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E. H. Vickers

STATE BOARD OF TRAVEL

BLUEFIELD 10, 17, 18

Our Roads, Resources and Possibilities

CHIEF ROAD ENGINEER'S ADDRESS

The Hon. A. D. Williams, Chief Road Engineer, State Road Bureau, addressed the Board on the subject of "Good Roads," speaking as follows:

Mr. Chairman and gentlemen: As the head of your Road Bureau, I feel not egotistical in saying that the most important subject that confronts the people of West Virginia today is the question of highways. It is an astounding fact to compare the per ton mile cost of this country and countries abroad. In Germany, the cost of transporting a ton of freight one mile is eight cents; in France, ten and one-half cents; in America, as estimated by the Department of Public Roads, twenty-two and seven-tenth cents per mile; while in West Virginia the per ton cost, according to the best figures I have been able to obtain in the limited time I have been head of the State Road Bureau, ranges round thirty cents. Here I wish to cite a little incident of my own experience, bitter it was, but nevertheless true: It became necessary in the month of February, 1911, to haul 125,000 feet of lumber a distance of four miles. The condition of the roads were such that with two horses weighing 1,300 pounds each, we were able to transport but one ton, or 400 feet, and make two trips per day. The team was costing \$5.00 per day, which made it cost us \$2.50 per ton for four miles, or 62½ cents per ton per mile. The county in the following spring spent \$6,000.00 on this road, eliminating the bad grade and macadamizing the soft surface of one mile, which affected the entire road. Following this, we were able, with the same team, to transport 1,500 feet of lumber per load, and in lieu of two loads per day, were able to make three, or 7½ tons for the same cost as two tons over bad roads, or 66 2-3 cents per ton for the four miles, or at a cost of 16 2-3 cents per ton per mile, as against 62½ cents per ton or bad roads. On the first hauling it was costing us \$6.25 per thousand feet, while by the latter, we were only paying about \$1.11, or a saving of \$5.14 per thousand. In other words, had we been compelled to haul two million feet of lumber over this road, we could have builded the improvement made by the county, turned it over to the county at the end of the period, and been over \$4,000 ahead. I give you this as one example, but there are thousand of them to be found in every county in the State.

I want here to impress upon this body that it is not so much the cost of good roads that we should consider, but to have you impress upon the people what we are paying for bad roads.

There are three things essential in road construction: to improve the surface, reduce the grades, and shorten the length. By reducing grades and improving the surface, we materially increase the speed, and by increasing the speed we reduce the length of the road.

GRADES

In West Virginia the contour of our surface brings about many grade problems. These problems are engineering problems. They require the consideration of trained minds, and of men who are devoting their life and

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time to the subject. A great mistake has been made in this State in the past by believing that any man was competent to locate a road. This has cost us unestimatable millions of dollars in construction and in deficiency of service from the roads after construction. It has been estimated that a horse of 1,200 weight, by exerting a force equal to one-tenth of its weight, can draw a ton on level earth road; the same horse, exerting the same force against the collar on a 5 per cent. grade, can only draw one-half ton, and on a 10 per cent. grade only about 750 pounds. The question of grades on earth roads is serious, but on roads of metallic surface is more so, for it is estimated and practically proven that the same horse that could draw one ton on level earth road, on a macadam road can draw 2½ tons, while on a 5 per cent. grade on macadam road can draw but 1,600 pounds, and on a 10 per cent. grade only 960 pounds. Thus it is plain to be seen that by macadamizing or bricking heavy grades, we gain but little or nothing. At the same time, the question of up-keep is much greater when we increase our grades. The danger of horses falling and other objectionable features are materially increased by putting hard surfaces on bad grades. Therefore, the most essential thing to be considered in West Virginia roads, and the first thing, is the question of grades. But few grades—that is, bad grades—are necessary in the roads of this State. I say this from an engineering standpoint, because having traveled over the greater portion of the State, I feel safe in saying that it is quite easy for us to eliminate many of the bad grades if we will apply a little thought at the right time.

ROAD SYSTEM

Along with grading our roads should come a system that will not only be of material advantage to the locality in which the road is built, but the saying, "No man lives unto himself alone" is very applicable, and no county can build a road for itself alone—it must also build for its neighbors. Therefore, I have recommended to the different County Courts, and I ask the co-operation of this body and every other patriotic organization and citizen of the state, in seeing that every county has a system whereby the County Court of each county will confer with the County Court of the counties adjoining, and start their road improvements on the roads leading from each county seat in the direction of the county seat adjoining them, so that when each county goes to the line there will be the other road, and by this method it will only be a short time until we can have our roads connected up from the Eastern to the Western borders of the State, and from the Southern to the Northern boundry.

