An Investigation of the Road Administrative System of Latah County

A Thesis

Presented in partial fulfilment of the requirements for the Degree of Bachelor of Science in Civil Engineering

Department of Civil Engineering

of the

University of Idaho

by

Ralph E. Perkins

and

Roy F. Tuttle.

1914.

SPECIAL COLLECTIONS
HE
356
122
136

An Investigation of the Road Administrative System of Latah County.

The object of this investigation has been to gather statistics concerning the cost, present condition, and system of management of the roads of Latah County for the purpose of finding out in what ways the money has been expended and what have been the results of such expenditures.

The work consisted for the greater part of gathering data in regard to the amount of money spent on roads in the entire county for the last three years. In doing this, all available records at the county Court House have been carefully worked over. These records consisted of the County Clerks segregation books in connection with the vouchers for all bills allowed by the County Commissioners. The cost of the different items under each main division could only be obtained from the original bills, therefore it was necessary to take each bill and list the different items separately.

These items were segregated and put down under the district to which they were charged. Items not charged to any one district were put down under "General Expense". This included such items as collecting poll tax, viewing and surveying, bridge contracts, right of way, and some road machinery.

After above data had been gathered and segregated according to districts it was again subdivided and classified as follows:-

> 1911 7546.72 120710

1912 1913

7138.35 9958.95

Programme and the second	1911	1912	1913
Road Machinery	1728.43	1923.86	2203.60
Tools	229.24	231.90	214.38
Powder	1150.76	1600.13	1468.59
Nails	156.72	125.60	164.10
Blacksmithing	505.15	658.07	587.05
Supplies	95.00	103.72	109.06
Right of Way	885.00	4359.00	3418.00
Viewing & Surveying	156.25	240.00	343.50
Culverts	3921.80	2850.66	3203.40
Gravel	50.00	50.00	432.90
Lamber	3399.60	2712.76	4422.90
Steel	12.75	•00	28.00
Bridge Contracts	3820.75	4202.50	8935.35
Labor	21693.70	32164.07	31435.69
Miscellaneous	536.76	39.75	226.20
Cement		33.95	224.15
Total	45890.63	58440.32	67375.82

These divisions, totaled and checked with the total expenditure for the year. This work was done for the fiscal years 1911, 1912 and 1913. The fiscal as used in this work is f from April to April in accordance with the County Clerks reports. The following table taken directly from the County Clerks books shows the total expenditures for the above years.

General Road Fund	1911	1912	1913
Overseers	8103.64	7157.35	9725.01
Machinery, Tools	3555.45	4669.07	4706.80
and Supplies. Right of Way	945.00	4415.00	3695.75
Viewing and Surveying	222.75	240.00	343.50
Appropriations	104.00	581.00	1041.08
Culverts	39.15.00	2877.41	3201.00
Sundries	69.50	50.00	46.15
Total	16915.34	19989.83	22759,29 V
Bridge Fund			
Bridge Material	3482.45	2790.36	4646.48
Bridge Contracts	3824.75	4195.00	8860.35
Labor	531.78	1979.10	371.80
Total	7838.98	8964.46	13878.63
Road Districts			
Labor and Team Hire	20849.53	29486.03	30342.50
Miscellaneous	286.78		395.40
Total	21136.31	29486.03	30737.90
Grand Total	45890.63	58440.32	67375.82

heads do not check in a majority of cases. This discrepancy is due to the fact that in resegregating the material, bills were often changed as it was thought that they came more appropriately under other heads. The manner of subdividing most of these bills was simply a matter of judgment and as may be seen there is a personal element entering into the making of the tables.

