

Colorado Highways

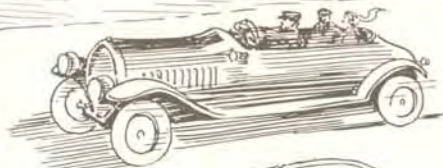
BULLETIN

Issued by the State Highway Department



Jack Frost Paints the Hills of the Range a Dazzling White. Scene Taken on the Mt. Lookout Road in Jefferson County, Which Gives a Typical Illustration of Highway Conditions in the Mountains in Winter Time.

December, 1918



Good Roads and Development of Colorado

By Cass E. Herrington, President Colorado Development Association

ARE there those in Colorado who would attempt honestly to debate the proposition that good roads do not go hand in hand with the development of a community, commonwealth or nation?

It would seem so, for I have been requested to state here what seems to me a truth so plain that it cries out for action instead of dispute,—namely, the fact that good roads for Colorado mean a quicker realization of the great program of the Colorado Development Federation, which has undertaken as a patriotic and timely duty the crying of Colorado's woes before the government and nation, with a view to enhancing the natural and potential resources of this state, in mining, agricultural and industrial. It is therefore clear that were there not those who have not given serious attention and thought to the road program of Colorado, there would be no need or place for this article.

However, I prefer to believe that the lethargy regarding better roads in our newly developing state is due primarily to the fact that the mass of people look to those whose assumed duties carry them into intimate knowledge of the weak spots in their program, for their opinions. To those, if there are any, who oppose the expenditure of more money for Colorado roads, I speak especially, and secondly to those who have observed that commerce follows good roads and need only the incentive of a great immediate need for action, I ask your consideration.

Is there a more satisfying piece of handiwork than a road well built? The good ones we pass over with a whirl, our attention centered upon the business or pleasure at its end. But a bad one, well, we are first delayed, and be it farmer, merchant, doctor or who, every delay costs thousands of dollars and perhaps lives every week. And as for disposition, we can never eliminate that quite in the bargaining table of human dealings.

So as the first proof that civic and community pride exist along its way, there is nothing like a good road, for it is the first factor encountered in transit to or from a point. Artists paint them in their pictures for the obvious reason that chuck holes jounce the taste.

But speaking of abstractions about roads, we must consider them from the standpoint of tourists, one of the chief annual crops which spring into being here. And everyone in Colorado is on the receiving end of the tourist business. Economically we will be foolish if we do not encourage the tourist business from a selfish standpoint and from that of sharing our natural pleasures with all the world. But a tourist is usually cramming a lot of sight-seeing into his ten-day vacation and so it is obvious that if he cannot go romping off as he pleases without delays from bad roads in Colorado, he will go to California or Texas to spend his money. Being interested in tourists and knowing his ways, this federation would be slacking in its

duty to Colorado if it did not try to please him after he came. The best way is with better roads.

Now we cannot say "Colorado" without thinking "development." In this great reconstruction period following the great world war the two must be synonymous, or we will find ourselves behind in the broadening trade and commerce movement to come.

The inevitableness, also, of a future vast population is cried from the census reports of every community in Colorado. We are growing, but we have not yet scratched the surface of our state.

First in our mind at this time, of course, is the soldier. What of him and his future? The Colorado Development Federation is laying a program to influence thousands of soldier boys to Colorado, under the plans of Secretary Lane at Washington, but what have we to offer him except cheap land?

The soldier comes with little to start with, perhaps a few hundred dollars. He can hardly buy the developed farms because of the price. But there are thousands and thousands of acres of splendid land in this state that lack only the good roads as arteries of travel to make them valuable. If he is too far from market or on an impassable road, we are offering him a losing proposition from the start. For if the roads from the farm to the town are impassable, what's the use of the town?

To become still more concrete, a great government hospital was secured for Colorado, and forty-eight buildings have been constructed under severest tests of bad roads. How many thousands of dollars more do you think that hospital cost because of the roads which often caused the slacking of business or the doing away with hauling altogether for a period? It would be interesting to know. But certainly it is true that Major W. J. Cameron constructed that hospital at a greatly increased cost and completed it on time not because of but in spite of the roads. Such great projects handicapped in this manner cost you and me a lot of money in a lifetime in additional expense. And in the end the roads about that hospital will have to be built.

I am reminded of a story told at that hospital at the expense of Colorado's roads. An officer was winding his way over the bogs caused by a recent rain. A hat he recognized as that of the orderly who carried the mail lay in the road. He kicked at a good one and was astonished when from underneath the hat came the ejaculation, "Ouch!" "Well for the love of Mike, is that you Bill?" said the officer. "Yep," was the reply, "I'm on my motorcycle."

The government is now being urged to build one of the great nitrate plants here, which it is proposing to build over the country in six places to make fertilizer. First,

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Embargo Raised on Road Building in U. S.

WITH the conclusion of the armistice, the Highways Council of the United States has virtually passed out of existence and wires received here on November 14 notified Commission T. J. Ehrhart of the State Highway Department that there would be no further restrictions placed on road-building by that body. Further than that no budgets will be required by the Highways Council, as ordered in the now famous Bulletin H. C. 3, and those cities, towns and counties which have not yet completed their work will not have to proceed further, although the plan is one which is worth while in times of peace from the standpoint of the community.

The releasing order sent out by L. W. Page, chairman of the Highways Council, was first contained in a telegram later supplemented by a letter which is printed herewith in full for the information of all road builders in Colorado:

To the State Highway Department.

I wired you today as follows:

“United States Highway Council announces no further applications need be made to it for approval of highway projects, and that previous disapprovals are revoked, and pending applications require no further action. Procedure in securing materials and transportation should follow normal practices. Removal of restrictions does not affect highway bond issues which are by law under control of Capital Issues Committee. State Highway Department will not be asked to submit programs for next year’s work.”

Commenting upon his wire, Mr. Page then says:

“This action has been taken as a result of the general release of bituminous road materials by the Fuel Adminis-

tration and the general release of other materials, except steel, by the War Industries Board. The use of steel in highway structures is still under restriction, and it is impracticable at this time to furnish information concerning the future control of the use of this material for road purposes. The suggestion is made that if steel and iron products are required for highway purposes, it may be

practicable to obtain them with minimum difficulty if the dealer from which they are ordered will state that he will not replenish his stock for the remainder of the year, provided he is authorized to fill this order.

“State Highway Departments will please notify all applicants of this decision and not transmit copies of HC-3 to the Highways Council after this.

“L. W. PAGE,
“Chairman.”

Road builders are thus left in exactly the position they were in previous to the restraining order save for the limitation on the use of steel.

No immediate effects will be visible in Colorado as a result of the raising of the embargo as the winter season which is now general will not permit of much construction work.

National, state and county departments are now busy, however, preparing plans and specifications for work which will be undertaken next spring and there is a general belief among the road builders, not only of Colorado but throughout

the country, that when work is resumed it will be undertaken with a co-operation from the nation, never equalled in the past history of the work.

Just what form assistance will be received remains uncertain for the present, but the inclusion of a road plank in President Wilson’s reconstruction platform, together with the attitude assumed by the business men of the country, indicates that America has finally awakened to the economic importance of its highways.



COLORADO GROWN PRODUCTS
One of the Many Workers in the Celery Fields Near Littleton

The New Era of State Development

By the Colorado Department of Immigration

IN the discussion of the tremendous era of development which everyone expects will follow the conclusion of the great world war there is, perhaps, too much said about the benefits which Colorado hopes to derive and too little about the desire of the state to prepare itself so that it can offer the prospective settler real opportunities of a concrete nature rather than glittering but general promises. Honest and intelligent development can not be fostered by a state which does not know itself what it has to develop or the rewards which development will bring.

It is not so much a question of bringing settlers into Colorado as it is of preparing ourselves so that we can treat them fairly and intelligently, aiding them in the selection of the best opportunities and in the development which must follow. It is not to be considered wholly from the selfish point of view, although in a larger sense the broader viewpoint is at once the most profitable and the most selfish, for it will result eventually in greater tides of immigration and vastly broader development of the state's resources than a narrowly selfish program can bring to pass.

Colorado cannot tell the prospective investor or settler what she herself does not know about her resources and her opportunities. To be fairly equipped with the information which the new-comer demands the state must first secure that information, for much of it is now unavailable. Without that preparation, the state is in no position to encourage a flood of immigration nor is it prepared to care for such a flood if it should come without encouragement.

The end of the war caught the United States unprepared. Today peace is practically an accomplished fact and the demobilization of the millions of men from whom Colorado hopes to secure a fair proportion is already under way, but neither the nation nor any state is prepared for prompt action. Congress is still considering legislation which is vital to any extensive program and which will require, at the lowest possible estimate, two years to arrive at a stage approaching fulfillment. In that time many of the problems of reconstruction will have solved themselves and the golden opportunity will have gone.

Like every other state in the Union, Colorado is almost wholly unprepared to participate intelligently in any great development program. A half million men coming out of the army have said explicitly that they want to join the "back to the land" movement and acquire farms of their own, but neither the state nor the nation is prepared to offer those who turn to Colorado anything save the opportunity to file on homestead lands or purchase state lands and take their chances under new conditions, with nothing but the moral support of the government. The need of active, intelligent and substantial assistance from state and federal governments cannot be supplied by moral support, no matter how enthusiastic.

Agriculture, stock growing, manufacturing, mining and the business world all call aloud to the returned soldier and the easterner whose dreams turn to the west. Nowhere else are the opportunities so great or the promises of reward so tempting, but the state has not yet begun to do its part. In the collection of information covering its industries and undeveloped resources it is probable that Colorado has gone as far forward as has any other state, but in no state has there been a sufficient degree of preparation.

Statistical information is available here to a greater degree than in most of the western states, but its preparation has been done largely through the co-operation of volunteers, who have devoted their time and money to a great work which the state must do thoroughly and efficiently if the best and most accurate results are to be obtained. Statistics of past experiences are the groundwork upon which future expansion and development must be built, and to be of the greatest value they must carry a degree of conviction which is impossible unless they are prepared by authority of the state and through governmental agencies.

It is idle to say that we have 3,000,000 acres of state land and 10,000,000 acres of government land awaiting the settler, and that all he must do is to come and make his selection. Where is this land? How much of it is cultivable? How much is good only for pasture? How much can be irrigated? How much is in the high altitudes and how much in the valleys? These and a thousand other questions essentially limit the areas in which reasonably good farm land is available, yet the enthusiast shouts the totals to the world and gives no thought to the fact that if a lone immigrant comes to him and asks him where to go to secure a good farm at little or no cost save that of labor he cannot tell him. The earnest settler, with unbounded energy and confidence but limited means, wants facts, not glittering fairy tales.

Geologists have given wide range to the enthusiasm of the careless. They have told us, for instance, that the oil shale deposits of Colorado will produce 20,000,000,000 barrels of oil, with a by-product of ammonium sulphate amounting to no less than 300,000,000 tons. Wealth beyond the dreams of avarice, but where are these immense deposits? Are they available without tremendous expenditures for development? How is the oil recovered and the sulphate produced? What is the cost of a small plant and what are the chances of success, and the promises of profit? The enthusiast thinks nothing and cares little for these details. The enormous totals are all he has to offer the man who comes to Colorado with a real interest in oil shale.

There are exceptional opportunities for the establishment of dehydrating plants, alfalfa mills, potato flour mills and a hundred other industrial factories, but how much can

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A "Six-Hoss" Team At Grader Work On Eastern Independence Pass



This Powerful Bit of Horseflesh was Working Throughout the Summer in the High Altitudes on the Road Above Twin Lakes, Lake County.

2,000,000,000 Road Boosters Coming Home

“THERE will be a couple of million real ‘Road Boosters’ back in the United States when the war is over, as I think all of the men over here appreciate how good roads can be made invaluable. In my mind there is no doubt that the good roads of France saved her in two instances.”

Col. Robert H. Tyndall, of the 150th Field Artillery, thus writes from “Over There” to a fellow Hoosier, Chairman Carl G. Fisher of the A. A. A. Touring Board. It will be remembered that these two were closely associated several years ago in the transcontinental tour from Indianapolis to San Francisco, at which time much of the route of the Lincoln Highway was decided upon. Col. Tyndall is an inveterate road driver and has covered thousands of miles of good, bad and indifferent American highways. In his letter “home,” he goes on to say:

“I have seen movements of troops made in the dark which would have been impossible in any other country than France. Here the roadmakers have scientifically planted trees that absorb drainage on the side and at the same time shelter the highways so as to keep them just moist enough. In some instances you will find a tall poplar standing higher than the rest of the trees bordering the road, at every kilometer, so that you can readily measure distances with the eye.

“One of the great things they do here is to repair a road and even make an entirely new surface without interfering with the stream of traffic. In one campaign we were in, over a thousand trucks passed my regiment, each carry-

ing twenty-two soldiers. This was for re-inforcement on the flank and was done without the slightest confusion. One does not find here the little holes that cause so much trouble remaining in a road. The potted places are immediately filled and drained, right up to the front line almost.

“As far as being able to orient one’s self, I think from now on I can drive blindfolded any place in the United States, as most of my driving on the front has been at night, and the roads wind around considerably over here. I don’t have lights and neither do the trucks and other vehicles coming in opposite directions. We are not allowed to use the Klaxon horn, as this is the method employed for a gas alarm. Sometimes I really wonder how we get through with it all, but it shows how a person can become accustomed to ‘most anything, and we train ourselves to see in the dark.”

That a big road plan is near at hand in this country is the opinion of many leading highway advocates. Chairman George C. Diehl of the A. A. A. Good Roads Board summarizes the idea in this manner:

“One hundred million dollars a year appropriated by the Federal Government on a definite, tangible National Highway System will work wonders in the form of from five to ten thousand miles of splendid highway, made up partly of sections already sufficient in quality, partly in sections to repair, partly of sections rebuilt, and partly of entirely new construction. State and local appropriations will be encouraged, and these subdivisions, largely because of Federal Roads, will enormously increase road expenditures.”

\$100,000,000 Road Bill Introduced

JUST before the world armistice was declared Senator Chamberlain, one of the strongest good roads advocates in Congress, introduced a bill providing for the expenditure of \$100,000,000 on highways of the United States by the Secretary of War, and for the purpose of creating a national and state system of highways for use in military work and for the general welfare of the people of the United States.

This bill was read twice and was then referred to the Committee on Military Affairs. While it may be said that the immediate need for this legislation has passed from a military standpoint, the need from a public welfare standpoint is greater today than it has ever been and the probabilities of its passage are correspondingly brighter.