SHOULD BACK THROUGH ROADS

I feel further that this organization, being state-wide should consider some state-wide connections. A road beginning at Bluefield, or Welch, and passing centrally through the state, uniting as it passes our State capital with our other important cities, would be of inestimable value to the State. It would be a material development from a financial standpoint, and it would help more our development from a social standpoint. It would form a bond whereby the people of the Norfolk and Western region would feel that they were brothers to those in the Northern Panhandle, and vice versa. The reopening of the James River and Kanawha pike is assured and by your co-operation, can be done next year.

AGRICULTURE DEPENDS ON ROADS

The agricultural resources of this State have not been developed as they should be, and can not be developed until first we have a system of roads that will encourage their development. It is but little encouragement to the farmer five or six miles out of town to put out a field of any perishable product when he knows it is impossible for him to deliver it and get back out of it dollar for dollar of the money he expended in producing it. The example of the farmer 2½ miles from Oakvale and 16 miles from this place, last winter having in his cellar rotting, because he could not deliver them, 100 bushels of potatoes, while the people of this place were consuming potatoes raised in Ireland, transported across the Atlantic ocean and hauled inland 360 miles from Norfolk, should be

noted. Here we are suffering an economic loss that cannot be estimated. We are not only paying the cost of production, but we are paying the excessive cost of transportation. This money is going out of West Virginia. We are exhausting our own resources, and squandering them by not being able to keep in West Virginia our share of the revenues produced by developing them. We have, since the year 1906 produced 1138 billion feet of gas. Of this amount we have exported 650½ billion feet. In 1912 we produced approximately 220 billion feet and exported 140 billion feet. We are producing approximately 12 million barrels of oil annually, practically all of which is going out of the state each year, depleting our resources that much. During the year ending June 30, 1913, we produced 61,770,350 gross tons of coal, and shipped from the mines 55,494,327 gross tons, valued at 97 cents per ton. From 1863 to June 30, 1913, there has been mined in West Virginia 774,039,424 tons of coal. You may ask what has this to do with roads, and I will answer you that it has nothing to do with roads, but I want to call to your minds the fact that there is this much of the material resources of the State of West Virginia that are gone forever. We are now depleting our coal area at the rate of about 1000 acres per month. The man who delves into the sides of the hills and brings therefrom a ton of coal, adds to that ton of coal the value of his labor, but in getting out that ton of coal he leaves a vacuum. The man who drills a hole down into the earth and extracts from the crevices of the rocks the gas and oil, likewise has brought forth by reason of his labor, hidden resources, but in bringing forth these resources he has thus far depleted the material resources of the State. The man who goes upon the hillside and fells the trees of the forest, does not add to the material wealth of this State, because the tree was there, the coal was there, the oil was there, the gas was there, and in place of each one of these a vacuum remains. But he who rises in the morning and with his hoe goes forth into the field where he tickles the soil so as to cause one grain to bring forth many grains, has added to the material resources of our State, because the soil is still intact; everything still remains, and he brings forth many fold to be laid into the lap of a wanting public.

We are today furnishing the fuel to turn the spindles of Cincinnati, Columbus, Cleveland, Youngstown, Pittsburgh, Cumberland, Baltimore and other cities, and from the crevices of the rocks in this State we are lighting the streets, kitchens and parlors of our adjacent States. Each day and each night, we are depleting our resources, and getting but little returns. Would it not be a wise thing for West Virginia to make some provision whereby the State and Cities adjoining us, which are drinking at the bosom of our resources, may pay back to us in some measure something that will help to improve our roads, and better our home conditions? The time will be here when these resources will be gone; West Virginia will then be a poverty stricken State, her farms will be undeveloped, her roads will be unbuilt, and her children will not be educated as they should be, unless this body and other men of this generation take upon themselves the responsibility of trying to make arrangements to protect the interests of those who must follow us. A production tax on oil and gas for the purpose of constructing roads in this State, would be a wise measure, because this tax would not effect the consumer in West Virginia but very little, as 61 per cent. now goes and more later will go out of the State. This would help to bring back into the coffers of this State thousands of dollars that go away from us at the present time, if our roads were constructed so that our farmers could raise what we need. We are allowing our own resources to go out to help develop the manufacturing and industrial interests of other states at a sacrifice to us and at the same time we are spending what little money we get from these resources to other states for food stuff produced in other states. Thus our sister states are getting the benefit of the taxes from the manufacturing interests supported at our expense, and they are getting the benefit of the money for their agricultural interests from our coffers. It is time, gentlemen, that we wake up. The income from our coal and gas shipments last year was around sixty million dollars; this combined with the net returns from our oil does not exceed eighty million dollars, and of these amounts we send beyond the State for food stuff that could have been raised within this State, about forty million dollars, and this forty million dollars worth of food stuff, of the majority of it, would be raised in the State, were the roads of our State so that the farmers of the State could market the product of their farm. Bad roads not only interfere with the marketing of our farm products, but they materially decrease the crops planted by reasons of the farmers being unable to get fertilizer and other material at the time when needed. Thus the high cost of living.