It will be noticed that some of the subdivisions in the above table have been subdivided while same have been combined in the table that we have used in this work. The first head, Overseers Salaries, is practically the same, in the above table. It consists of the money paid to the Road Overseers, themselves, for their services. The heading, "Machinery, Tools, and Supplies" in the above table has been split up into six distinct heads, viz, "Road Machinery", "Tools", "Powder", "Nails", "Blacksmithing", and "Supplies",

Under "Road Machinery" we have included all bills for road graders, scrapers, drags, plows, and heavy machinery. Under "Tools" we have listed shovels, picks, grub-hoes, axes, canthooks, and small implements wased on the road. The Reading "Powder" also includes fuse and caps. All items such as ante gr grease, chains, clevises, bolts, water-bags and files have been collected under the general head "Supplies". All bills allowed for labor, or labor & team hire have been put down under the heading "Labor" regardless of the fund out of which they were paid. This is classified in the records under the three following heads: - "Appropriations from the General Road Fund, "Labor" paid for out of the Bridge Fund, and "Labor and Team Hire" paid for out of the Road Distrcts Fund. While the above classifications are perfectly satisfactory, we have combined them under one head because by so doing it would be possible to see at a glance the total expenditures for labor and team hire.

We have put in our table two extra divisions, viz:
"Steel" and "Cement". Such Items as, collecting poll tax, auto
hire, salt, and glass for which there was no logical division,

have been placed under the head "Miscellaneous". Under "Bridge"
Contracts" are included only the actual contract prices of the
bridges. There was no way of finding out what part of the contract price went to pay for the pabor of constructing them.
The other headings used will not require any further explanation.

At a glance these items would seem to give a fairly good record of the cost of the roads for the successive years. A little study of the actual conditions, however, will show otherwise. The present road administrative system can be very much improved upon, As things now are it is a matter of guesswork to find out anything definite about how this money has been spent. Statting in with the first item, that of Overseers Salaries, we find listed here the amount of money each road Overseer has received for his labor during the year. There is no way of telling how much of their time has been spent in grading how much has been spent in dragging and how much has been spent in making other improvements on the roads. Almost \$10,000.00 were listed under this head in 1913 and we do not know just how it was spent. Some of the road overseers failed to send in a detailed account of the work done when the original bills were turned in to the County Commissioners. Bills were allowed which simply contained the number of hours spent by the road overseer on the road in his district.

The heading "Labor" is closely related to that of "Overseers Salaries". In 1913 over \$31,000.00 were listed under this head. This with the overseers salaries gives a total of about \$41,000.00. With this amount of money it would seem that

In some districts the general condition of the roads is good, while in other districts, where conditions are equally as favorable, the roads are not nearly so well maintained. Such conditions can not be blamed to the road overseers entirely as part of these can usually be attributed to the attitude of the people residing in the district.

After the above data had been collected an attempt was made to ascertain by personal interviews with the road overseers just how much of the materials used and labor adone had gone toward what would be called new improvements and just how much had gone toward maintenance of the roads, also how much machinery, tools etc were now available in their districts. Six of the road overseers, of districts lying near Moscow were interviewed. These districts included nearly all the territory within a radius of about ten miles of Moscow. On the north are districts 56, 30 and 24, on the east districts 55 and 35 and on the south districts 8 and 10. While these trips were being made to see the overseers, special attention was given to the condition of the roads passed over.

The road overseers with whom we talked were questioned in regard to the following: - The number of miles of road in their district. The amount of road machinery and tools available at the present time, The amount of dragging, grading and graveling roads and cost of each. Whether lumber was used for repairs or for new improvements. Besides these questions the overseers were asked for their opinion as to how the system of management of the roads might be improved.

In most cases the information received was not very definite. Such information as wer were able to obtain is given below. In district No. 8 there have been a number of concrete culverts constructed. There are 1 miles of broken stone road. In the construction of this the county rock trushed was used, local blue trap rock being crushed. There are about 42 miles of road in this district. Last year \$160.00 was spent on dragging, this being sufficient to drag the main traveled roads about 10 times. The district owns six steel drags and these are distributed along the road. Last year men were hired by contract to drag a definite amount of road after certain rainy spells of weather. It was found that dragging while still wet gave the best results. The roads in this district are among the best in the county and show what can be accomplished by skilful management.