The bill in full follows:

A Bill—To provide for the taking over, improvement, relocation, construction and maintenance of a system of national highways and state highways, designed to facilitate the movement of troops, equipment, munitions, and supplies, and to promote the general welfare of the people of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that in order to meet the extraordinary wear and damage to the public highways by reason of their use by or on behalf of the Federal Government and to guarantee that their condition will be such that a continuous service can be made thereof, the Secretary of War is authorized and directed to take over a comprehensive system of roads throughout the United States, designed primarily with a view of facilitating the movement of military troops, equipment, munitions, and supplies, but at the same time, so far as reasonably compatible with said purposes, with a further view to accommodating the Postal Service, facilitating interstate and foreign commerce, aiding agricultural and manufacturing pursuits, and promoting the general welfare of the people of the United States. To these ends the Secretary of War shall confer with the authorities having in charge the construction of highways in the several states, and in such conferences shall disclose, so far as reasonably practicable, the outlines of his plans for highways designed for military purposes, to the end that unnecessary duplication of highways be avoided, and that highways constructed for other than military purposes may be in a strategic location wherever reasonably possible.

Sec. 2. That said system may be undertaken and completed in such installments or divisions as may seem to the Secretary of War expedient and desirable.

Sec. 3. That the Secretary of War shall forthwith proceed to take over, improve, construct, and maintain such roads of said system of highways as are most necessary to the welfare of the people of the United States.

Sec. 4. That for the purposes of defraying the expenses pertaining to taking over, improving, constructing,

and maintaining of said highway system aforesaid, the sum of \$100,000,000, or so much of said sum as may be needed for said purpose, is hereby appropriated, out of any funds in the Treasury of the United States not otherwise appropriated.

Sec. 5. That the Secretary of War shall make an annual report to Congress showing the manner in which the provisions of this Act have been carried out and expenditures made thereunder.

Sec. 6. That out of the appropriation made by or under this Act, the Secretary of War is authorized to incur such expense as he may deem necessary for carrying out the provisions of this Act.

Sec. 7. That the Secretary of War is authorized to make rules and regulations for carrying out the provisions of this Act.

Sec. 8. That the term "highways" used in this Act shall include bridges and culverts.

Sec. 9. That this Act shall be in force from the date of its passage.

GOOD ROADS AND STATE'S DEVELOPMENT.

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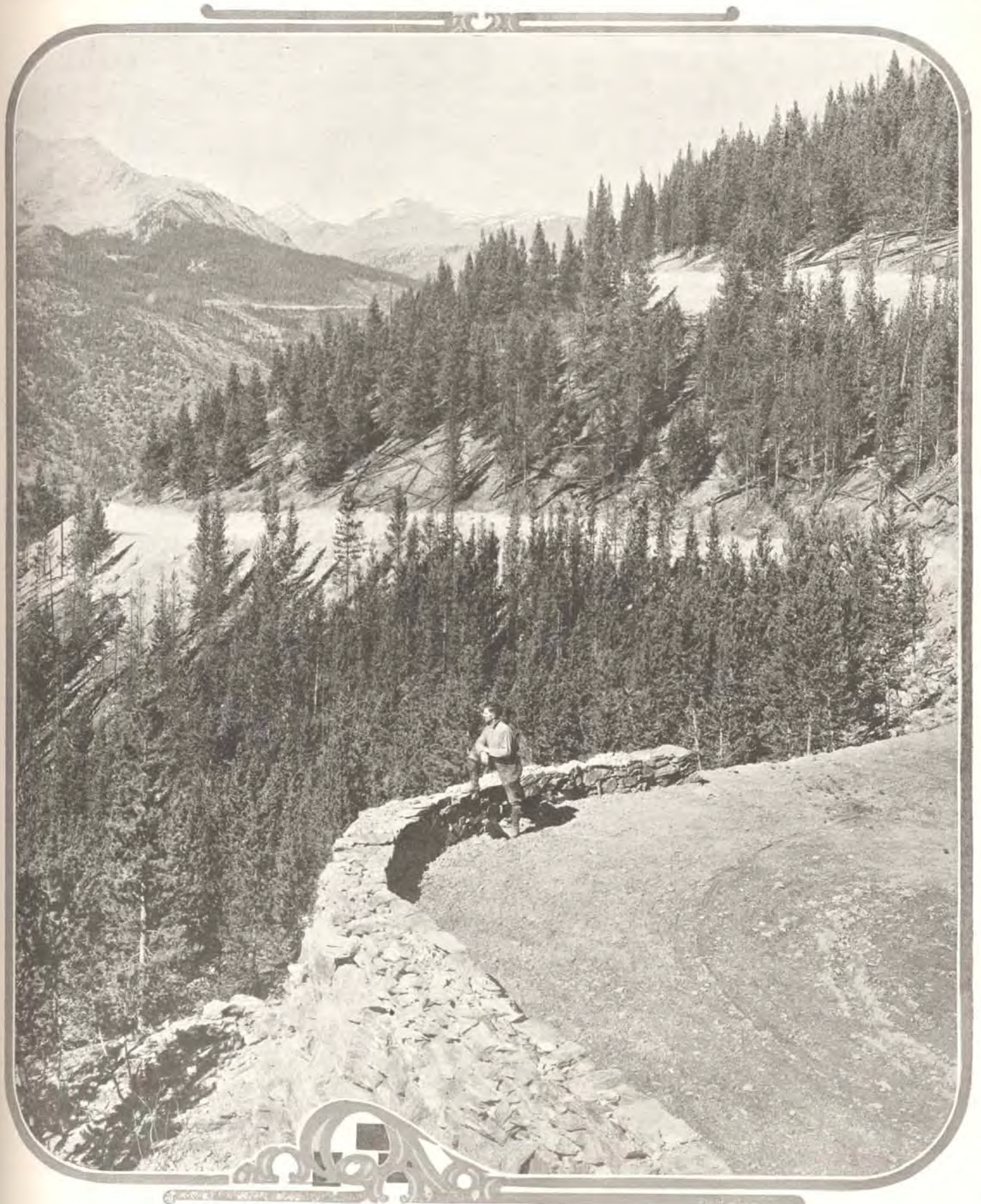
building materials would have to be hauled to the site, secondly, there are thousands of tons of raw materials that must be gathered from all over Colorado to feed the machinery to be placed in the structure, and thirdly, the finished product must be hauled to distributing points. Do you think that government officials will not take into consideration the conditions of the roads in this state?

Last week through this federation the steel working plants of Colorado were given a government contract for \$4,000,000 worth of tractors for the government. There is no one factory large enough to fill the order, consequently the contract must be distributed. Assembling of parts will be necessary by motor truck, and without the best of roads to cut the expense of transportation these men will be handicapped in competing with the big manufactureres of the East.

We are in the center and are the center of the wool production of the United States. Yet we ship our wool to New England to be cleaned. This federation is interested in promoting the wool scouring industry for Colorado. That means competition with the East. Transportation is one of the biggest factors for the wool producer in his profits, since the feeder is usually a long way from market. He must depend upon truck transportation and again he must be dependent upon good roads for speedy profitable delivery.

Colorado is a very vast empire. Because of the size and sparsely settled country the hauls are long. That factor either cuts the profits of the farmer or raises the price to the consumer. Better roads, built to stand the load, will eliminate both evils.

The Western Slope of the Fall River Pass Looking Into the Divide



View taken on the work now being done by Contractor McQueary in Grand County. This road will link up northwestern Colorado with the east.

Proper Care of Machinery Cuts Road Costs

By R. E. Pratt, District Engineer, U. S. Forestry Service

THE approach of winter suggests the question of what is to be done with our road machinery and equipment. Are we going to put the tractor and the grader out in the pasture for the winter, and store the plows and slips and fresnos in the fence corner, or shall we first put all of our equipment in first-class condition and then house it in a good dry place until it is needed again next spring?

Before deciding let's hark back to last spring. Do you recall how the old grader expostulated when you tried to induce it to go back onto the job? Do you remember how the rust had accumulated on the slips, and plows, and fresnos? Do you recollect how many delays you experienced before the equipment was fit for use and how much it cost for repairs and parts? Have you forgotten how you had to send in that rush order about July 1, because those graders that had been in use only two years had to be relegated to the scrap heap? If that same condition is not going to recur next spring, now is the time to forestall it if you haven't already done so.

There are two things which demand our attention. First, we must be sure that our machinery is placed in first-class condition, and second, dry storage space should be provided. The Engineering News Record of November 7 carries a timely article by Associate Editor C. S. Hill, which should be carefully read by all who are responsible for the care of road machinery and equipment. The necessity for conserving equipment with the present national shortage of material is brought out and detailed suggestions for putting machinery in shape for storage are given. The desirability of thorough painting and greasing is especially emphasized, and the necessity for careful housing is discussed.

We all realize in a general way that rust is the greatest enemy of machinery, and that if preventive measures are not adopted the life and efficiency of our equipment will be seriously impaired. Most of us, however, have probably not attempted to reduce the proposition to a dollars and cents basis, and until we do this we do not fully appreciate how much we stand to lose if proper precautions are not taken.

Perhaps the following figures will not agree with your local conditions, however, they have been prepared to meet general conditions, and are in accord with the best information the writer has been able to secure.

Let us assume that we have an investment of \$10,000 in new road machinery and equipment. If properly cared for, housed and maintained, this equipment should last five years under average working conditions. This makes a depreciation charge of \$2,000 per year. Adding an interest charge of 5%, we have \$2,500 as the total cost of the equipment per year if the maintenance charge is disregarded.

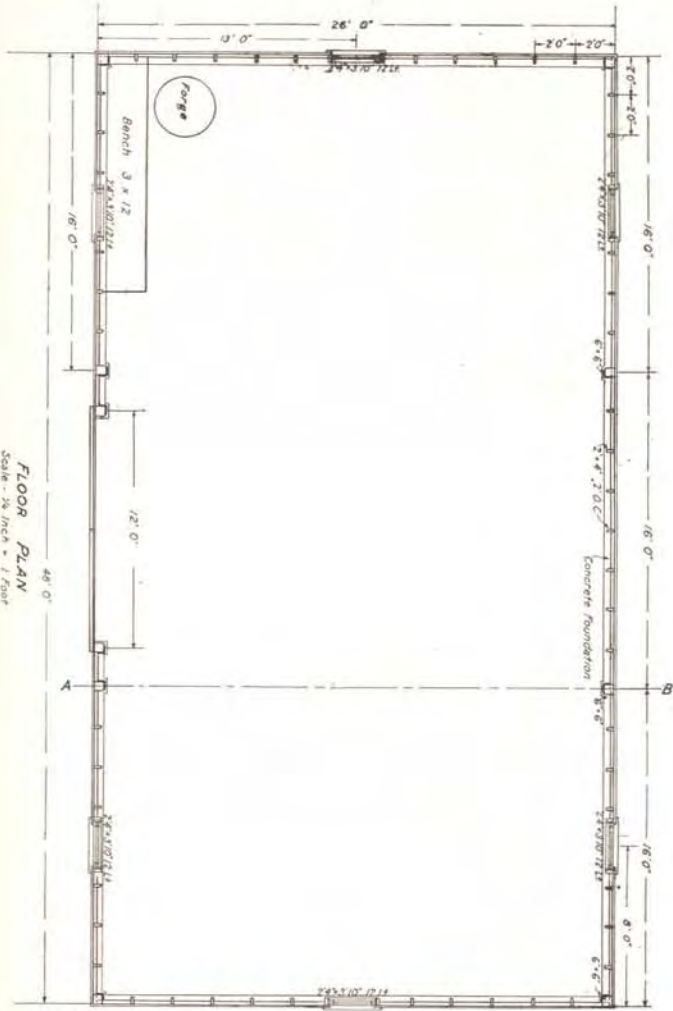
Machinery experts tell us that road equipment properly housed and cared for will on the average give efficient service for twice as long a period as similar machinery which is unprotected and does not receive proper care. If this is true, the average period of efficient usefulness of our equipment, if conditions are otherwise similar, will be reduced from five to two and one-half years. On this basis, we have an annual charge for depreciation of \$4,000 plus an interest charge of \$500, making a total amount of \$4,500 as our equipment charge for the year. The maintenance charge, cost of extra parts, etc., is disregarded in both cases, since it is a necessary charge under either set of conditions and will be very nearly equal.

It is apparent that the annual charge is increased \$2,000, and that our annual loss is this amount minus the cost of housing facilities. There are many types of sheds which can be constructed, but it is certainly fair to assume that a shed adequate for storing this amount of equipment can be constructed for \$2,000. Assuming the life of a well maintained shed as twenty years, interest on the investment at 5%, and an annual maintenance charge of \$100, we have \$300 as the annual cost of storage space for our equipment. This amount taken from \$2,000 leaves \$1,700 as the clear gain per year, or 17% of the total amount of our investment in road machinery and equipment. This is no small saving, especially when considered in the light of our limited road funds.

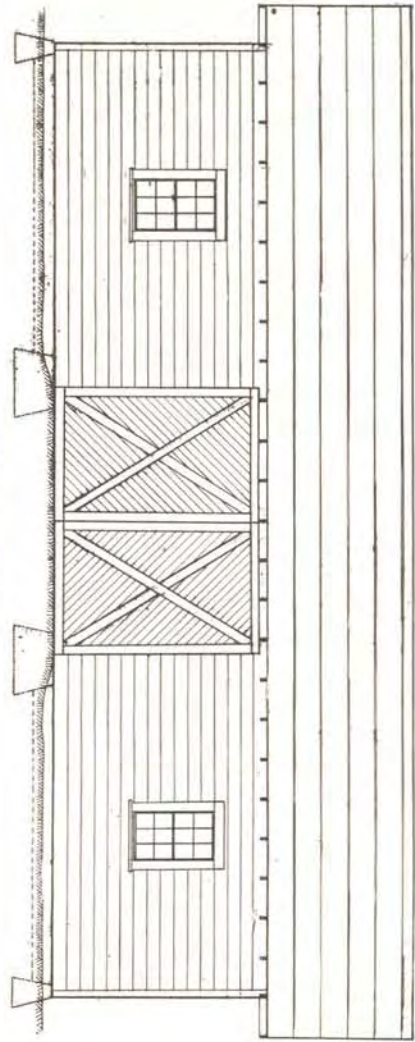
If the above conclusions are true, it is apparent that a sufficient number of implement sheds or warehouses to adequately store all road equipment when not in use is an investment which will pay a handsome dividend, not only in dollars, but in terms of added efficiency.

