OF ONE-ROOM ELEMENTARY SCHOOLS

Any reorganization of schools will probably lead to the shifting of some families, the moving of some schools, and the closing of others. This will, in turn, involve certain new problems and an intensification of old ones.

Present problems before any reorganization is effected are as follows:

1. Many school districts have a lack of operating funds with which to meet current obligations.
2. Many districts have poor farm lands, leading to low income and tenure problems.
3. Many districts are too small to support an adequate education program.
4. Finally, many children are away from home going to school, or have excessive distances to go in order to attend school. This results in some loss of parental control and contributes materially to the breaking of family bonds.

Problems which would still be present after a reorganization program are as follows:

1. Since the children will be away from home more, it places an additional responsibility on the teacher.
2. Loss of parental control will be even more pronounced because the children, in all probability, will spend even less time with their parents.
3. If families move with their children to the village there will

be a shortage of housing facilities for the families.

These present situations have or will come about through more fundamental problems. A discussion of these primary situations will be discussed in a later section (see Sociological Considerations in Reorganization of Schools in Judith Basin County). The solution to the fundamental problems should, in turn, alleviate the immediate problems.

Reorganization by District

Source of Data

The location of the families with children of school, pre-school, and high school age was accomplished largely through the aid of the county officials, in the main, the county extension agent and county superintendent of education. The remaining material on figures 7 and 8 was obtained from the base maps at Montana State College.

Since the children have been located fairly accurately and local conditions mapped, an analysis of those districts where there is a possibility of reorganization follows.

District 7.--One family could probably transport the child to Stanford or be persuaded to move in. The distance is 7.5 miles, and the family has two pre-school children. The other family has a fair road to Windham, and has one pre-school child. They are approximately 4.5 miles from Windham.

The school is certainly uneconomically operated, and every effort should be made to close it. There are four other families with pre-school children who could probably be persuaded that it is to their