I give you these figures for your own consideration. Take them home, digest them and help solve the problem.

OUR RIVERS

There was once a time when it was considered that the rivers of the country were its highways. Years ago the method of transporting products by water was the only one we had. It is only in the last few years that the people of this country have become aware that there are other valuables in the water courses of our country. There are upwards of 5 million horse-power going to waste in the streams of this State, which will some day be developed, and which our legislature took steps at the last session to safe-guard. But while this is true, our National government seems to continue to think—or our politicians for purposes of self-advancement continue to make it think—it should continue to spend money for rivers and harbors, claiming that they will advance the agricultural and business interests of the country.

Since the year 1900 to and including the year 1913, there has been appropriated by the U. S. government \$382,144,201.82 on rivers and harbors. Of this amount \$17,448,395.34 was expended on the Ohio river, \$377,772.00 on the Little Kanawha, \$1,278,057.35 on the Great Kanawha, \$1,405,829.00, on the Big Sandy and Tug Fork and \$155,362.54 on the Monongahela. These sums, with some smaller amounts on the smaller rivers, make a total of \$20,776,695.68 and according to the report of the Department of Mines, June 30, 1911, of the tons of coal shipped by water, there were transported over the Great Kanawha 985,354 net tons of coal, over the Monongahela 1,064 tons, and over the Ohio river 28,554 tons. The agricultural products shipped over these rivers were so small that I am unable to give you any estimate, but I feel safe in saying that taking into consideration the amount of money appropriated for rivers and harbors in West Virginia, and the amount of tonnage shipped over the water courses, and the benefit derived therefrom, that the same amount of money applied upon our highways would have been a thousand fold more valuable to our people. I understand there is in our audience this evening one member of Congress from this State, and as I know the gentleman, I believe he is interested in our highways. Therefore I would say to Mr. Sutherland, and to our congressmen and senators in the United States Congress and Senate, that these figures command your attention. They are not guess work, but have been obtained from the Department of War, over the signature of the acting Secretary. I ask that you consider them, and get the people of West Virginia to consider them, because it means a great deal to this country. The total national appropriations since 1900 for rivers and harbors mean an expenditure of \$3.82 per capita, for every man, woman and child in the United States, based upon a population of 100,000,000.

ARMY AND NAVY COSTS

There are other expenditures in this country that need some consideration besides our rivers and harbor bills. From the year 1900 to and including the year 1912, our army, exclusive of the United States military academy, and the organized militia of the different states and territories and the District of Columbia, which under a rule of the Department were held not to form a part of the Military establishment, has expended \$1,084,727,583.36 or \$10.84 for every man, woman and child in the United States. An army may be necessary—it is necessary, but in times of peace could not this great organization, this masterful expenditure, and the splendidly trained men we have in this service, be used in the construction of a system of National Highways, and thus better the country. We need national roads from the standpoint of Postal service and of union. We have expended on our Navy for maintenance during the same period, \$654,356,014.99, and we have expended in the same period for naval equipment \$414,672,273.70, or a total of \$1,069,028,288.69; or a grand total of \$2,535,900,073.87, including rivers and harbors, or a per capita of \$25.35 based on a population of 100,000,000.

Taking the total amount \$20,776,695.68, appropriated for rivers and harbors in this State, and divide it by the number of farms in the State 96,685, and we find an average expenditure of \$214.85 per farm. The average value of these farms according to the census of 1910 is \$3,225.00.