The planning of an implement shed is deserving of considerable thought and study. The sizes of the pieces of equipment to be stored should be known so that the storage space which they will occupy may be determined. The construction should be as simple as possible, consistent with sufficient strength to withstand wind and snow loads, and to insure exclusion of the elements. Doors should be amply wide, of the sliding type, and be substantially made. Care should be taken in designing the structure to insure sufficient strength at point doors are hung to prevent sagging.

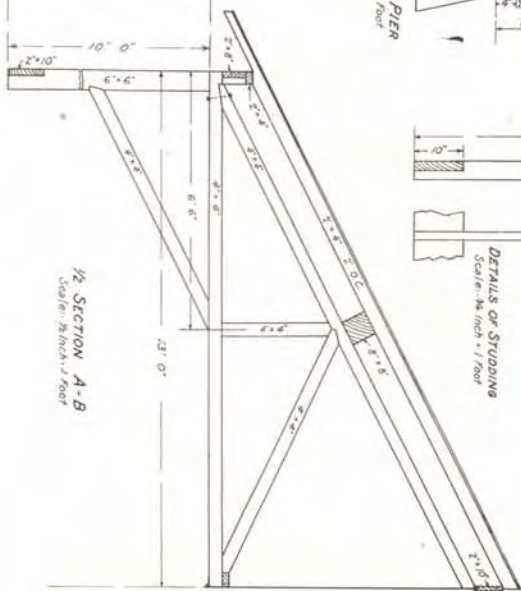
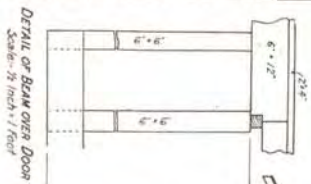
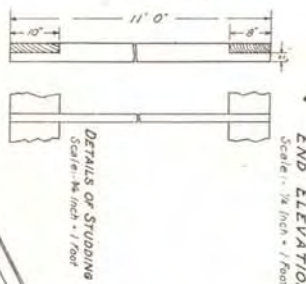
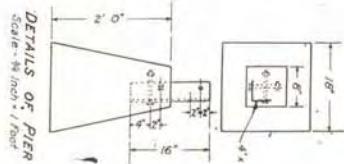
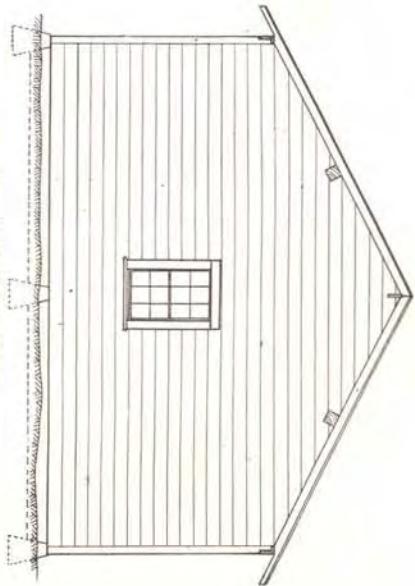
One feature of the design of buildings of this kind which should also be considered, is the appearance of the finished structure. While utility is the first consideration, the element of beauty need not be entirely neglected. Such a building is an improvement of a permanent character and local pride will dictate that the structure be reasonably attractive. The building should be well painted with not less than two coats of paint. Timbers likely to be subjected to moisture, such as sills, the bottoms of posts, etc., will be rendered more durable if treated with creosote before placing.



SIDE ELEVATION
Scale - 3/8 inch = 1 foot



END ELEVATION
Scale - 3/8 inch = 1 foot



ROAD EQUIPMENT SHED

Farm Homes for Returning Soldiers

By the Colorado Department of Immigration

IN the discussion of reconstruction plans to be carried out following the close of the world war, much attention has been given possible methods for providing farm homes for returning soldiers. Secretary Lane of the Department of the Interior has given the subject much thought and has directed careful investigations to determine what lands are available for this purpose in all sections of the country. This work has not all been done on the mere assumption that many of our soldier boys will desire to settle on farms when they are mustered out of service. Actual inquiry among men in service has indicated that perhaps 500,000 of them desire to avail themselves of the opportunity to obtain farms when they return home.

The plans suggested by Secretary Lane contemplate furnishing soldiers with ready-made farms, on which soldiers may begin agricultural operations without delay. It is proposed that the states furnish the land and the federal government the funds for reclamation and equipment. Investigations conducted by the interior department indicate that all the land required will be available, including cut-over timber lands requiring clearing, swamp lands which will require drainage and semi-arid lands in the west, most of which will need irrigation.

But the world war came to an end earlier than most of us even hoped it could be ended. One result was that the plans for furnishing farm homes for soldiers are hardly completed before the soldiers begin to return home. Swamp lands can not be drained, cut-over lands can not be cleared and arid lands can not be irrigated in time for the first soldiers mustered out to be placed upon them. Secretary Lane's plan in full detail has not yet been presented to Congress. It can hardly be enacted into law before the period for introducing bills in the state legislatures meeting this winter has expired. Consequently it apparently will be necessary for many of the states, including Colorado, to take independent action in advance of congressional enactment if they are to participate effectively in the big general scheme for soldier settlements.

There is approximately 10,000,000 acres of government land open to homestead entry in this state, upon which soldiers as well as other qualified entrymen may file. A discussion of the distribution and character of this land appears elsewhere in this magazine. A study of this would indicate that a comparatively small amount of this land will be available for immediate soldier settlement.

There is approximately 3,000,000 acres of state land in Colorado. This, however, will hardly be available for use in any general soldier settlement plan for several reasons. It is offered for sale at public auction, the soldier taking his chance with any other person in purchasing it. It is distributed over the state in comparatively small tracts and for that reason is hardly suitable for the establishment

of large colonies. The general opinion is that the most practicable plan of soldier settlement will be the establishment of colonies of considerable size, where general supervision and aid in agricultural work can be directed by the state or the federal government at the smallest possible expense. The state land of Colorado lies in 57 of the 63 counties, the largest amount in any one county being about 200,000 acres in Pueblo county.

If the state is to co-operate with the federal government in its general settlement plan, as already outlined, it will evidently be necessary for provision to be made by which the state is to acquire land for settlement or to exercise some sort of supervision over privately owned land to be improved by the government. Methods by which this may be done will require careful study by competent attorneys. In some states amendments to state constitutions are necessary to acquire land for such purposes, and a few states are making preparations so to amend their constitutions. Just what shall be done in Colorado along this line will, of course, be governed by the specific character of the plan for co-operation proposed by the federal government.

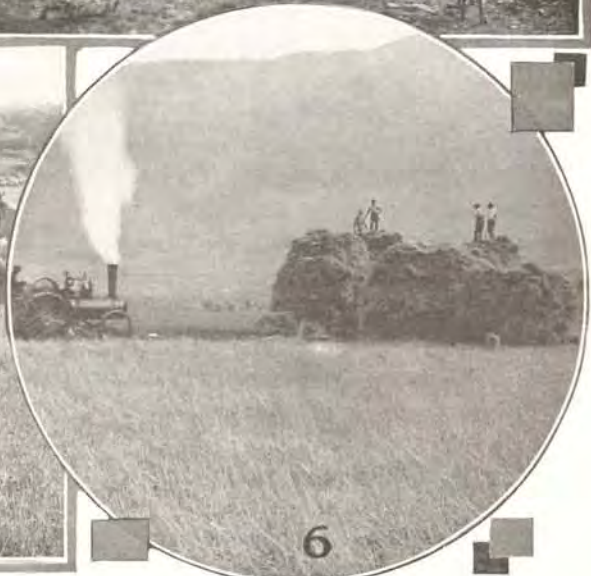
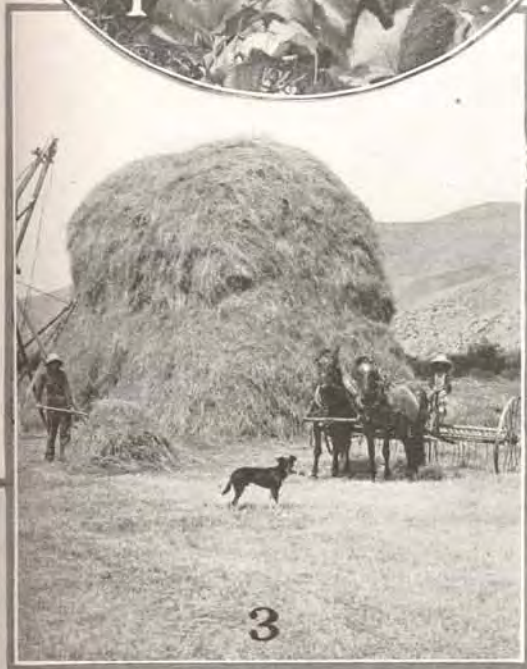
It should be noted that most of our allies in the world war have already taken steps to provide farm homes for their soldiers through the acquisition and improvement of land by state, provincial or national governments. England provided settlements before the war by buying large areas of land in Ireland and selling it to Irish peasants. State land settlement has been a well defined policy in New Zealand and Australia for a long time. One state in Australia has taken over 53,000 acres of land and has made large appropriations to prepare it for the use of returning soldiers. Special provisions for soldier settlements have been made in Canada. England also has provided special legislation along this line.

Most of those who have given any thought to providing homes for returning soldiers are familiar with the California experiment in state land settlement, which is now in successful working operation. This plan was not initiated for the benefit of soldiers. It was thought out before the United States had entered the war and within the narrow limits of its land resources was open to any man of small means who desired to become a farmer and could meet the requirements laid down by the California Land Settlement board.

Elwood Mead, president of the California Land Settlement board, is well known to many Colorado people. He has made a study of state land settlement and colonization for a good many years, particularly in Australia and New Zealand. He is now one of the special advisers to Secretary Lane on the soldier settlement plans being worked out in the Department of the Interior.

(Continued on page 24.)

The Soldier Will Find a Wealth of Productive Farm Land in Colorado



1. Grapes Raised in Montrose. 2. Cattle Grazing on Grand Mesa. 3. Haying Scene, Gunnison. 4. Sheep Feeding, Silverton. 5. Wheat Scene Near Sedalia. 6. Threshing Above Glenwood Springs.

Government Asked to Aid Colorado Roads

WITH an eye to providing at once ways and means for the employment of returning soldiers and also with the purpose in mind of resuming road work at the earliest possible moment, L. W. Page, director of the U. S. Office of Public Roads, recently wrote to T. J. Ehrhart, commissioner of the State Highway department, asking how many men could be used in Colorado on this work. Mr. Page's letter together with that in answer by Commissioner Ehrhart, follow:

Washington, D. C., Nov. 4th, 1918.

Mr. T. J. Ehrhart,
State Highway Commissioner,
Denver, Colo.

Dear Sir:

The Secretary of Agriculture, having in mind the return of our soldiers after the war, and wishing to assist in providing employment for such of them as need it, is anxious to ascertain as early as is practicable, the number of returned soldiers who may be employed to advantage on road repair, construction and maintenance. The co-operation of the State Highway Departments is earnestly sought in the matter.

It is believed, with minor exceptions, the soldiers will naturally desire to return to the localities they came from. Unquestionably, such a wide distribution would result in a more ready absorption into the industries in which they will be needed. It would seem, too, that they should be given the preference by employers.

For the purpose of determining the value of highway work as a field for such labor you are requested to furnish a statement, in letter form, of the approximate number of men your State Department could use in connection with either force account or contract operations. It would be convenient to have the statement indicate separately the number of skilled and unskilled men that could probably be employed, including in the skilled labor, carpenters, masons, stationary engineers, roller-men, quarry bosses, etc., and also the period of the year for which they would be employed.

We, of course, wish to get this information together as soon as practicable, because, although the need may not be immediate, it will be necessary to compile the data and correlate it with similar information obtained for other activities. This will probably take considerable time.

Very truly yours,

L. W. PAGE, Director.

Denver, Colo., Nov. 6th, 1918.

In re file No. J-1

Mr. L. W. Page, Director,
Bureau Public Roads,
Washington, D. C.

Dear Sir:

Referring to your letter of November fourth, will say that in my opinion there will be little difficulty in absorb-

ing into the various industries of Colorado the soldier boys from this state, as they return to their homes.

Colorado will expend on its road system, during the year 1919, approximately \$3,500,000 or about \$90.00 per mile. I believe one of the chief difficulties we will have to meet in this state, will be the re-employment of the labor that has left the state to engage in various governmental employments.

So far as highway construction is concerned and the employment of labor in connection therewith, I believe that Congress should make a large appropriation, special in character, to assist the states during, at least, the coming two years, in the employment of common labor in general road construction. In our own case, if Colorado had to add to its present road fund \$500,000 for each of the years 1919-1920, it would assist in the largest degree, in steady-ing and maintaining the labor equilibrium so much desired following peace. Such a Congressional appropriation should be hampered as little as possible by "red tape" regulations and should be used largely in force account work, confined to the main highways of the state.

Colorado's road fund of \$3,500,000 would probably furnish employment to about two thousand men during the six months beginning April first, and about five hundred men for the balance of the year.

During the past year we have had very little trouble in finding the necessary labor to do the road work possible with the funds we have had to expend, because of the advanced cost of materials and labor. Therefore, the most necessary thing, if we expect to extend this work and add to our force, is additional funds. The people of the state are digging deep into their pockets to provide funds for better roads. The average levy for road purposes in Colorado is approximately two mills on each dollar valuation.

I think the road question has grown beyond state limits, and is now national in character, and that the Government, at this time, through Congress, ought to take steps to assist the states in road work, and at the same time help to take care of the labor that will soon be seeking employment throughout the land.

Very respectfully yours,

T. J. EHRHART,
State Highway Commissioner.

CONVICT LABOR ON MARYLAND ROADS

Application for an injunction against the State Board of Prison Control and the State Roads Commission was recently denied the Jones Hollow Ware Co., the court upholding the constitutionality of the law authorizing the State Roads Commission to take convicts and place them at work on the state roads.

The Jones Company wished to have the state restrained from employing convicts on road work, on the plea that such action was a violation of its contract with the state. The state, through the Attorney General's Department, filed a demurrer which was sustained by the court.

County Commissioners Increase Road Levies

Climbing the Hills to the Blue Mesa

Budgets received from thirteen boards of county commissioners from districts scattered throughout the state indicate that the boards will either maintain their levies at the level of 1918 or that they will increase them.