- 55 -

LOCATION OF RURAL FAMILIES, WITH CHILDREN IN ELEMENTARY SCHOOL AND OF PRE-SCHOOL AGE JUDITH BASIN COUNTY, 1940-1941

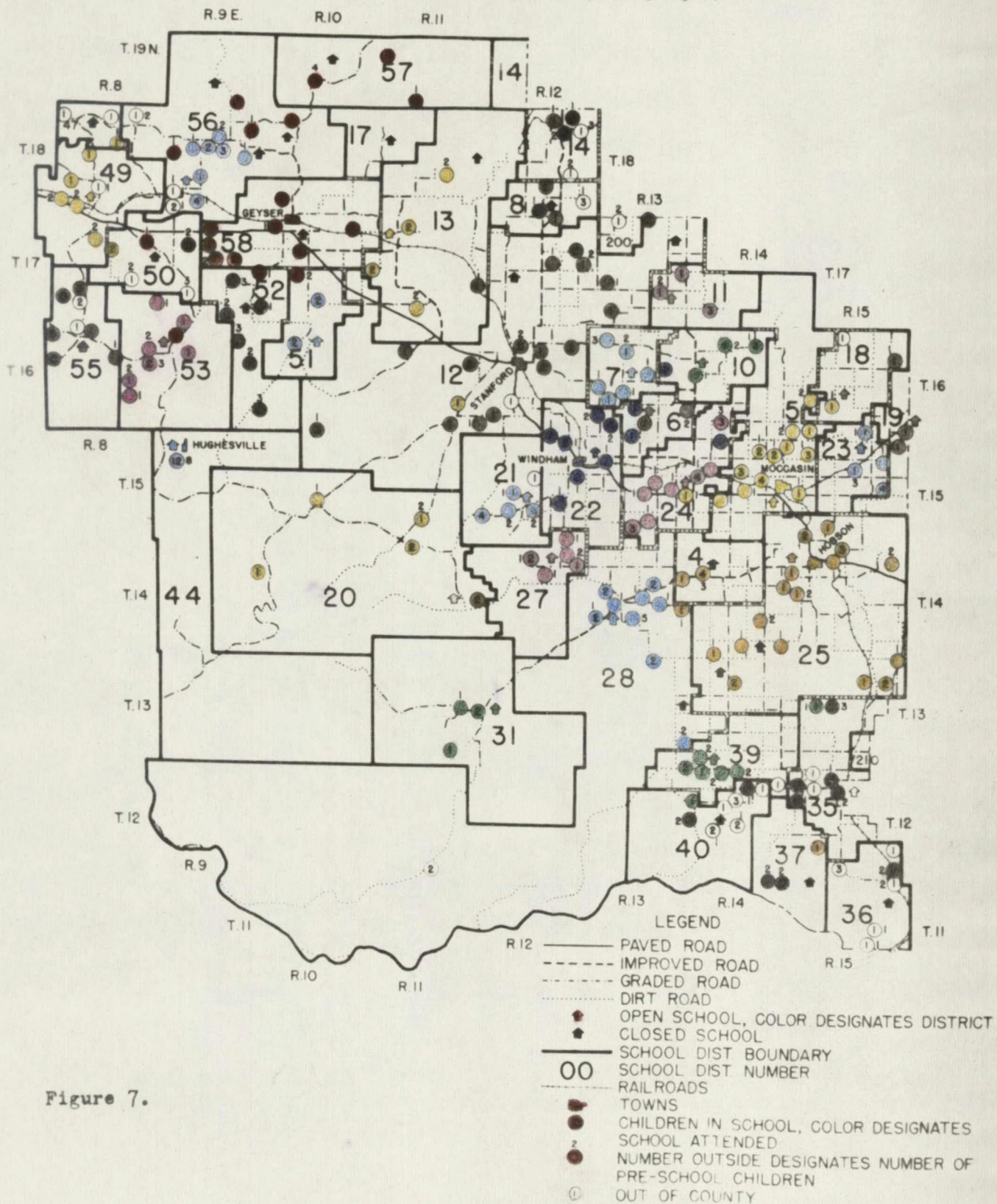


Figure 7.

interest to send their children to Windham and Stanford, respectively, or move in.

District 10.--When the roads are improved it will be possible to close this school, for there are only two families with pre-school children; a total of three children.

District 11.--By moving the school to the southeast corner of section 36, township 17, and range 13, it could very easily serve both the pupils of Districts No. 10 and 7 and those of No. 11 as well.

District 13.--With improvement in roads, it could well be possible that those attending Merino, No. 13, could attend Geyser and Stanford, respectively. A number of the children of the district are already attending town schools.

District 21.--All the families in this district live on a graded road which, with some improvement, could serve all families as a means of transportation to Windham.

District 23.--Since all but one of the pupils have at least 2.75 miles to go to school, it is possible that they could attend Kolin, No. 19, and hence dispense with the school in District No. 23.

District 24.--This school could be eliminated by the use of a bus or family transportation to Moccasin and Windham, respectively. This would require some road improvement to U. S. Highway No. 87, an all-weather road.

District 28.--This district could accomodate its present and probable future enrollment with one room instead of the two that it now operates.

District 53.--By moving the school to the southeast corner of section 11, township 16, and range 8, it is possible that the school in this location could accommodate the pupils from District 55, and hence the school in District 55 could be dispensed with. The other alternative is to transport the pupils from District 53 to District 55 and eliminate the school in District 53.

Because of road conditions, distance to school, and the number of pre-school children, there is little likelihood of eliminating the school in Districts 11, 15, 19, 20, 27, 28, 31, 39, 44, 51, 53, and 56.

However, there would be considerable saving effected by closing seven schools and using only one room, instead of two, in District 28. This, of course, would require time, for road improvements are needed as well as time for community readjustments and an educational program to show the benefits to be derived.

These suggestions as to reorganization were arrived at by considering road conditions (see figure 7), distance to other schools, future possible enrollment in all schools affected, and community considerations.

Probable Savings

Table XV illustrates the method used to arrive at the probable savings. The figures are rounded off, as they are only estimates compiled from table IX and Appendices A and B.