In District No. 10 there are 23 miles of road. This year they are endeavoring to gravel about 3 miles. The gravel will be placed in about a 6 in. layer on the crown and feathering out along the edges making a graveled roadway about 12 ft. wide. The gravel costs 25¢ per cu yard for hauling, the material itself is donated. Last year about 40 days for a man and team were spent in dragging. Five hundred dollars have just been spent to out down the grade at the cemetery thereby permantly improving this portion of the road.

, In district No 30 there are about 15 miles of road. No definite information could be obtained as to how the money spent for labor had been used and nothing in regard to the lumber used. At the time when the trip was made to this district the overseer had a crew of men at work getting out rock and hauling it on a

stretch of road..It was stated that this was costing about \$1.50 a load on the road, exclusive of the overseers salary. It was also stated that a stretch of road that had been covered with this same rock five years before was now in very good condition. The roads that were seen on this trip were at the time in fairly good condition but looked as though they would not be so in the rainy season. The crown was not well kept up and there was absolutely no side drainage in places.

In district No 35 where there was about 35 miles of road it was stated by the overseerthat only \$250.00 were available in the Road District Fund for the coming year and that this along with what would be allowed him from the General Fund was barely sufficient to keep the roads in a passable condition during the year. He also stated that it was a very hard matter to get men & teams to work the roads when he wanted them, and that when he did get them they did not want to use their teams in any way but for hauling gravel or sand. They would almost refuse to put their teams on a grader, a plow, a drag, or a scraper. The roads in this district needed a good deal of work done on them to make them passable at all times of the year. What work had been done, however, seems to have produced good results.

In District No 55 the roads were found in very good condition for earth roads and showed the results of intelligent effort on the part of the overseer. The crown of the roads was in good condition, and drainage had been quite carefully looked after. There are a few miles of sanded road in this district.

More information might have been obtained if time had permitted.

In district No 56 with about 32 miles of road it was found that the roads in many places needed attention. Last year about one mile of road was gravelled. According to the statement of the overseer this was done at a cost of \$2.00 per cubic yazd for the gravel delivered on the road and spread. All lumber used in the district went for repairs. The overseer stated that about half of the work done duting that year on the road had been to crown the road and cut down hills. A total of eleven days had been spent in dragging the roads. No information could be obtained as to how many of the 32 miles on the district were dragged so no unit cost could be figured. Each days labor however cost \$5.00 making a total of \$55.00 spent. Very little information has been obtained as to the amount of money spent for new improvements and that spent for maintenance. Lumber would be one of the easiest items for a road overseer to classify in this regard. This is not the case however as it was found that none of them could tell exactly how much was used in either way. In 1913 about \$4000.00 was spent for lumber alone and this with the \$41,000.00 for "Labor" and "Overseers Salary" gives a total of \$45,000.00 spent during the last year. As has been stated there is no definite account of how this money was spent and what was accomplished with it. Any well organized business spending so much money per year could tell definitely how every dollar was used. The taxpayers are spending as much for good roads and at the same time no one can tell them exactly how their money is being spent. These three items are not the only badly managed ones. Take Road Machinery, for instance, each road district must have a full equipment of scrapers, graders, plows, etc., This equipment lies idle the greater part of the time

and idle machinery means a waste of capital. About \$200.00 are spent each year for picks, axes, and small tools, the most of it being spent for shovels. From the large number of such tools purchased each year, it is readily seen that there is quite a little waste in this item alone, either due to the fact that they are not properly used or because they are lost or carried away.

From the above it is readily seen that the expenditures for roads in this county are on a more or less indefinite basis. This is not the fault of any one man or group of men, but simply the fault of the system itself. If there was an experienced man in charge of all the road work to give instructions to the overseers in regard to the proper time and methods of working the roads; if the road overseers were required to take better care of their machinery and tools; and if there was more co-operation between the road districts it would mean a great saving to the county and a better class of roads.

By comparing the totals for the three years it may be seen that the money spent on roads has been increasing about \$10,000.00 each year. This is a healthy sign of the desire of the people for better roads, but the question arises is the condition of the roads becoming better in proportion to this large increase in the amount of money spent on them.