In the case of Eagle County, for example, the levy has been raised from 3 mills to 4.01, while there has been an appreciable addition to the valuation

Garfield County has lowered the levy from 6.69 to 5 mills, but will have \$13,000 more funds because of the fact that a heavy indebtedness has now been cancelled and there is also an increase in valuation.

Logan has added a mill with an increased valuation of practically \$10,000,000, Montezuma will maintain a 7-mill tax, Yuma has increased from 1.5 to 2.42 with increased valuation, while Adams, Jefferson, Custer and Huerfano have maintained levies with increased valuations.

To date Gilpin and Pitkin counties are the only ones to show a decrease due in these cases to decreased valuations and reductions in taxes made necessary by quiet seasons.

The valuations, as received to date, follow:

County	1917		1918	
	Mill Levy	Valuation	Mill Levy	Valuation
Adams	2.	\$ 26,170,660	2.	\$ 28,470,000
Alamosa	2.	8,290,336	...	...
Arapahoe	1.3	18,598,595	...	...
Archuleta	2.8	4,803,077	...	...
Baca	1.	6,413,119	...	...
Bent	1.75	11,526,440	...	...
Boulder	1.95	42,892,240	...	...
Chaffee	1.75	10,997,225	...	...
Cheyenne	1.5	10,728,544	...	...
Clear Creek	5.5	5,346,050	...	...
Conejos	2.5	8,936,977	...	...
Costilla	3.5	5,477,907	...	...
Crowley	1.1	9,110,705	...	...
Custer	2.5	2,459,849	2.5	2,552,531
Delta	2.6	15,373,800	...	...
Denver	...	330,453,580	...	...
Dolores	2.	1,582,545	...	...
Douglas	2.	11,113,180	...	...
Eagle	3.	7,255,440	4.01	7,597,511
Elbert	2.3	13,722,779	...	...
El Paso	1.6	65,710,060	...	...
Fremont	2.8	18,797,830	...	...
Garfield	6.69	18,310,850	5.	19,318,000
Gilpin	3.5	3,350,678	3.5	3,174,483
Grand	2.53	4,737,555	...	...
Gunnison	2.2	16,025,760	...	...
Hinsdale	4.	984,119	...	...
Huerfano	2.5	12,963,074	2.5	...
Jackson	2.	5,058,955	...	5,645,665
Jefferson	2.49	22,579,930	2.49	23,492,810
Kiowa	.5	9,085,235	...	...
Kit Carson	2.	14,123,033	...	...
Lake	.75	11,508,625	...	...
La Plata	2.623	15,244,340	2.25	15,824,524
Larimer	2.3	40,979,005	...	...
Las Animas	1.5	37,440,456	...	...
Lincoln	1.6	13,678,005	...	...



A Scene on the Road Above Sapinero, Gunnison County, Near the Lake City Junction.

Logan	4.21	27,544,988	5.21	37,821,911
Mesa	2.2	27,408,230	...	...
Mineral	5.	1,470,052	...	...
Moffat	7.	5,714,770	...	...
Montezuma	7.	5,844,653	7.	6,463,107
Montrose	2.7	15,192,880	...	...
Morgan	3.3	21,491,890	...	...
Otero	1.98	27,650,280	...	...
Ouray	3.5	5,194,341	...	...
Park	4.	8,637,650	...	...
Phillips	1.	8,190,356	...	...
Pitkin	3.5	5,385,630	2.5	5,750,400
Prowers	2.006	18,784,420	...	...
Pueblo	1.3	66,064,912	...	...
Rio Blanco	2.75	5,728,420	...	...
Rio Grande	2.	9,906,550	...	...
Routt	5.23	14,247,327	...	...
Saguache	2.	11,948,779	...	...
San Juan	3.5	4,172,220	...	...
San Miguel	3.25	8,845,724	...	...
Sedgwick	1.62	6,888,168	1.391	10,783,181
Summit	3.	6,474,358	...	...
Teller	2.67	13,848,230	...	...
Washington	1.5	17,904,363	...	...
Weld	2.7	82,573,620	...	...
Yuma	1.5	15,233,850	2.42	18,587,200
		1,305,286,409	...	...

Commission Hears Petitions From Counties

THE postponed quarterly meeting of the State Highway Commission was held in the offices of the department, Nov. 26. L. E. Curtis and Fred Radford were absent because of illness. Those present were L. B. Walbridge, chairman; Fred Goble, Elmer E. Sommers, newly appointed member, and T. J. Ehrhart, commissioner.

No formal action of any kind was taken by the board. Petitions were heard, however, from representatives of numerous counties who desire aid for road work in 1919. These may be summarized briefly.

Teller County Commissioners reported that the abnormal increase in truck traffic during the past year has necessitated more work on main highways, particularly that from Colorado Springs to the gold district.

Kit Carson representatives are desirous of completing the graveling of the east and west road, Route No. 3, through their boundaries, and to that end would keep an outfit steadily employed on the road.

James Hurley of Morgan reported that his county is not lacking in funds for road work but that assistance is desired in purchasing road machinery. Use of light tractors for dragging purposes has been uniformly successful in this district.

County Attorney Carpenter of Montezuma presented plans for opening the main road through from Dolores to Rico and Telluride. Special stress was laid upon need of aid in what is known as the Stapleton section and on the Montelores hill and bridge.

G. V. Hodgkin and J. C. McCandless of Fremont reported that their county desires to undertake first-class maintenance on all roads and would gravel all highways.

Jacob Beek of Custer said that his district is particularly interested in securing improvement of State Route No. 37, the Oak Creek road, in order that coal may be brought out and supplies carried in the mines.

S. Greenwood and H. E. Miller of Boulder asked aid in the construction of two miles of concrete on the eastern gateway into Boulder and a similar amount on the southern approach to Longmont. Increase in traffic has made this work imperative, say the commissioners.

Thomas A. Forkner and R. S. Hamilton, Moffat County, are interested in the improvement of Route No. 41 from Craig straight through to the western state line.

Walter Shy of Cheyenne County said that his board is desirous of securing a right of way along the railroad near Wild Horse and east of Cheyenne Wells, in order to shorten the course of the through east and west highway.

Lake County commissioners hope to construct four miles of road between Leadville and Dillon in order to provide an outlet for heavy mining traffic.

The commissioners of Grand County hope to improve the Trough road which is a part of the Midland Trail and

also to do a good deal of improvement work on Berthoud Pass.

Harry G. Flanders and H. G. Tiffany presented the need for an extension of the concrete roadway on the Brighton road through Adams County, together with improvement work on the Denver-to-Limon highway and the stretch beyond the Tarvia on the Boulder highway.

W. F. McClure and Frank Russell of Conejos outlined the plan of that county for improvements of two bridges across the Conejos River near Antonito, a third structure across the Alamosa near La Jara, and a fourth across the Rio Grande between La Jara and San Luis. They are also interested in the Cumbres Pass highway.

W. S. Rose of Ouray has made an application for U. S. Forest Service aid on the road from Ouray to Silverton at the point where the highway crosses Red Mountain at the top of the divide.

All of these subjects were taken under advisement by the Commission which will proceed to apportionment of funds when complete data are at hand regarding levies, budgets, etc., for the year 1919.

FIRST PAVED ROAD BETWEEN IOWA CITIES COMPLETED

A highway that is said to be the first surfaced highway to be built in Iowa as a connecting link between two cities has recently been completed in Cerro Gordo County. The road connects Mason City with Clear Lake and is ten miles in length. It is paved with reinforced concrete and cost about \$15,000 a mile.

Work on the road commenced in 1913 when a mile of paving was laid near Mason City. In 1915 a second mile was built between the end of the first mile and the Mason City line. At about the same time Mason City extended the pavement from the city line to the center of the municipality. The portion recently completed is four miles in length and connects the pavement in and near Mason City with the portion in Clear Lake, built later by that city.

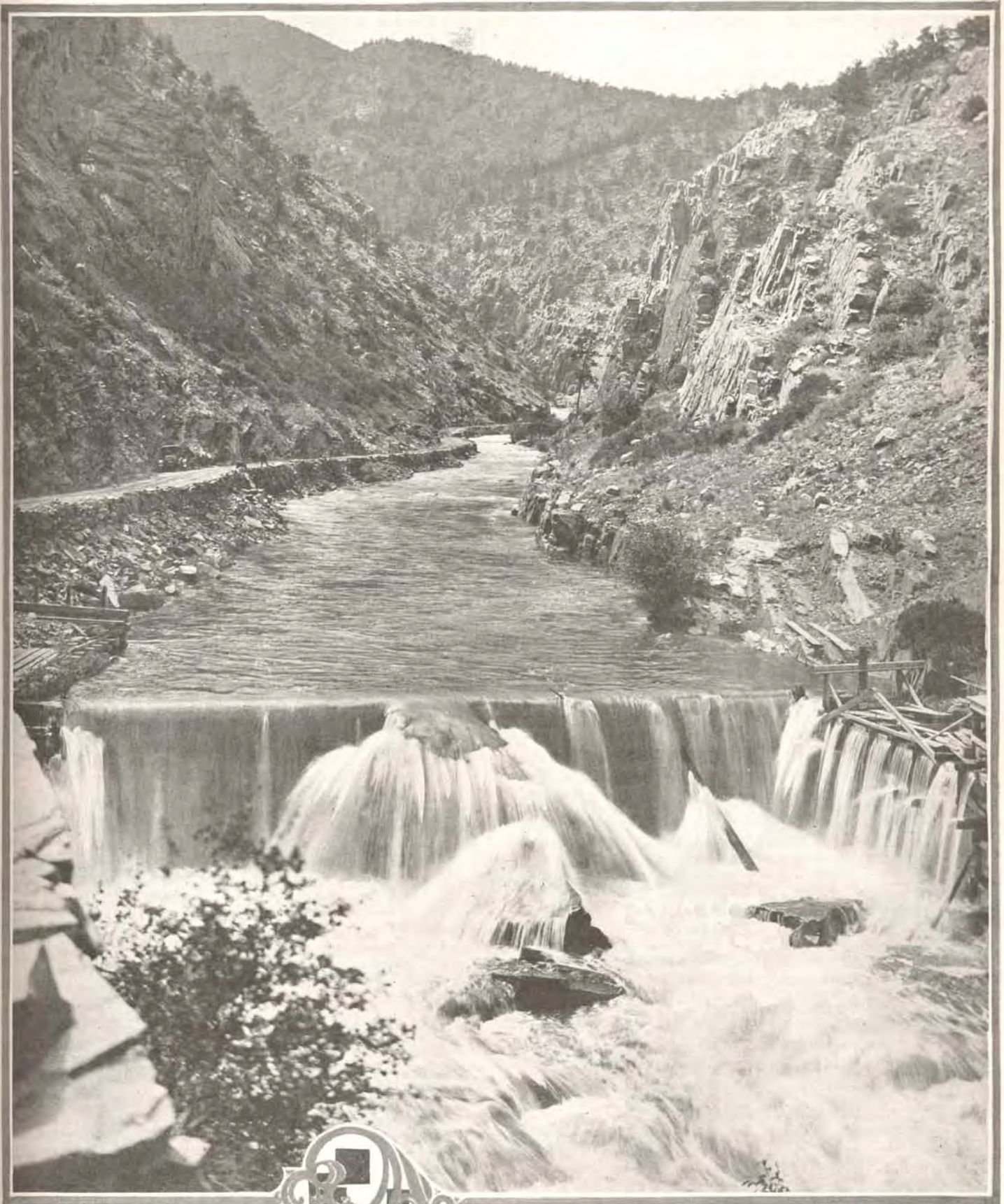
The connecting link was built by the county with state and federal aid, and, incidentally, is the first federal aid project designated and completed in the state. It was started in 1917, and was about half finished when construction was stopped by the winter. Work was started again early last spring, but because of delays due to war conditions was not completed until late in August.

ROAD WORK IN INDIANA AFTER THE WAR

An extensive road building campaign in Indiana after the completion of the war is being planned by Governor Goodrich, according to a report received by a county council of defense. It is said that the state will have accumulated \$2,500,000 by next year and will be entitled to an equal sum in federal aid. It is planned to use this fund and utilize surplus labor from war factories in the building of roads.

Surveys for a Portion of the Lincoln Highway in the Utah Desert were made at night because of the impracticability of working in the dazzling, flickering light during the daytime. The section surveyed in this way is seventeen miles long and crosses a portion of the Utah desert. The work was done by the light of signal fires and construction work is now under way.

Where the Road Begins Its Winding Way Up the Big Thompson Canon



Scene at the Point of the Diversion Dam, at the Entrance to the Estes Park Gateway, Larimer County.

SILVERTON ROAD UNIQUE IN U. S.

The Stern Walls of the Amphithe

Famous Old Highway Cuts Thru Heart of One of
Most Rugged Sections in United States;
Will Be Link in 1200 Mile Tour.

IN the heart of the San Juan Range, one of the most rugged chains of mountains to be found in the world, rests the City of Silverton. High peaks surround the town on all sides, and in the more severe winters there are periods of from thirty to sixty days when the city is cut off from all communication with the valleys on the other side of the range.

In the summer time and in the fall few cities have a more picturesque setting than this and on the day when the new Durango-Silverton highway is completed, the first thousands of travelers will begin their pilgrimage through this district. The town is one with a past, a present, and a future, and in each of these aspects it possesses more than the ordinary interest for the traveler.

Hundreds of years ago, the Spanish adventurers in search of gold penetrated into Southwestern Colorado. The Needles of the San Juan, which lie to the south of Silverton, were seen and described by them, but the impenetrable passes of the range held them at bay and as far as is known, none of them ever ventured into the high hills.

In 1848 Fremont made his way up the Rio Grande River with a government expedition in search for a location for a short railroad route from the Atlantic to the Pacific coast.