The savings will approximate \$6,608 for the elementary reorganization, and should reduce the county and district levies for the operation of elementary schools by 8.5 per cent (see table XV).

TABLE XV.--PROBABLE SAVINGS FROM REORGANIZATION OF ELEMENTARY SCHOOLS, JUDITH BASIN COUNTY

District number	Reorganization	Saving in instructional and operating costs a/	Less loss of teaching unit apportionment	Less increase in transportation costs b/	Plus increase in state aid transportation c/	Net saving due to reorganization
7	Family transportation to Windham and Stanford	926	50	187	51	740
10	Move school in Dist. No. 11, close No. 10	890	50	289	115	666
13	Family transportation to Geyser and Stanford	1,288	50	310	64	992
21	Family transportation to Windham	1,282	50	361	81	952
23	Family transportation to Kolin	948	50	230	51	719
24	Family transportation to Moccasin and Windham	1,323 d/	50	281	60	1,052
28	Close one room	870 e/				870
53	Family transportation to Dist. No. 55	981	50	425	111	617
TOTAL						6,608 f/
AVERAGE PER CLASSROOM						826

a/ Taken from table IX, based on 1939-40 data on expenditures and receipts.

b/ Maximum increase in costs of transportation according to schedule stipulated in Sec. 1010, Revised Codes of Montana, 1935, assuming a yearly attendance of 170 days.

c/ Estimates based on the schedule of rates adopted by the State Board of Education on April 12, 1937, as applied to a yearly attendance of 170 days.

d/ Estimated from curve of total costs in figure 4.

e/ Estimated salary of one teacher

f/ Reduction in mill rate for county and districts through saving will be 8.5 per cent of county average (see table VII).

PART VII. REORGANIZATION OF HIGH SCHOOLS

Analyses of the High Schools

Geyser High School.--This high school serves a large area, and there is little likelihood of abandoning it unless the roads leading to the main highway are improved considerably. Geyser also serves a large area of potential high school children.

However, with a marked improvement in side roads, it will probably be possible in the future to transport the pupils to Stanford. If it is found that the distance is too great for adequate use of busses, it is possible that dormitories could be used.

Stanford High School.--This is the logical place for a high school in the county. Stanford is centrally located and has excellent facilities and a plant that could very easily be enlarged. Without enlarging its facilities, it could physically handle the combined enrollment of both Geyser and Windham.

With an actual money saving, and certainly better educational facilities, Stanford could be made an excellent high school, by using the added revenue now used to operate high schools at Geyser and Windham (see table XVI). Stanford has good facilities for a bus line terminal and further use of dormitories if deemed feasible.

Windham High School.--The majority of the high school pupils in this district come from the country area surrounding Windham, either by bus facilities or by family transportation. With some road improvement and the use of reasonable bus facilities, the pupils could be transferred to the high school at Stanford.

TABLE XVI.--PROBABLE SAVINGS FROM REORGANIZATION OF HIGH SCHOOLS, JUDITH BASIN COUNTY

District number	Reorganization	Saving in instructional and operating costs a/	Less loss of teaching unit apportionment	Less increase in transportation costs b/	Less increase in new organization c/	Plus increase in state aid transportation d/	Net saving due to reorganization
5	Bus from Moccasin to Hobson	6,712	100	360	1,660	136	4,728
22	Bus from Benchland to Stanford	4,712	100	1,000	1,408	40	2,244
TOTAL		11,424	200	1,360	3,068	176	6,972 e/
AVERAGE PER SCHOOL		5,712	100	680	1,534	88	3,486

a/ Taken from table XIII, based on 1939-40 data of expenditures and receipts.

b/ Cost of a bus at 10 cents a mile based on estimates used by various school superintendents in Montana.

c/ Costs for additional expenses in schools to which pupils are sent. They include salaries of teachers, textbooks, supplies, health and auxiliary agencies.

d/ Estimates based on the schedule of rates adopted by the State Board of Education on April 12, 1937, and applied on a yearly attendance basis of 170 days.

e/ Reduction in mill rate for the county and districts through saving will be 19.5 per cent (see table VII).