All the comment I have to make on this is, does it pay? Could not a part of this money have been expended, or the energy acquired by this money been expended to better advantage towards bettering our highways, which would be bettering our financial, social, intellectual and moral conditions.

West Virginia is not only an agricultural and mining State, but is a State blessed with indescribable scenic beauty. Our hills and valleys lend enchantment to the view of him who seeks to admire the handiwork of God; so impressive that when we pass, and distance separates us from our native land, the vision still lingers, and we can sing, "Oh ye West Virginia hills, how majestic and how grand, and distance separates us from our native land, the vision still lingers, and we can sing, "Oh ye West Virginia hills, how majestic and how grand, with your summits jathed in Glory like our Prince Emanuel's land."

It is estimated that \$200,000,000 of American money annually goes to Europe by tourists. Switzerland spends thousands of dollars each year keeping up her roads and constructing others, in order that the beauty of its scenery may leave its impression on the tourists. Its scenery—its hills and its crags are its wealth. The same is true of West Virginia, but more than Switzerland has West Virginia to boast of her thousands of springs imbued by the Great Physician of Time with the health giving and life enervating properties. Ponce De Leon, in his search for the Fountain of Youth, traveled too far to the south. Had he beheld the gorgeous scenery of West Virginia, bathed in her salt, her iron and magnesia waters, drank from her sulphur, alum and chalybeate and other healing springs, he would have been able to have realized in part his dream, or could the traveler stand on the crest of one of our hills and behold, in the doorway of a mountain home, an Anglo-Saxon mother nursing her own babe at the fountain of patriotism, his real heart would beat with the impulse that prompted John Howard Payne to pen "Home Sweet Home."

The State of Colorado estimated that in 1910, 6,000 tourists passed through that State, and left with its people three million dollars. If West Virginia developed her roads so that we could pass from East to West and from the North to the South, and all through our State, this amount can annually be multiplied by 10. We have advantages to offer that no other State or place can offer. We are closer to the great populated sections of the country, we are nearer the great Atlantic coast, and many tourists from abroad will come here when once the people know what West Virginia contains.

GOOD ROADS

The report of the Committee on Good Roads was presented by Chairman Howard Sutherland, and is as follows:

Your Committee on Roads is able to make a better report to you and this honorable body at this meeting than it has been able to do for some time.

Your committee takes pleasure in saying that the Legislature of the current year, ably assisted by Governor H. D. Hatfield, has done a great deal toward improving the road situation in West Virginia. In the first place, it passed a law re-establishing a State Road Bureau, organizing it along modern lines, providing for instruction in road building and for the preparation of road materials, for assistance to county road authorities, and for the use of prison labor on the public roads, and amending, in some other respects, the laws of the State relating to roads. While some of the features of this law might not be considered ideal in every respect, yet it is distinctly taking up the work of bettering our road conditions in West Virginia, where the Legislature of 1911 failed by its repeal of the law which created a State Road Bureau, and the law providing for State aid. While a State aid law has not as yet enacted, it is quite probable that the sentiment for such a law will increase to such an extent that, within the near future, a wise State aid law will again be placed upon our statute books.

In addition to the general law above noted, the Legislature passed several other laws relating to the subject of good roads, which it is hoped and believed will still further benefit our public roads.

An immediate present benefit is expected particularly from these provisions of the present law, which provide for the use on the public roads of prisoners confined in our county jails. It has been the experience of all States that have tried this method of employing prisoners that it has worked to the advantage of the several communities in which these men were employed, by providing a nucleus for a permanent road gang. Much work has been done already in the State of West Virginia since the law went into effect by its county prisoners in the several counties. Some of the counties are not co-operating in this matter as

they should, and it may be necessary to enact additional legislation along this line.

The organization of the State road bureau has been made upon lines which have worked satisfactorily in other states, the office of the bureau being located at Morgantown, and the system having been correlated with the State University, which will be continually called upon not only to educate the youth of our State in the science and practice of better road building, but will, from time to time, be called upon to analyze and pass upon the road materials offered throughout the State. In other words, our present state road department, and its very able chief road engineer, Mr. A. D. Williams, will have the benefit of the scientific aid of the State University wherever and whenever that aid can be utilized to advantage in any branch of the state road work. This will be of tremendous advantage in the work, since the manner of road building is not only distinctly practical, but is also largely scientific in its nature, and many of the failures that have been made, and are likely to be made, are and will be the result of the failure to apply scientific information and principles where they were most needed.