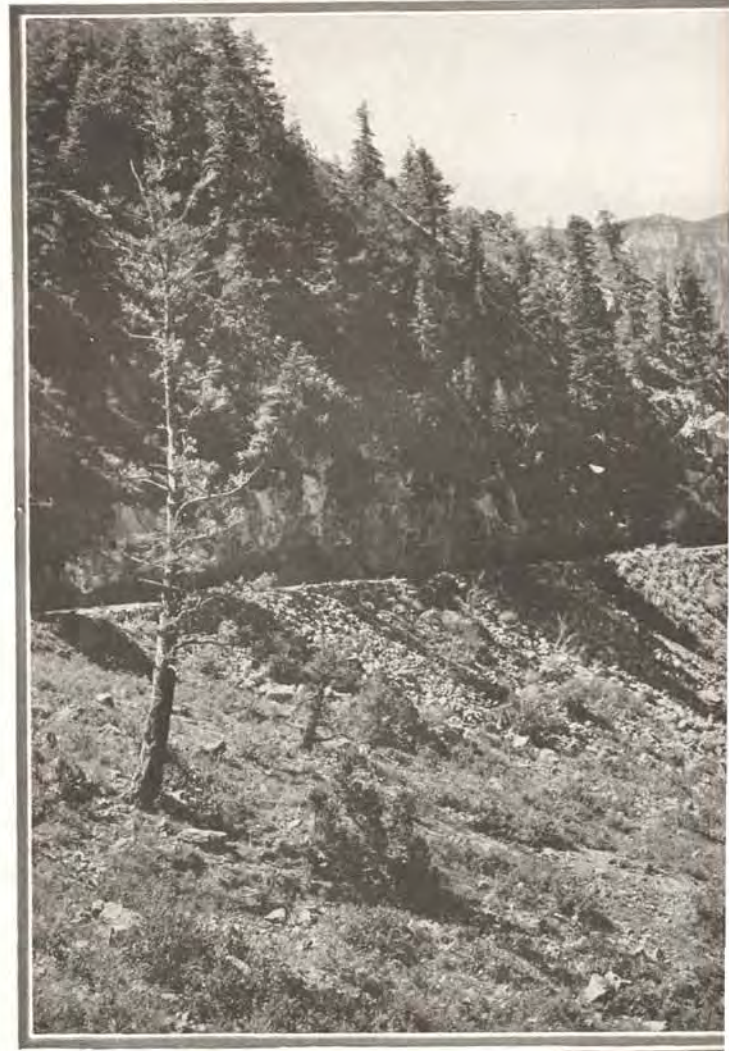
Working his way gradually along the river he and his party arrived at a point which has since become known as Starvation Gulch, and which is probably some twenty miles from Silverton.

Apparently the purpose of the explorers was to work to the south as winter was approaching and they did not care to get caught in the mountains at this season of the year. Instead of reaching a lower altitude, their route carried them gradually into the heights of the divide.

At Starvation Gulch, the first snow storm hit them and before they could retrace their steps, winter had set in. Heavy snow falls on all sides of them hemmed the expedition in and it became necessary for Fremont to send out runners for help. Four men were dispatched for assistance before one got through, and finally it was the Indians who came to the rescue of the party. Before this time, however, several members of the party had died, the stock had been killed off and those who survived were nearly all ill. It was months before they recovered from their experience.

This marked the conclusion of Fremont's attempt to reach the south via the Silverton district and it was not until 1860 that a second attempt was made to penetrate the range.

Then John Baker's expedition worked their way into the valley prospecting as they went and for a long time after that the valley was known as Baker's Park. It was



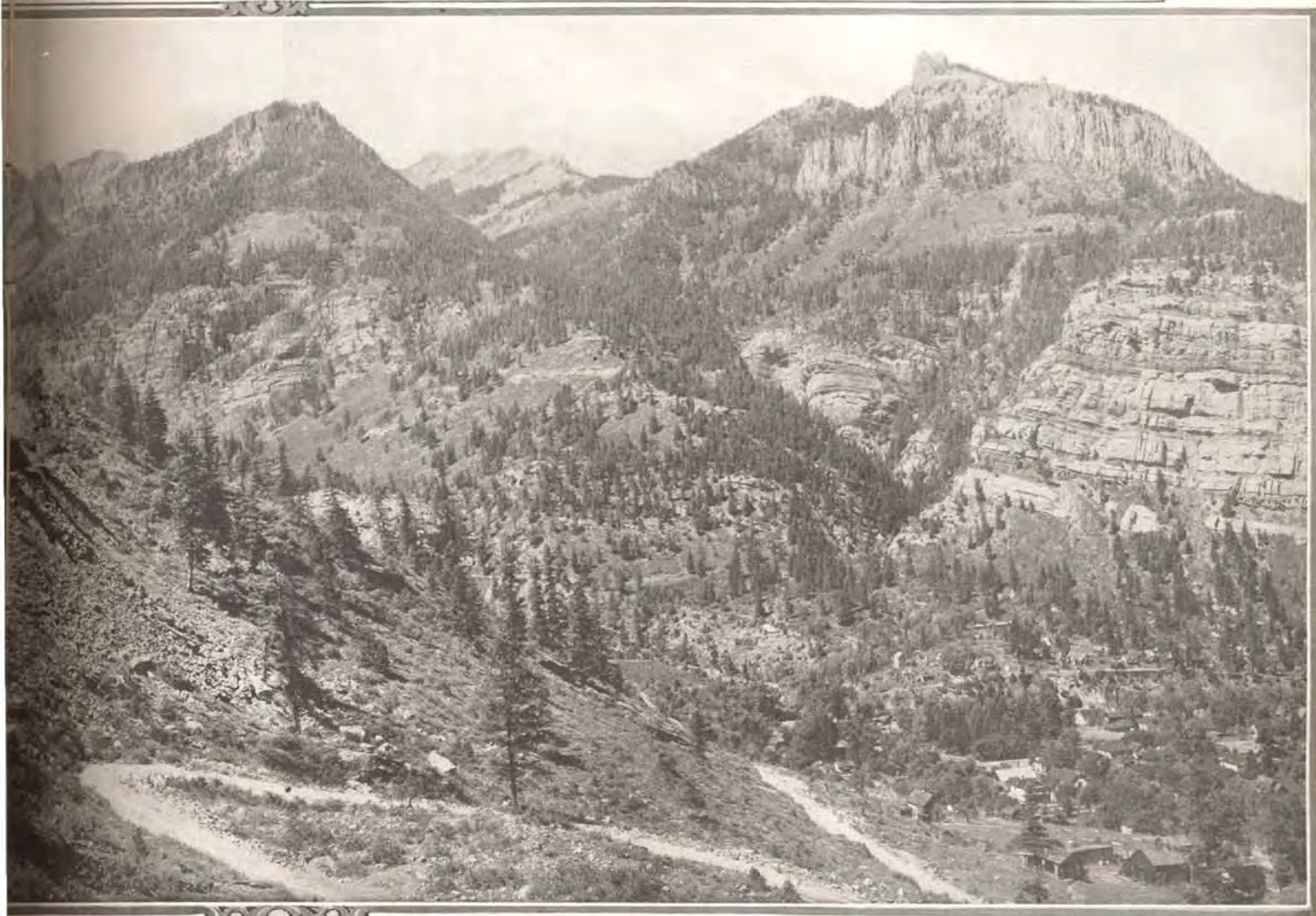
not until 1870, however, that pay ore was found in this district, but from that time on mining development was rapid and settlers poured into the valley.

With the influx of travel came a demand for transportation. The situation was far more serious than that presented in even the mountain counties of the state as all of the outlets from Silverton are rugged in the extreme and for a long time pack saddles were the only means of communication.

Then came Otto Mears, master among the road builders of the early days in the state, with a proposal to construct a toll road which should take the travel from Ouray over the heights of Red Mountain, thence down to Silverton.

To fully appreciate the nature of this undertaking, it is necessary to see the canyon of the Uncompahgre. The stream drops down from Red Mountain at an exceedingly rapid rate through a box canyon whose walls of solid rock rise sheer from the river bed to a height of thousands of feet. There was no possibility of construction of a road along the river, and had it been possible, the high waters of

on the Heights Above Ouray on the Famous Old Toll Road to Silverton



early spring would have washed out the roadway more often than it could be repaired.

The only alternative presented was to blast the roadway from the side walls for a major portion of the distance and when it is remembered that this was in the days before the modern road tools were known, some idea of the difficulty of the undertaking may be had.

But Mears was never the man to stop at impossibilities. The whole history of his road work was one of undertaking projects which others scoffed at as the plans of an idle dreamer and the Silverton road was no exception.

Construction was started against unheard of odds, and problem after problem was overcome as the work proceeded. Whole cliffs were shot off and dropped into the canyon and the hills echoed to constant drum of dynamite blasts.

The road was finished in 1883 and from that time on has been traveled by a steady procession of six "hoss" teams, carrying thousands of tons of precious metals, supplies and other materials to the plains below.

Of recent years, with the advent of the automobile, passenger traffic has started and with the opening of the Durango unit, this will be immeasurably increased in the years to come.

Winding along the walls of the canyon, sometimes looking down for sheer depths of a thousand feet, past fine waterfalls into the heart of the range where snow-clad hills forever guard the way, the trip is one of unsurpassed beauty. Distinctive in its ruggedness, unique in the character of the road, unexcelled in the beauty of its setting, the old toll road is destined to lead a new stream of wealth into the Silverton district and the camp, which is today the center of some of the richest producing mines in the state, will unquestionably be a gathering point in the near future for a host of travelers, whose advent will make it one of the famed mountain resorts of the world.

Only the war now stands in the way of the fulfillment of this new era for Silverton, Ouray, Durango and the surrounding towns of the district, and once peace is declared, the settlers may safely look for a tremendous renaissance.

COLORADO HIGHWAYS BULLETIN

Published Monthly
by the



Colorado Highway
Department

Denver, Colorado.

With the approval of the Colorado State Auditing Board.

Address all communications to Colorado Highway Department, attention Pyke Johnson, editor, Colorado Highways Bulletin.

Owing to the necessarily limited edition of this publication it will be impossible to distribute it free to any persons or institutions other than state and county officials actually engaged in the planning or construction of highways, instructors in highway engineering, newspapers and periodicals and civic associations. Others desiring to obtain Colorado Highways can do so by sending 10 cents for each number desired. Associations desiring to distribute the magazine can obtain it at cost in lots of from 500 copies up. Subscription Price, \$1.00 per year.

Vol. I.

December, 1918

No. 7

ROADS AND RECONSTRUCTION.

The war is over, but in its wake has come peace with a multitude of problems infinitely more complex than those which had to be overcome on the battlefield.

The work of reconstruction is at hand and if this country is to be spared the horrors of Bolshevism, which are sweeping over grief-stricken Europe, a comprehensive program, which will provide employment for thousands upon thousands of soldier-laborers, must be commenced.

No field presenting itself to the immediate vision is more fertile for this work than that of road building. No single industry in the United States reaches down to the fundamental principles of community life more deeply, no question is more vital at the present moment.

We must have roads, good roads, permanent roads. We must have them not by the hundreds of miles, but by the thousands and they must be so constructed as to withstand the hammering of a commercial traffic, beside which the abnormal truckage of the war will become as naught.

The world is clamoring for food. We are told by Herbert C. Hoover, food administrator, that it will take years to rehabilitate the rapidly diminishing stocks of Europe. In the meantime thousands are starving, while the United States remains as the one producing center on the globe which can and will provide a surplus for the hungry of other races.

But if this surplus is to be made effective, then our transportation facilities must be geared to a tension never before equalled in history. It is a comparatively easy matter for this country with its millions of acres of fertile lands to raise the crops, but once they are raised they must be transported, and the first step in 99 per cent. of the transportation of the world is the road, whether the ultimate carrier be the railroad or the water way.

In response for the immediate necessity for transportation, the motor truck has been evolved as an efficient, fast

moving carrier which serves to conserve labor, reduce costs and to stimulate production while relieving congestion.

But while the motor truck has answered the call, the road has not.

Gutted out by the incessant hammering in rain or shine, night and day, chipped to pieces by the traffic in days of frost, ripped to the very vitals, the road of today is in sorry plight. If transportation is to continue, these conditions must be cured. To cure them, funds expended on an unheard-of scale are necessary.

The question is an elemental one. Stripped of all verbiage it spells prosperity or ruin to the United States according to the manner in which it is handled.

Good roads mean reduced costs of living, wider marketing spheres, development of natural resources. Poor roads will inevitably bring about an exactly opposite condition.

Here in Colorado the question resolves itself into one upon which the future of this state depends. If we are to develop our untold acreage of arid lands, if we are to exploit the millions of dollars of potential wealth in our hills, if we are to bring in thousands of travelers, we must have roads. There is no denying or begging the question. It is before us and we must meet it.

Presented from a national viewpoint, the question is one which demands a federal road commission and a liberal federal aid act, which will serve to develop every main highway in the United States.

Presented from the viewpoint of the state, the question demands more funds for the improvement of our miles of county and secondary highways.

It is not a gift which is asked of the people of Colorado when this request is made. It is a positive, gilt-edge investment which they are requested to make.

If these funds are given, the individual will benefit through a positive known reduction in the cost of his traveling expenses on the road, whether he use horse or machine. He will benefit through the new channels of trade which will be opened to him, through a reduction of costs in everything he buys, since the element of transportation affects the price of every commodity. He will benefit through the increase in realty values, through a broadened horizon of life, in countless other ways.

The issue is plainly before every citizen in this state as it is before those in very other state.

Roads and prosperity or isolation and poverty.

Which shall it be?

TRAFFIC LIMITATIONS.

The chart prepared by Chief Engineer Jas. E. Maloney and published elsewhere in this issue can hardly be termed popular literature, yet the findings therein, when coupled up with the cost of operation, are of serious interest to every resident of Colorado. These conclusions will present a data for future road work which every county commissioner will find worthy of close study.

Nebraska Developing Gateways to Colorado

An Interview with George E. Johnson, Engineer in Charge of Nebraska Roads

“THE day for road building on a large scale throughout the United States is at hand. We must have more funds for road work and the problem is one which is too big for the individual states to handle. We need funds from the United States government and they should be given to the state highway departments in a way which will be as free from ‘red tape’ as possible and which will enable us to proceed to our work without delay.”

Such, in effect, was the opinion expressed by George E. Johnson, road engineer in charge of the highway department of Nebraska, who was in Denver recently on a short business trip.

Mr. Johnson took occasion to visit the state highway department while here, and expressed himself as strongly in favor of a unified program of action on the part of the West, which will secure adequate representation for this section of the country from the next Congress.

Talking about the Federal Aid Act as it applies in his state today, Mr. Johnson said:

“For a full understanding of the workings of the Federal Aid Act it is necessary to know first what our state department has in funds and how they are applied.

“At the present time the state meets the Federal Aid dollar for dollar. Fees from motor car registration go direct to the counties, hence our entire state fund is limited to the Federal Act.