LOCATION OF RURAL FAMILIES WITH CHILDREN IN HIGH SCHOOL JUDITH BASIN COUNTY, 1940-1941

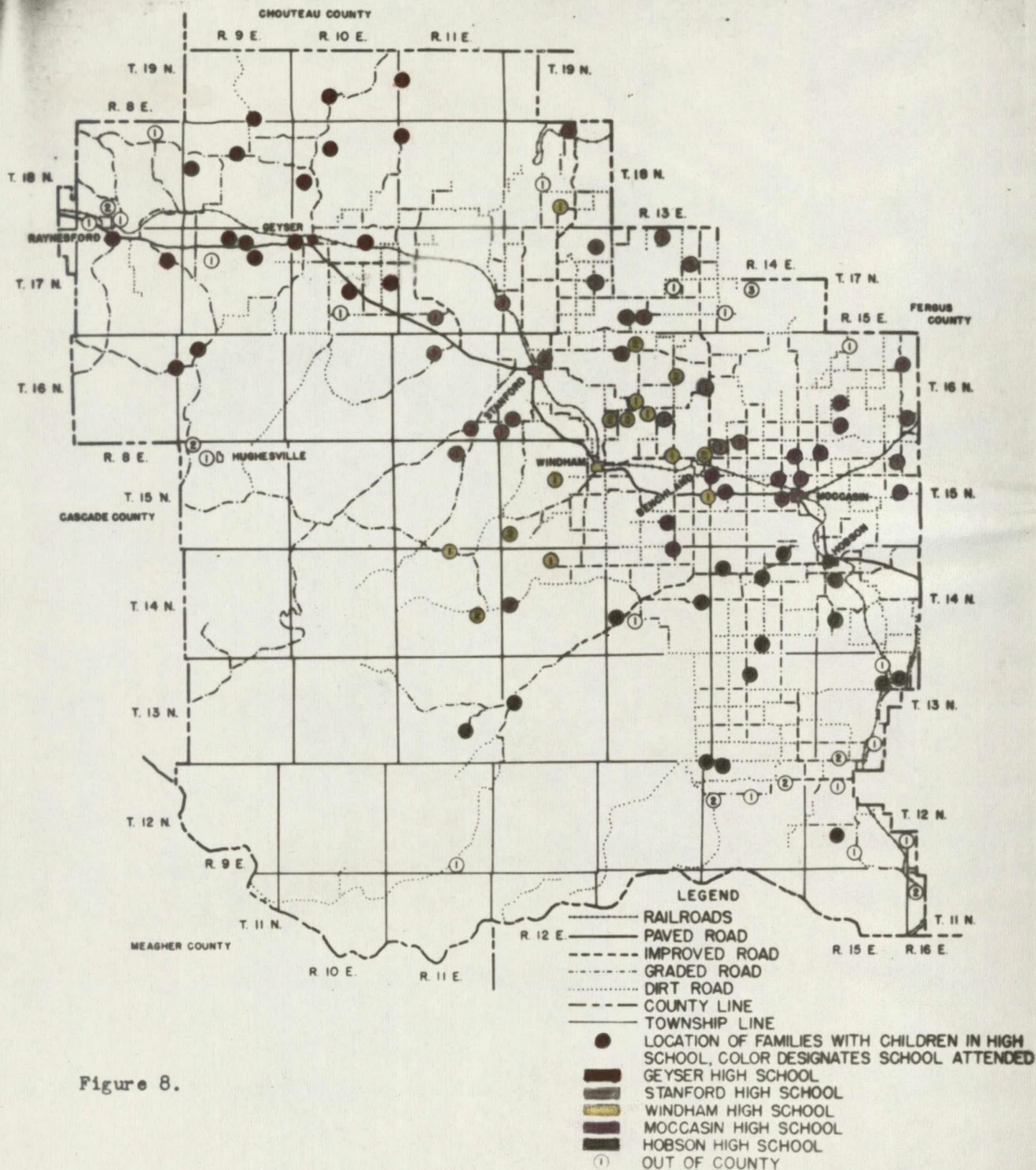


Figure 8.