The people of West Virginia, the Legislature, the Governor, and particularly the West Virginia Board of Trade, are to be congratulated upon the steps forward that have now been taken toward reinstating upon the statute books in effect some of the laws that were repealed by the Legislature of 1911, of which a report was made to this body at the Moorefield meeting in the fall of that year, and upon the new legislation that has been passed. While your committee did not have a bill introduced at the session of 1913, yet the sentiment created and the continued agitation of this subject by this State Board of Trade, its officers and members, individuals and officials, and by its committee on good roads was no small factor in the passage of these laws. Your committee held a meeting at Charleston during the last session of the legislature, and urged the passage of Good Roads legislation in general, and after thorough examination and study of the bills offered urged the passage of the general bill which was finally passed. It was particularly pleasing to perceive that public sentiment had produced a marked change in the attitude of some of those who saw fit in 1911 to deal a body blow to the cause of Good Roads and stop all progress for two years by repealing some of the Good Roads laws passed in 1909. We welcome the assistance of these and all others whose services are now enlisted in the cause, and predict that uninterrupted progress will now be made.

It must be understood by all those interested in this important subject that progress will necessarily be somewhat slow and that only a feeble beginning has been made in the direction of permanently improving our main thoroughfares and bettering the condition of our ordinary dirt roads which will ever be our principal problem. In approaching this subject your committee wishes it distinctly understood that it does so solely from the standpoint of the greatest good to the greatest number and not from the standpoint of any particular camp of good roads enthusiasts. It is our belief that it is of first importance to so develop our roads as to best serve the agricultural interests by providing better roads whereon the products of the farm may be economically marketed. A proper co-relation of these county and district roads will eventually afford a ready means of inter-county and even inter-state communication so that the various sections of the State may be more closely welded together, and after awhile permitting our people to visit other States and permitting those from other States to come among us and become familiar with the wonderful richness and beauty of West Virginia.

The problem of more cheaply distributing the products of the farm to the railroads, the towns and industrial centers is one that affects not only the farmer bringing him greater efficiency and prosperity but affords quite as much every human being engaged in every other branch of industry as well. There is no intrinsic reason of soil or climate for our sending forty to fifty millions of dollars every year to other States wherewith to purchase farm products of the simplest and most elementary kind. If an accurate investigation were made which would include all food stuffs for man and beast and only such as can be raised and prepared for market here in West Virginia, that is to say all the hay and grain, and all the canned goods and other food stuffs and other products of the farm, the figures would be even more astonishing. Under present road conditions here it is cheaper to haul these products hundreds of miles by railroad or water than to haul them a very few miles by wagon, in fact the latter method for considerable portions of the year is absolutely impossible.

West Virginia over most of her area has made less progress with reference to her roads than with reference to any other important factor of her development. Her educational and industrial development has been rapid and general, but we need only travel a few miles within the confines of the State to find our roads and our road methods as primitive and archaic almost as they were several generations ago. In some localities, as on some of the old toll roads, the conditions are actually worse.

The problem before us would be appalling and most disheartening were it not for the fact that public sentiment is at last becoming aroused to the true importance to the State and to every interest in it of bettering our road conditions. The part our West Virginia Board of Trade has taken in this campaign is something that all of us here, and our absent members, can be proud of, but our work has only just begun. We have again a State Highway Department which will unify and give impetus to road work throughout the State, besides collecting and disseminating useful information to all interested practically or theoretically in the subject. We should co-operate with that department in a persistent campaign of education to the end that our people in the remotest corners of the State may understand the dollars and cents value to them of good roads, and be willing to build and maintain them. Our children in our public schools should be taught the economic value of good roads, and the rudiments of better road building and maintenance. We have the example of States on every side of us that have taken up this subject vigorously, and who are now spending millions to our thousands for road building. West Virginia can and will meet this emergency and thereby rise to new greatness, agriculturally, industrially, educationally, socially and morally, for good roads bring development along all these lines and others not named.

We need a State Aid law, a further development of our present laws permitting or rather requiring the use of all our convicts and prisoners in connection with some feature of our road work. These and other problems will be worked out by our State Road Department, and we must co-operate. We want also, if it can be obtained the co-operation and assistance of the National government in the construction and maintenance of some of the inter-state roads that cross our State from border to border.

And to all those present, and to those elsewhere, who desire better road conditions in West Virginia, we suggest that you pull your full weight for good roads, and educate, educate, agitate, agitate.