“In consequence of the rules governing that act, it has frequently been necessary for us to either expend large sums on roads which do not need the work or hold back the appropriations. We asked the department of agriculture for a ruling, saying that funds might be used on roads which would open up new country, thus providing post routes, but while they assented, the money has never been so appropriated.

“At the present time we are fostering a bill which will tax all cars 50 cents per 100 pounds, which we believe is the real basis for taxation since it is weight which destroys the roads.

“It is our hope that the Federal Government will grant us more liberal aid in the future with fewer restrictions.”

Talking about work on the gateways leading into Colorado, Mr. Johnson said that the O-L-D highway is practically all a Federal aid project. Some fifteen or sixteen miles of this highway has been permanently improved and the department hopes to be able to continue work on this gateway which is one of the most important of those leading into Colorado.

The Lincoln highway is partially under Federal aid, and is constantly being improved here and there.

In general the state has worked out a state highway system based upon communication between county seats and has taken over supervision of these roads.

However, most of the construction work in Nebraska is being done by the counties. These organizations are required to do grading on their roads from the funds received from motor registrations and in bridge work they are given assistance by the state out of a separate fund.

In addition to his work in charge of the highways, Mr. Johnson is also chairman of the Highways Transport Committee of the State Council of Defense, thus affording the council the same close connection with the state highway department in Nebraska as it has in Colorado.

Talking about this phase of his work, Mr. Johnson said:

“We have been able to do a good deal of development work in Nebraska with the motor truck as medium. Most of this has been in the haulage of live stock, but the work is gradually spreading out.

“Motor trucks are under the common carrier act in Nebraska, a feature which has aided us materially in the regulation of traffic.

“All companies are required to file their rates with the railway commission and after an operating period of about three months these are analyzed and revised to make them equitable to operator and shipper alike.”

Mr. Johnson is an active member of the State Highway Department Association of the United States, and will be one of those present at the annual meeting of that organization which will be held in conjunction with the meeting of the Highways Industries Association in December in Chicago.

He has well formulated plans regarding road work in the Western country and he will be one of the strongest proponents of favorable road legislation at the Chicago meeting.

HIGHWAYS ON THE ISLAND OF TRINIDAD

There are about 600 miles of road suitable for motor trucks on the Island of Trinidad, according to Consul Henry D. Baker, writing in a recent issue of the “Commerce Reports.”

The railroads of the island face so heavy competition from coastwise shipping that little effort is made to develop them. The more important towns are situated on the coast and most of the larger estates inland are connected with the coast by roads that will carry cart or motor truck traffic.

At present there are over 750 motor vehicles registered in Trinidad, and about 100 of them are trucks. The latter are not very extensively used for the carrying of freight, but their advantages for such work are beginning to be recognized, and it is probable that when importing conditions become easier, motor truck transportation will be further developed.

APPLICATIONS FOR FORSTRY WORK.

Applications for road funds from the U. S. Forest Service should be placed in the hands of District Forester Smith Riley not later than January 1 to receive consideration. The annual distribution of funds will be made shortly thereafter.

Grade Limits and Traffic Conditions

By J. E. Maloney, Chief Engineer State Highway Commission

THIS map and table of highway traffic are based upon the traffic census reports for 1917 and 1918, covering the month of August, weighted for load and season, as indicated in the last month's notes.

These records, with a few interpolations, cover 3827.6 miles of the more important state routes, out of a total of 7,000 miles of state routes.

The traffic is conservatively stated, particularly in regard to the wagon haul, as the records were not taken when much produce, grain, or beets were being hauled.

The traffic upon many hundred miles of the north and south roads, east of Denver, is indicated by the two roads in Yuma County, the only two upon which any record was available. These show an average equal to the gen-

eral average traffic per mile of all the roads.

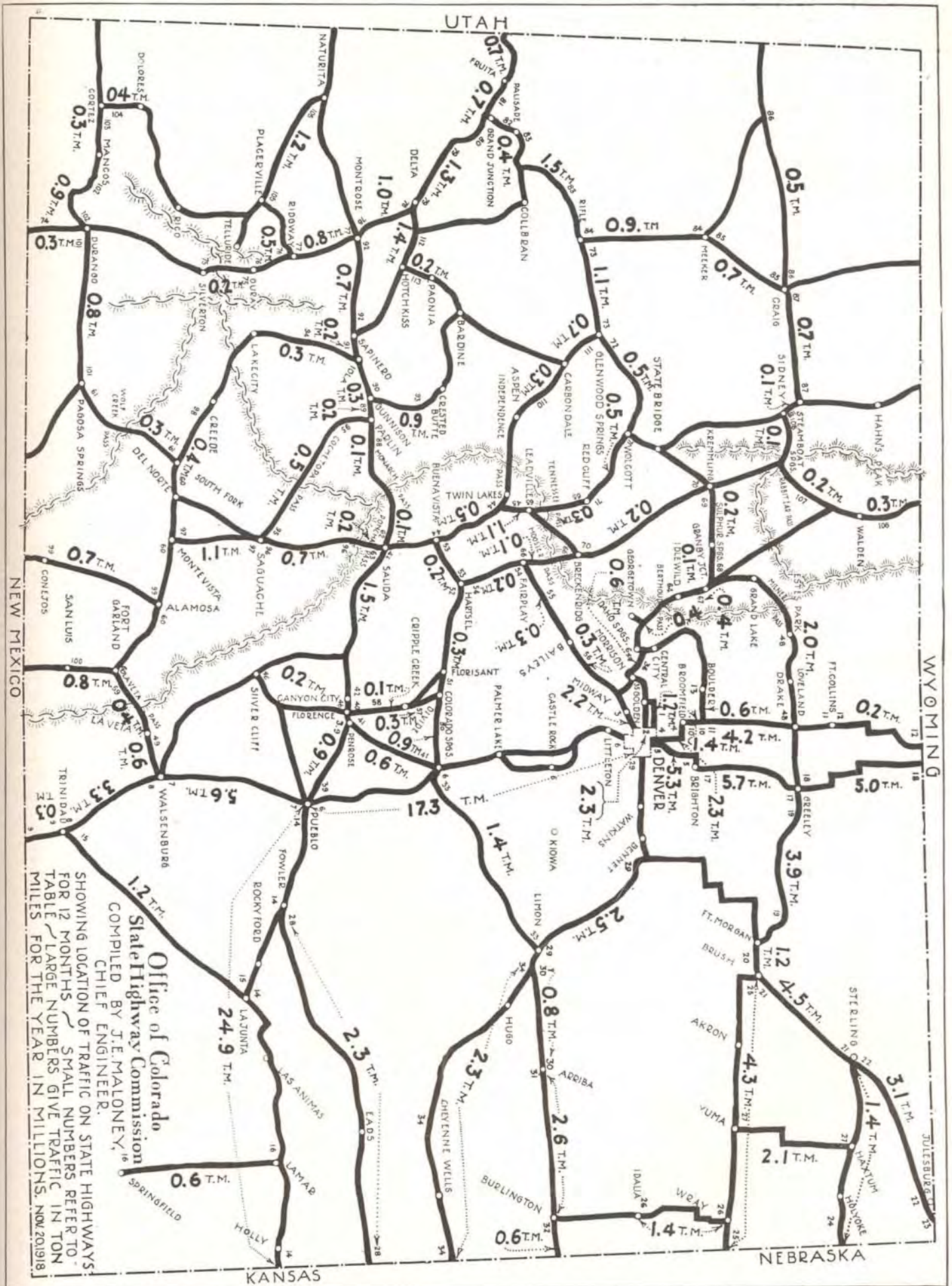
Believing that the ton-mile use of a road is the correct measure of its economic importance, also of the character of the improvements warranted, it is hoped that we can develop this table and complete the record for the main routes of the state.

It will be noted that the roads Trinidad via Denver to Fort Collins, Denver to Greeley via Brighton, Pueblo to Lamar, Grand Junction to Palisade, and Fort Morgan to Sterling, show the heaviest traffic.

If the cost of operation is considered in connection with the use of the road, a measure may be had of the economy of proposed improvements, and this phase will be taken up next.

Colorado Highway Traffic Table for the Year 1918

Reference No. on Map	East of Continental Divide.		Ton Miles				Ton Miles per Mile of Road for year	Remarks
	Road	Location	Autos	Trucks	Wagons	Total		
1	N. Golden	Denver-Golden	713,517	465,531	62,478	1,241,526	9.7	127,992 Gravel road.
2	S. Golden	Denver-Golden	1,722,281	465,531	104,130	2,291,942	9.0	254,660 Concrete road.
3	Morrison	Denver-Morrison	1,804,295	341,389	63,635	2,209,319	11.0	200,847
4	N. & S. Road	Denver-Broomfield	1,708,612	517,256	86,775	2,312,643	12.5	185,011
5	Brighton	Denver-Brighton	2,988,735	1,976,974	315,861	5,281,570	13.8	382,722 1.7 miles concrete.
6	N. & S. Road	Denver-Pueblo	14,061,524	3,103,537	115,700	17,280,761	117.0	147,700 4 miles paved. No record at
7	N. & S. Road	Pueblo-Walsenburg	3,922,974	1,500,113	210,574	5,633,661	54.0	104,327 Colorado Springs.
8	N. & S. Road	Walsenburg-Trinidad	No record	No record	No record	3,230,000	41.0	80,000
9	N. & S. Road	Trinidad-State Line	No record	No record	No record	230,000	14.0	20,000 To Raton Pass.
10	N. & S. Road	Broomfield-Boulder Jct.	1,025,168	310,354	52,065	1,387,587	7.5	185,012
11	N. & S. Road	Ft. Collins-Boulder Jct.	3,567,583	450,013	201,318	4,218,914	43.5	96,986
12	N. & S. Road	Ft. Collins-State Line	No record	No record	No record	939,418	32.0	29,357
13	Boulder Road	Junction-Boulder	No record	No record	No record	606,012	9.0	67,332
14	Santa Fe Trail	Pueblo-State Line	15,970,539	7,680,842	1,321,294	24,972,675	162.5	153,678
15	Old S. Fe Trail	Trinidad-La Junta	656,107	165,522	370,240	1,191,869	80.0	14,899
16	O. L. D.	Lamar-Springfield	459,095	129,125	27,768	615,988	40.0	15,338
17	Cheyenne Rd.	Brighton-Greeley	3,827,292	1,448,317	404,950	5,680,559	36.4	156,059 No record at Greeley.
18	Cheyenne Rd.	Greeley-State Line N.	3,280,636	1,241,415	462,800	4,984,851	44.0	113,292 No record at Greeley.
19	Platte Riv'r Rd.	Greeley-Ft. Morgan	3,230,536	310,354	277,680	3,867,570	64.0	60,431 No record at Greeley.
20	Platte Riv'r Rd.	Ft. Morgan-Brush	984,161	55,864	124,956	1,164,981	9.5	122,629
21	Platte Riv'r Rd.	Brush-Sterling	3,827,290	413,805	277,680	4,518,775	42.0	107,590
22	Platte Riv'r Rd.	Sterling-Julesburg	2,460,402	310,354	347,100	3,117,856	62.0	50,288
23	Platte Riv'r Rd.	Julesburg-State Line	172,228	13,966	26,033	212,227	4.5	46,720
24	D. L. D.	Sterling-State Line E.	1,148,188	72,416	138,840	1,359,444	73.0	18,622 No record east of Sterling.
25	Akron-Wray	Brush-State Line E.	3,280,536	517,256	462,800	4,260,592	112.0	38,041
26	N. & S. Road	Wray-Idalia	967,758	186,212	296,192	1,450,162	30.0	48,339
27	N. & S. Road	Yuma-Haxton	1,465,306	239,664	333,216	2,038,186	40.0	52,205
28	Mo. Pac. Road	Fowler-Eads to State L.	1,776,957	134,487	360,984	2,272,428	130.0	17,480
29	Midland Tr.	Denver-Limon	2,187,024	165,522	185,120	2,537,666	84.0	30,210 No record at Limon.
30	Golden Belt	Limon-Arriba	683,445	51,726	57,850	793,021	25.0	31,721
31	Rock Isl'nd R.	Arriba-Burlington	2,255,369	170,695	127,270	2,553,334	55.0	46,424
32	Pike's Peak H.	Burlington-State Line E.	546,756	51,726	30,082	628,564	13.0	48,351
33		Colorado Springs-Limon	1,093,512	165,522	92,560	1,351,594	81.0	16,836 No record at Limon.
34	Union Pac. Rd.	Limon to State Line E.	1,804,295	341,389	127,270	2,272,954	110.0	20,663
35	Lookout Mt.	Golden-Creswell	1,117,800	90,956	18,000	1,226,756	15.0	81,784
36	Lookout Mt.	Creswell-Idaho Springs	467,820	121,275	24,000	613,095	10.0	61,310
37	Lookout Mt.	Creswell-Morrison	No record	No record	No record	No record	No record	
38		Central City-Nederland	149,040	16,538	52,500	218,078	11.6	18,800
39		Pueblo-Penrose	683,445	155,177	46,280	884,902	29.0	31,607
40		Penrose-Canon City	574,094	72,416	97,188	743,698	14.5	51,239
41	Rainbow Rt.	Penrose-Colo. Springs	546,756	41,381	23,150	611,287	41.0	14,909 No record.
42		Canon City-Salida	1,366,890	73,500	40,000	1,480,390	58.1	25,480
43		Salida-Buena Vista	753,430	321,048	217,140	1,291,618	26.0	49,678
44		Buena Vista-Twin Lakes	432,216	16,538	57,600	506,354	25.0	20,254
45		Twin Lakes-Leadville	715,392	152,145	230,800	1,097,537	16.0	68,596
46		Florence-Silver Cliff	226,044	23,153	32,400	281,597	37.0	7,611
47		Sedalia-West Creek	55,890	11,025	16,000	82,915	27.8	2,979
48	Estes Park Rd.							
49	Big Thompson	Loveland-Estes Park	1,271,808	690,000	10,800	1,972,608	32.0	61,644 Pass. busses inc. in trucks.
50	Spanish Tr.	Walsenburg-La Veta	397,440	94,080	86,400	577,920	16.6	34,815
51	Ute Pass Rd.	Colo. Spgs.-Woodland Pk.	894,240	52,920	36,000	983,160	18.0	54,620 No record at Colo. Springs.
52		Woodland Pk.-Florissant	349,324	47,040	28,800	425,764	16.7	25,495
53		Florissant-Hartsel	298,080	22,050	7,200	327,330	41.3	7,925
54		Hartsel-Buena Vista	197,064	7,764	21,000	225,828	23.0	8,065
55		Hartsel-Fairplay	218,156	15,435	8,000	241,591	21.0	11,504
56		Fairplay-Baileys	298,080	22,050	9,000	329,130	42.2	7,799 No record.
57		Baileys-Morrison	317,952	19,845	10,800	348,597	32.8	10,638 No record.
58		Florissant-Cripple Creek	232,371	24,990	42,720	300,081	17.8	16,858
59		Cripple Creek-Florence	83,462	20,580	28,000	132,042	28.0	4,716
60	La Veta Pass	La Veta-Ft. Garland	372,600		30,000	402,600	35.8	11,036 No record. 7 mos. open rd.
61		Ft. Garland-South Fork	No record	up Rio Grande River	except at Creede			
62	Wolf C. Pass	South Fork-Pagosa	241,500	18,375	6,000	265,875	50.8	5,234 6 mos. open rd.
63	Monarch Pass	Salida-Pass	84,180	5,880	16,000	106,060	23.7	4,475 5 1/2 mos. open rd.
64	Poncha Pass	Salida-Pass	212,382		21,600	233,982	9.5	24,630 8 mos. open rd.
65	Berthoud Pass	Idaho Spgs.-Idlewild	403,650	No record	No record	403,650	25.0	16,146 6 mos. open rd.
66	Tennessee Ps.	Leadville-Red Cliff	125,856	30,429	99,600	255,885	23.2	11,030 6 mos. open rd.
67	Hoosier Pass	Fairplay-Breckenridge	142,830	8,453	6,000	157,283	23.6	6,664 6 mos. open rd.
68		Granby Jct.-Idlewild	387,504	No record	No record	387,504	16.0	24,218
		Granby Jct.-Sulphur Sp.	127,512	6,064	4,400	137,976	11.0	12,543