Moccasin High School.--The same conditions are found here as at Windham. It is absurd to have a high school at Moccasin and one four miles distant, at Hobson. Two additional bus routes or the use of dormitories at Hobson would alleviate the condition of having two high school merely four miles apart on a paved highway.

Hobson High School.--Hobson is the logical center for a high school to serve the needs of this section of the county, for there are good roads leading to Hobson. The added expense of improving roads, adding new busses, or building dormitories, would be offset in time by the saving effected in closing the high school at Moccasin. Without any addition to the plant, Hobson could accommodate the added enrollment, as well as any future trends, unless exceptional circumstances arise.

Table XVI illustrates the districts to be reorganized, and a possible saving of \$6,972 or a reduction in the mill rate for the county and districts of 19.5 per cent.

The computations are estimates based upon material from table XIII and Appendices A and B.

PART VIII. SOCIOLOGICAL CONSIDERATIONS IN REORGANIZATION
OF SCHOOLS IN JUDITH BASIN COUNTY

The reorganization program presented in this thesis minimized the use of busses and dormitories wherever possible. In situations where busses and dormitories are an important part of the reorganization program, serious consideration should be given to the effect of these on the family as an institution and upon the children themselves. During the past two decades, there has been a marked decline of the institutional functions of the family, as for example, its economic functions. 15/

The solidarity of the family is a partial function of the length of time that the children are with the parents. Reorganization, if it leads to a greater use of busses or dormitories, will probably shorten the time that the children are with the parents. From the standpoint of family solidarity, it may be better for the parents to move with their children to the villages and establish a home for them rather than to use busses and dormitories. However, obstacles to this kind of a program are as follows:

1. A shift in settlement and land use patterns to be brought about temporarily through providing housing facilities for the families will be essential. A permanent measure will involve better land use in order to abandon the isolated settlements.

2. Provisions must be made for society to carry its fair share of the burden of readjustment through subsidies to enable the parents to

15/ Ogburn, William F. and Tibbetts, Clark, Recent Social Trends, McGraw-Hill Book Company, Inc., 1933, The Family and Its Functions, pp. 661 and 662.

establish a residence in the villages.

3. Community bonds will necessarily be broken down and new ones will have to be built. The new community consciousness can be formulated through organized community effort. This will involve sacrifice and concerted effort on the part of churches, clubs, and other communal organizations.

The effect of reorganization on the community would be significant. Without a doubt, the closing of some schools would lead to the virtual dissolution of the particular community. If all the families were to move with their children, community life could be continued in the village. This conditioning to the new mode of living might be accomplished through educational processes, enabling the family to adjust itself to the new mode of living or culture pattern. For this reason, caution must be used and time allowed for these readjustments before a shifting or closing of a school is decided upon. Every effort should be made to see that the bonds which hold the community together are not too quickly severed. The degree to which community life is disrupted will depend largely upon the fundamental problem of moving the parents with the children.

Until the parents are able to assume their proper share of the responsibility toward their children, the teacher must be prepared to carry an additional burden. Much of the counseling, advice, and guidance, formerly a parental duty, has been shifted to the teacher. This will require of the teacher that she be more community-minded and have a wider knowledge of adolescent psychology with its implications.

The reorganization program that has been suggested will for a time (until the parents have made the necessary adjustments) require teachers who are community conscious and are aware of their increased importance. They, in turn, can rightly claim better salaries and a more secure tenure.