Colorado Highway Traffic Table for the Year 1918

Reference No. on Map	East of Continental Divide		Ton Miles				Ton Miles per Mile of Road of Year		Remarks	
	Road	Location	Autos	Trucks	Wagons	Total	Miles of Road	of Road		
69	Western Mountain Slope and Valley Roads	Kremmling-Sulphur Sps.	220,248	10,474	7,600	238,322	19.2	12,413		
70		Kremmling-Breckenridge	185,472	.....	10,000	195,472	32.2	6,070	
71		Red Cliff-Wolcott	229,050	71,442	168,000	468,492	27.0	17,352		
72		Wolcott-Glenwood Spgs.	425,040	25,725	72,000	522,765	35.0	14,936		
73		Rifle-Glenwood Springs	792,796	60,002	268,424	1,121,222	29.0	38,663		
74		West. N & S Rd Durango-State Line S.	157,192	71,381	78,676	307,249	23.5	18,074		
75		Ouray-Silverton	99,360	52,920	28,000	180,280	24.0	7,512		
76		Ouray-Ridgway	355,391	51,726	69,420	476,537	16.7	44,535		
77		Montrose-Ridgway	535,821	71,321	236,628	843,170	21.2	39,772		
78		Montrose-Delta	683,445	124,142	231,400	1,038,987	22.5	46,177		
79		Whitewater-Delta	656,107	155,177	462,800	1,274,084	33.2	38,376		
80		Whitewater-Grand Jct.	341,723	124,142	261,482	727,347	10.5	69,271		
81		Fruita-Grand Junction	229,638	72,416	401,710	703,764	14.5	48,535		
82		Palisade-Grand Jct.	183,710	115,865	127,733	427,308	4.0	106,827		
83		Palisade-Rifle	956,823	413,805	97,188	1,467,816	70.0	20,969		
84		Meeker-Rifle	557,691	248,283	129,584	935,558	42.0	22,275		
85		Meeker-Craig	414,000	147,000	160,000	721,000	48.0	15,021		
86		Craig-State Line W.	397,440	29,400	54,670	481,510	94.0	5,122		
87		Craig-Steamboat Spgs.	546,480	88,200	72,000	706,680	42.0	16,826		
88		Rainbow	103,500	14,700	18,512	136,712	28.5	4,797	Monarch Pass. 5½ months open road.	
89		Gunnison-Parlin	134,343	6,615	11,570	152,528	12.5	12,202		
90		Gunnison-Iola	245,916	15,876	21,600	283,392	12.0	23,616		
91		Sapnerero-Iola	159,390	9,261	16,800	185,451	14.0	13,247		
92		Sapnerero-Montrose	491,832	105,840	111,072	708,744	42.5	16,676		
93		Gunnison-Crested Buttes	730,296	39,690	152,000	921,986	30.0	30,733		
94		Iola-Lake City	248,400	.....	12,000	260,400	54.0	4,822	
95		Parlins-Saguache	422,280	.....	36,000	458,280	68.0	6,739	Over Cochetopa Hill.
96		Poncha Pass-Saguache	645,840	.....	36,000	681,840	41.5	16,430	
97		Monte Vista-Saguache	908,902	108,624	106,444	1,124,050	35.0	32,113	Gunbarrel Road.	
98		South Fork-Creedde	412,344	.....	63,000	475,344	24.1	19,704	
99		Alamosa-Conejos	546,756	25,863	157,352	729,971	27.0	27,036		
100		Spanish Trail	437,405	.....	422,074	859,479	16.0	53,716	
101		Pagosa-Durango	658,260	88,200	30,000	776,460	64.9	11,964		
102		Mancos-Durango	417,312	317,520	132,000	866,832	30.4	28,514		
103		Mancos-Cortez	241,445	13,230	50,400	305,075	18.4	16,550		
104		Dolores-Cortez	269,004	87,318	88,800	445,122	12.5	35,611		
105		Placerville-Naturita	794,880	411,600	44,000	1,250,480	40.0	31,262		
106		Walden-State Line N.	264,960	2,940	24,000	291,900	24.0	12,163		
107		Walden-Rabbit Ear Pass	142,830	5,513	4,500	152,843	34.0	4,495	6 months open road.	
108		Sydney-Rabbit Ear Pass	132,066	4,042	4,000	140,108	22.9	6,118		
109		Sydney-Steamboat Spgs.	96,048	4,410	20,400	120,858	4.0	30,215		
110		Carbondale-Aspen	138,720	11,025	90,000	239,745	27.8	10,788		
111		Carbondale-Glenw'd Sps.	447,120	36,750	201,600	715,470	13.2	54,202		
112		Delta-Hotchkiss	894,240	105,840	412,000	1,412,080	24.0	58,837		
113		Paonia-Hotchkiss	110,843	.....	100,800	241,643	9.0	26,849	
Totals			115,539,888	28,576,262	13,696,238	162,926,098	3,827.50	42,566	—Avg. per m., 3,827.6 miles.	

Brief Items About Road Work in Colorado

Dolores County Commissioners have let the contract for the bridge across the Dolores River at Montelores subject to the approval of the state highway department. This structure will be a 75-foot span with concrete abutments.

Supervisor Ike Taylor, of Gunnison County, and his road crew have finished the work of improvement on the Muddy Creek road between Bardine and Spring Creek. The work comprised about six miles of construction and was necessary as an outlet for the farmers in the valley above Bardine.

The third stretch of concrete highway to be completed out of Denver is now open to traffic from Denver to the turn at Littleton. This eliminates the need of further diversion of travel from Littleton into Denver via Broadway, as the old road into Littleton can be taken from the turn without loss of time.

The road which is four miles long is the first Federal Aid project to be completed in Colorado and was constructed at a cost of approximately \$76,000, one-half of which was borne by the state, the rest by the national government.

Assistant Highway Engineer Cheney has returned from Granite where he was supervising construction on Federal Aid Project No. 3, from Granite to Twin Lakes. Work has been discontinued because of adverse weather conditions, but will begin again with the first touch of spring.

The engineers of the U. S. Office of Public Roads are now investigating the cost of improvements to be made on the road

between Dolores and Rico. The strip will comprise one of the main road openings from the southwestern end of the state to Montrose and Grand Junction and as such is regarded as one of the most important links in the state. The purpose of the investigation is to furnish a basis for construction cost, which the U. S. Forestry Department and the state department will share.

An investigation has been made into the highway running from Pagosa Springs to Chama, New Mexico, with a view to its future improvement by the U. S. Forestry Department. This road is one of the main gateways into Colorado from the south and its improvement will materially increase the volume of traffic in this region.

Construction work has been discontinued throughout Larimer County, save on the Poudre, until weather conditions improve. Maintenance is being done wherever needed, but most of the road men have come in for the winter.

Contractor Edward O'Neill has started work on Federal Aid Project No. 4, between Meeker and Rifle, but it will be the end of next season before this work can be completed. Preliminary work includes the establishment of a camp and preparation of the lime shale quarries for material for surfacing the highway.

Good progress is being made on the Federal Aid Project between Lamar and Springfield. The bridge over Sand Creek is about completed and the contractors expect to complete the grading and surfacing of the 3.5 miles stretch of road by next month.

The New Era of State Development

(Continued from page 4.)

Colorado tell the prospective investor, honestly and intelligently, concerning the best locations? Can it tell him where the potatoes and the fruits are produced, and in what quantities? Can it tell him what disposition is made of the present crop and what opportunities there are for increasing the production of today when his factory has made increased production profitable? Can it tell the small investor the approximate cost of the construction and equipment of a plant, the cost of operation, the railroad and highway facilities and the existence or non-existence of a near-by market for his manufactured product?

To be prepared, Colorado must be equipped with facts, not fancies; true totals, not the estimates of enthusiasts and boosters. It must know today what the prospects for tomorrow are, and it cannot know that without knowing first the history of all the yesterdays.

What is the answer to criticisms of that sort? It is late, but not too late for Colorado to begin to prepare itself to deal intelligently with the problems of immigration and development, which now begin to assume a degree of importance never realized in the past. There is, beyond question, a tide of immigration which within a few months will set westward and which will stagger the imagination of the most optimistic. For nearly two years the great war has held immigration at a standstill. The government did not encourage the movement of people from one section of the country to another, and the government controlled the railroads and their rates. Homeseekers' rates were annulled and immigration was discouraged. The west suffered temporarily, but the reaction which will set in now will compensate for that temporary loss many times over.

The return of the soldiers means more than the voluntary statement of 500,000 men that they want to return to farm life rather than to the cities. It means that thousands of men will be released by the return of men who went from the farms to the military service, and that these thousands are going to turn their eyes to the lower priced lands of the west, where population has not yet exceeded the possibilities of the land. It means that within the next ten years the population of the west is going to be increased by millions, not by thousands.

What are the western states, and particularly Colorado, going to do to meet the tremendous demand for information that is coming? Are we to tell them that there are millions of acres of farm land and billions of dollars in the manufacturing industries and the mines awaiting them, and let it go at that? Are we going to content ourselves with the vague generalities which merely confuse, or are we going to make an honest, earnest effort to give to each man the specific information which his problem demands?

Unless the state takes the measures necessary to secure the accurate, specific information, it must content itself

with the generalities, which too frequently send the applicant away disgusted instead of inducing him to remain and to add to the wealth of the state his capital, whether it be brains, muscle or money. If Colorado is to give him the sort of information which will encourage him to remain, it must undertake at once a most extensive survey of its record in the past and the possibilities of the future. Its agents must cover every corner of the state, delving into the problems of agriculture, mining, stock growing, manufacturing and business.

It must know its opportunities and be able to prove that they are, in truth, real opportunities, not mere temptations. It must prove its case to the cautious investor and be prepared to deal intelligently with the man who brings little but his energy and his experience. It must show each how to make the most of his capital, give him reason to believe that he has more than a fighting chance of success; and to do that it must first know the facts itself.

Colorado's legislature must enact laws providing for the gathering of information concerning its every opportunity, and it must, if it wants to secure the lion's share of the flood of immigration, go further, as Australia, New Zealand and other countries have, and arrange for the purchase and improvement of its idle lands and the arrangement of terms under which the honest, intelligent workman can achieve success without more than an ordinary total of cash capital. It must co-operate with its new-comers, helping them to success instead of standing by and watching them cope disconsolately with all the problems of one in a strange land and without an inexhaustible supply of capital.

Such a program, sanely and intelligently carried out, cannot but result in tremendous increases in the valuation of the state and in the total of its taxable property. It cannot fail to bring about the development for which all the state looks and wonders why it does not come more rapidly. It will add millions—even billions—to the contribution of Colorado to the world's supplies. It will bring Colorado from a place in the last ranks of states as producers to a place in the front ranks.

No other state possesses possibilities exceeding Colorado's, but these possibilities can not be made into realities, or even into probabilities, unless the state itself possesses the broad vision which has made it possible for little countries, remote from the world's centers, to attract worldwide attention. Immigration and development are not problems of securing something from the settler; they are problems which are solved when the state and the settler give alike—the one giving opportunity and substantial co-operation and the other giving his capital of brains, energy and money. A combination of that sort cannot fail to bring material prosperity to both.

Farm Homes for Returning Soldiers

(Continued from page 10.)

The California Land Settlement act created the Land Settlement board, consisting of five members with authority to purchase, subdivide and sell to settlers 10,000 acres of land. The board also was given authority to improve farms, loan money to settlers with which to purchase livestock and farming equipment and to provide practical advice in agriculture to beginners. In a general way settlers were given forty years' time to pay for their farms, with interest at five per cent.

After considerable study the board decided that a plan of group settlement should prove more successful than one that placed new farmers on individual tracts isolated from other farmers acquiring the land under the same plan. Several tracts were examined and the board finally selected a tract of 6,500 acres in Butte County, on which there was a partially completed irrigation system.

Without going into details, it is sufficient to say that the irrigation system was completed, the land was subdivided into farms, fences and farm buildings were erected, and in some cases the land was actually planted to crops. These farms then were allotted to certain of these who applied for them, though not nearly all could be taken care of. Settlers were constantly advised as to what crops to plant, how to prepare and cultivate the land, how to market crops to the best advantage and in general were furnished such expert advice as they needed. There are many details in connection with the working out of the plan that can not be discussed here, but President Mead of the Land Settlement board is authority for the statement that the plan has proved almost an unqualified success. The adoption of such a plan in Colorado would, of course, require special legislation and if meant exclusively as a soldier settlement enterprise would have to be modified considerably from the original California plan.