PART IX. CONCLUSIONS AND RECOMMENDATIONS

1. Social changes have caused maladjustments in Judith Basin County, evidenced in the large number of small schools in relation to the size of the population.
2. Recent population trends indicate there is no need for added school facilities.
3. The high costs of a number of small one-room schools indicates that some should be eliminated, while others could be more economically run. Some cost over \$200 per pupil to operate.
4. A reorganization of the schools is needed to lower the costs and give more efficient education.
5. It is possible to close or reorganize eight one-room schools, at a saving of approximately \$6,608 or a reduction of 8.5 per cent in the tax rate for the county.
6. Two high schools could be closed at a saving of approximately \$6,972 or a reduction of 19.5 per cent in the county tax rate.
7. As far as possible, family transportation should be utilized, for it costs less than busses.
8. The Alberta plan, a modified county unit plan, could be used to lower the costs and equalize educational opportunity, the more important goals of school reorganization. In reorganizing, consideration must be given to the social effects. The plan recommended is flexible enough to allow for this.
9. In order that the reorganization might be incorporated into the present law governing county units in Montana, changes must be made to make it applicable to the present needs.

APPENDIX A

RECEIPTS BY DISTRICT ACCORDING TO SOURCE, JUDITH BASIN COUNTY, 1939-40*

District number	State and Federal aid	County levies	District levies	Transferred from other districts	All other sources	Total
4	\$ 133.71	\$ 564.53	\$ 500.03	\$ 129.60	\$ 17.79	\$1,216.06
5 a/	828.13	2,785.01	8,204.24	\$ 129.60	1,254.28	13,201.26
5 b/	1,429.23	5,782.36				7,211.59
6	100.22	338.71	315.41		4.97	759.31
7	157.52	338.71	496.27		45.79	1,038.29
8	33.48	225.82	309.91			569.21
10	175.78	489.26	112.85		97.74	875.63
11	212.91	564.53	65.42		13.51	856.37
12 a/	1,870.88	8,768.93	3,908.40	540.00	438.58	15,526.79
12 b/	2,287.25	12,721.18				15,008.43
13	240.39	602.17	933.58	129.60	6.33	1,912.07
14 c/	156.03	715.07	1,300.70		215.83	2,387.63
17	35.07	150.54	266.04		127.57	579.22
18	132.07	376.35	493.62		83.87	1,085.91
19 c/	125.58	338.71	381.95		573.86	1,420.10
20	187.69	602.17	134.58		40.28	964.72
21	203.99	564.53	634.32		21.28	1,424.12
22 a/	481.76	2,069.94	23,081.73	129.60	225.25	25,988.28
22 b/	406.35	5,782.36				6,188.71
23	89.08	338.71	196.60			624.39
24	403.30	1,543.03	2,104.08		324.64	4,375.05
25 a/	1,007.53	3,914.04	6,493.15		1,196.67	12,611.39
25 b/	728.07	6,553.33				7,281.40
27	33.48	225.82				259.30
28	338.48	1,129.05	431.85	302.40	230.31	2,432.09
31	177.78	526.89	134.36		5.30	844.33
37	137.67	413.99	96.03		3.10	650.79
39	124.76	263.44	621.36	43.20	29.11	1,081.87
40	66.97	451.63	244.13			762.73
42	33.48	225.82	113.56		77.45	450.31

APPENDIX A (Continued)

RECEIPTS BY DISTRICT ACCORDING TO SOURCE, JUDITH BASIN COUNTY, 1939-40*

District number	State and Federal aid	County levies	District levies	Transferred from other districts	All other sources	Total
44	128.13	526.89	594.86		112.38	1,362.26
47	125.02	188.17	124.79			437.98
49	280.68	1,091.42	1,298.25	158.40	65.13	2,893.88
50	248.60	639.81	541.22			1,429.63
51	179.36	564.53	309.75		38.65	1,092.29
52	62.91	263.44	89.76			416.11
53	172.76	376.35	410.35		24.06	983.52
55	105.81	376.35	247.63			729.79
56	528.88	1,430.14	1,803.32		305.60	4,067.94
57	121.06	225.82	464.54		13.68	825.10
58 a/	697.75	2,747.37	5,192.30	466.00	664.83	9,768.25
58 b/	653.92	5,011.38				5,665.30
TOTAL	15,643.52	72,808.30	62,650.94	1,898.80	6,257.84	159,259.40

a/ Elementary schools
b/ High schools
c/ Joint districts

* Source: Office of County Superintendent of Schools, Judith Basin County.

APPENDIX B

EXPENDITURES BY DISTRICT, ACCORDING TO PURPOSE, JUDITH BASIN COUNTY,
1939-40*

District number	General control & transfers to other districts	Instruc- tional	Opera- tional & Mainten- ance	Auxiliary agencies	Fixed charges, interest, capital outlays	Total
4	828.15	2.43		360.00	37.05	1,227.63
5 a/	1,441.60	4,499.86	1,304.08	2,467.30	1,838.23	11,551.07
5 b/	922.93	4,242.49	1,144.25	636.77	261.43	7,207.87
6	35.00	708.30	109.51	3.40	68.69	924.90
7	201.80	567.92	121.62	44.82	29.05	965.21
8	279.60	2.45		370.00		652.05
10	11.80	737.57	87.95	101.49	4.60	943.41
11	43.20	609.47	71.84	63.45		788.06
12 a/	1,258.40	6,970.06	2,336.97	1,508.65	2,472.12	14,546.20
12 b/	1,380.42	7,336.70	2,710.50	1,153.58	439.01	13,020.21
13	37.00	781.64	390.09	583.91	23.33	1,815.97
14 c/	43.10	850.66	19.54	135.00	2,369.85	3,418.15
17	20.00			12.75		32.75
18	97.73	625.89	115.84	40.91	40.28	920.65
19 c/	34.05	839.73	307.35	25.35	197.80	1,404.38
20	151.20	721.19	35.03	148.00		1,055.42
21	86.40	984.75	141.55	54.68	69.00	1,336.38
22 a/	96.75	2,325.44	1,144.19	402.65	23,420.79	27,389.82
22 b/	1,859.75	2,222.85	463.42	388.47	115.00	5,049.49
23	124.60	745.26	73.45	118.15		1,061.46
24	47.85	1,832.85	416.47	926.69	50.00	3,273.86
25 a/	1,356.10	5,276.32	1,298.37	1,039.20	2,837.72	11,807.71
25 b/	1,086.03	2,794.43	1,265.30	908.85	129.00	6,083.61
27	30.03			171.00	8.20	209.23
28	65.00	867.00	552.11	114.90	205.66	1,804.67
31	18.75	747.89	69.89	74.47	40.00	951.00
37	460.00		10.65	359.78		830.43
39	25.00	615.40	97.25	74.05		811.70
40	74.20	10.00	92.00	347.00		523.20
42				306.00	10.00	316.00

APPENDIX B (Continued)

EXPENDITURES BY DISTRICT, ACCORDING TO PURPOSE, JUDITH BASIN COUNTY,
1939-40*

District number	General control & transfers to other districts	Instruc- tional	Opera- tional & Mainten- ance	Auxiliary agencies	Fixed charges, interest, capital outlays	Total
44	37.40	861.76	109.77		79.90	1,088.83
47	132.22	2.00		277.12		411.34
49	35.27	1,694.25	1,299.66	212.51		3,291.69
50	153.60			901.23	30.00	1,084.83
51	103.30	527.19	107.15	45.65	30.00	813.29
52	67.00		73.79	270.00		410.79
53	77.30	707.05	89.60	222.78	71.15	1,167.88
55	30.00	672.47	74.43	3.60	18.00	798.50
56	524.20	834.70	273.98	1,854.98	77.94	3,565.80
57	246.00			540.00		786.00
58 a/	629.60	3,420.99	954.40	299.08	3,310.44	8,614.51
58 a/	1,406.90	1,982.44	1,097.86	550.00	513.87	5,551.07
TOTAL	15,609.23	58,521.50	18,459.86	18,118.22	38,798.11	149,506.92

a/ Elementary schools

b/ High schools

c/ Joint districts.

* Source: Office of County Superintendent of Schools, Judith
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