Professor Richard T. Ely, of the University of Wisconsin, believes that private commercial colonization, with certain modifications from the old established colonization methods, and perhaps with limited state control, will have to be depended upon for some time to come rather than state or federal colonization. He has made special study of certain colonization enterprises in Wisconsin, which he believes could be used as guides for private colonization enterprises to take care of returning soldiers. As an example he cites what is known as the "Rush Farm," in Rush County. Here the promoters of the colony furnish ready-made farms, much like those furnished under the California plan, and also provide capital for the purchase of livestock and equipment. They seek to make the comparatively small profit with which they are satisfied, not on the sale of the land, through increased price, so much as on the service they render the settler in selecting the land, properly dividing and equipping it and in furnishing expert advice to the

farmer after he begins cultivating his land. An experimental farm is a vital factor of this plan as it is of the California plan.

Professor Ely is convinced that such a colonization plan undertaken by private enterprise, scientifically directed, in the various states would aid greatly in solving the immediate needs of soldiers who soon will begin to be discharged from service. Of course, no state action would be necessary to put such a plan into operation.

Apparently very little attention has been given up to this time to the part that private capital, patriotically inclined and willing to be satisfied with a very low rate of income, might play in providing homes for our returning soldiers before state or federal agencies get their somewhat slow-moving machinery under way.

It is possible that capital, directed by individuals eager to do something toward keeping Colorado in the van of the procession of progress and at the same time to aid the boys who have fought for world freedom, might step in and by undertaking in a small way to provide farm homes for a few soldiers who want them at once, hasten and direct government action on a larger scale. It is assumed, of course, that such private enterprise would be undertaken with an understanding that profits to be returned would not exceed a certain agreed percentage of the funds invested.

There is precedent for such enterprise, both in this and in other countries. One notable example is that furnished by the City Suburban Homes Company, organized by Dr. E. R. L. Gould several years ago. The purpose of this company was not to make money for the organizers, but to furnish homes at small cost to deserving working people of very moderate means. The company has operated so as to return an income of five per cent. upon investment, and has succeeded in furnishing good homes for many working people who could never have purchased them from ordinary real estate and home-building companies.

The same principle might readily be applied to farm homes, exclusively for returning soldiers. There would be no element of charity in it, yet it would supply homes to many of our soldier boys who need them at once and who are not prepared to purchase them through the ordinary channels. Since the risk is perhaps a little higher than it would be in the case of suburban homes the plan apparently should provide for a somewhat higher return upon capital. It might be possible to organize a company of this kind in Colorado, to take over 10,000 acres of land or more, subdivide it into small farms, improve them and turn them over to soldiers, either on long time leases or on a partial payment plan covering a period of at least twenty years. It might be possible with proper publicity to interest the general public in such a plan, and to sell bonds in small denominations to furnish the capital. A successful enterprise of this kind carried out in Colorado would attract nation-wide attention.

Results of a State Development Policy

By the Colorado Department of Immigration

THE Colorado State Board of Immigration, though its available funds during the past two years have been smaller than those provided in most other states maintaining immigration departments, has accomplished much in the direction of general state development and in aiding state war work since the United States entered the World War.

The Immigration Department endeavors to keep a detailed permanent record showing the results obtained, so that the public may always be informed of what is being done and may determine whether or not the results justify the expenditures. It is difficult to trace all the investments made as a result of the work of the department or to get in touch with all persons locating in the state through the department's influence. A careful follow-up system is maintained, and through it the department is able to show directly some of the results obtained. Commercial bodies and many public-spirited people in all parts of the state co-operate with the department and their untiring aid is one of the chief factors in making the work of the department a success.

From time to time during the past eighteen months the department has prepared from its records and sent out to its co-operators lists of people located in the state and of investments made as a result of department activities. Seven such lists have been prepared. They do not contain records of nearly all the immigration and development work done, but they give a fair idea of what is being accomplished.

The following summary gives some of the most important work done by the department in the past two years:

The department has aided numerous drafted and enlisted men in disposing of their property and settling up their business affairs before entering military service.

It has brought approximately 10,000 people from other states to locate in Colorado, exclusive of those locating upon homestead land.

It has brought investments to the state, for farm lands, factories, business establishments, mining development, etc., amounting to more than \$10,000,000.

Among the business enterprises established are banks, drug stores, general stores, hardware stores, grain elevators, alfalfa meal mills and other factories. Locations also have been found for many physicians, attorneys, bankers and other professional men.

Approximately 4,750,000 acres of homestead land has been filed upon in Colorado in the past two years, much of it through the direct influence of the department.

Surveys have been conducted covering more than 250 towns and putting the department in the possession of information which has enabled it to furnish many needed business establishments, professional men, manufacturing industries and public utilities.

Numerous surveys have been conducted to determine the location and character of available privately-owned agricultural land not now in cultivation.

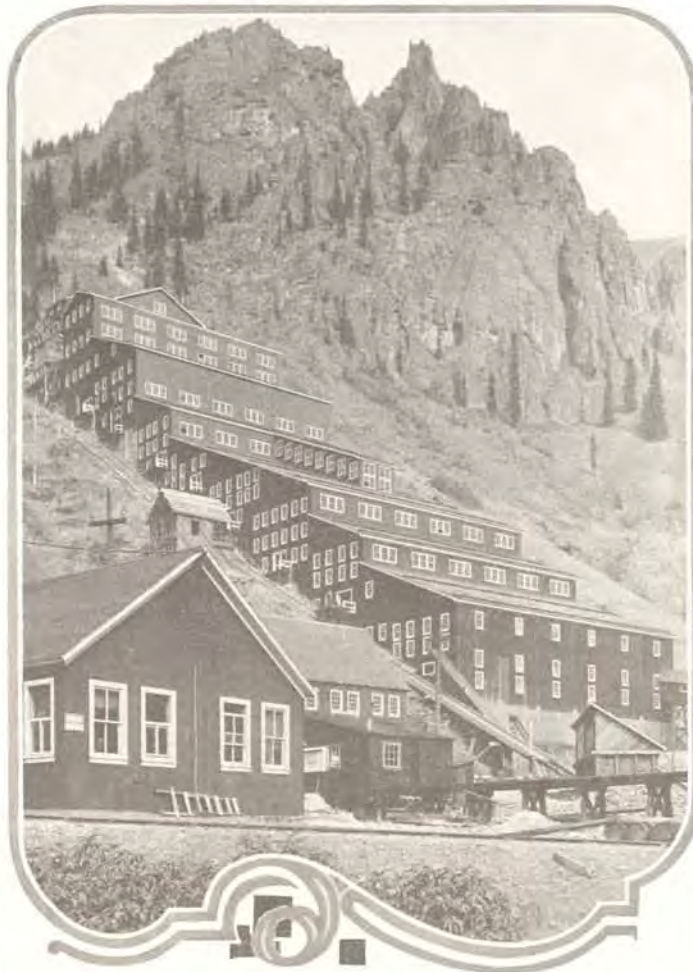
The department has been largely responsible for an increase of approximately 500,000 acres in the cultivated area within the state.

Numerous maps and pamphlets have been published,

giving authentic information on the vacant lands and undeveloped resources of the state, which have been widely distributed in other states, bringing hundreds of new settlers to Colorado.

Approximately 12,000 individual inquiries have been received from people in other states contemplating location or investment in Colorado. These have been carefully followed up and many of the inquirers have become citizens of the state.

Colorado Needs More Mills Like This One



Do Our Soldiers Want Homestead Lands?

By the Colorado Department of Immigration

In the discussion of plans for supplying homes in Colorado for returned soldiers considerable stress usually is laid upon the fact that there is more than 10,000,000 acres of government land open to homestead entry in this state. Usually it is assumed that most of this land will be just what is required as farms for all our own soldier boys who want them, with a considerable amount left over to be distributed among soldiers from other states.

The following table shows the acreage of homestead land open to entry on July 1, 1918, in each county:

County	Surveyed	Unsurveyed	Total
Adams	40	.....	40
Alamosa	56,507	3,840	60,347
Arapahoe	160	.....	160
Archuleta	72,575	.....	72,575
Baca	56,532	.....	56,532
Bent	51,845	.....	51,845
Boulder	760	.....	760
Chaffee	71,831	.....	71,831
Cheyenne	1,646	.....	1,646
Clear Creek	6,880	13,440	20,320
Conejos	188,647	.....	188,647
Crowley	960	7,040	8,000
Custer	27,960	.....	27,960
Delta	189,132	55,560	244,692
Dolores	38,563	50,542	89,105
Douglas	2,120	.....	2,120
Eagle	45,242	205,157	250,399
Elbert	800	.....	800
El Paso	3,800	1,320	5,120
Fremont	360,081	.....	360,081
Garfield	764,688	191,088	955,776
Gilpin	7,680	3,840	11,520
Grand	110,350	13,860	124,210
Gunnison	465,500	96,880	562,380
Hinsdale	104,280	11,200	115,480
Huerfano	69,719	3,840	73,559
Jackson	239,030	.....	239,030
Jefferson	9,380	.....	9,380
Kiowa	3,270	680	3,950
Kit Carson	4,892	.....	4,892
Lake	8,382	.....	8,382
La Plata	93,492	2,200	95,692
Larimer	47,020	.....	47,020
Las Animas	195,216	29,440	224,656
Lincoln	4,497	720	5,217
Logan	479	4,320	4,799
Mesa	722,435	235,020	957,455
Moffat	1,410,238	318,625	1,728,863
Montezuma	49,434	12,940	62,374
Montrose	472,718	179,360	652,078
Morgan	2,020	159	2,179
Otero	26,730	8,360	35,090
Ouray	27,040	.....	27,040
Park	247,341	10,844	258,185
Phillips	561	.....	561
Pitkin	28,606	24,300	52,906
Prowers	14,828	.....	14,828
Pueblo	1,900	.....	1,900
Rio Blanco	1,169,054	176,906	1,345,960
Rio Grande	104,018	.....	104,018
Routt	117,009	79,880	196,889
Saguache	444,480	.....	444,480
San Miguel	250,502	73,100	323,602
Sedgwick	280	.....	280
Summit	5,385	4,630	10,015
Teller	32,597	280	32,877
Washington	4,442	.....	4,442
Weld	2,259	10,234	12,493
Yuma	3,628	889	4,517
Total	8,441,461	1,830,494	10,271,955

It is the purpose of this brief review to call attention to a few facts connected with the character and distribution of his land, for the information of those who are making a study of its possible use for soldier settlements.

Nearly one-third of the available homestead land in Colorado, 3,075,823 acres, lies in two northwestern Colorado counties, Moffat and Rio Blanco. It is classed by the authorities of the Glenwood Springs land district, in which it is found, as farming, grazing and mineral land, with no information given as to what parts belong in each of the three classifications. It is from 10 to 100 miles from any railroad. Much of it is good farming land, but a very considerable part of it is apparently useful only for grazing purposes or because of the coal or other minerals it may contain. The rainfall here varies from 12 to 17 inches, and in some districts farming will not be profitable without irrigation. There is a very considerable amount of water available in this section for irrigation, but the government has never announced definite plans for reclamation of government land here.

Somewhat more than one-third of the homestead land in Colorado, approximately 3,500,000 acres, lies at an elevation of 7,000 feet or more. Some of this is in the state's mountain park districts and is primarily useful for stock-raising purposes. Such land is found in Rio Grande, Saguache, Conejos, Grand, Jackson, Park and Gunnison counties. Small areas of homestead land in each of these counties are suitable for restricted agricultural operations. In other counties having homestead land lying at high elevations the surface is principally rugged or broken, adaptable only for grazing purposes, though there is some fine level land along the small mountain streams. Such conditions prevail in Pitkin, Eagle, Hinsdale, Summit, Clear Creek, Gilpin and Teller counties and in parts of Archuleta, Chaffee, Dolores, Delta, Garfield, La Plata, Mesa, Montrose, Ouray and San Miguel counties.

About 530,000 acres of homestead land is to be found in the twenty-five counties comprising what is generally spoken of as eastern Colorado, which includes the Arkansas and South Platte basins and the great non-irrigated plains east of the range. Perhaps not to exceed twenty-five per cent. of this land is suitable for farming, and it is distributed over the eastern two-fifths of the state in such small parcels as to be absolutely useless for the colonization of soldiers.

The remainder of the available homestead land in Colorado, somewhat less than 3,000,000 acres, is widely scattered over the western part of the state. A considerable part of it is good farming area, but most of it lies at considerable distance from railroads. The rainfall on some sections is not sufficient to produce good crops without irrigation and no definite plans have been announced for its reclamation by the government.

Grain Land in the Valley and Rich Pasture in the Hills—a Stockman's Paradise



How the State Can Aid New Farmers

By the Colorado Department of Immigration

REGARDLESS of what Colorado may do to aid in the meritorious project of furnishing farm homes for returning soldiers there are many things it should do for all new farmers coming to the state and for many of those already here, if this state is to keep abreast of the procession of agricultural development.

Few states in the Union have a wider variety of soils than Colorado, yet there is perhaps no state that has available soil surveys for a smaller percentage of its area than this. Nobody in the state is prepared to give the prospective settler authentic information regarding the variety and usefulness of the soils in any considerable agricultural district, though knowledge of this kind is in a measure necessary to the best kind of agricultural success today.

The U. S. Bureau of Soils has prepared detailed soil surveys of a few irrigated districts in Colorado, the aggregate of the area covered being not to exceed 2,000,000 acres. They are all in irrigated districts, where long experience has given settlers practically all the information they require about the character and distribution of soils. The great unirrigated districts, where general knowledge of soil characteristics is very necessary in guiding the work of new farmers, there is no such information available. There is little authentic soil information for the large amount of land in the state which may eventually be irrigated, but which is not yet supplied with water.

In many of the states the state government co-operates with the U. S. Bureau of Soils in preparing such surveys. Usually the agricultural college takes the information these surveys develop and puts it into shape to be utilized by the farmer. Wisconsin is such a state, and scarcely any new

colony is established there until a soil survey is completed. The federal government, with an immense amount of work on its hands along the line of agricultural development in the past few years, has been unable to do much on soil surveys, except where the states furnished aid and thus made the results broader and more beneficial.

The state geological survey has collected many data regarding the distribution of underground water available for domestic purposes in most sections of Colorado, but for various reasons has been unable to complete its inquiry or to publish the results of this work. Such a survey would undoubtedly prove of great assistance to farmers in the location of domestic wells, and save them untold expense through advising them what localities are most certain to show no underground waters at reasonable depths. A survey of this nature would be of value in almost every section of Colorado.

Many experienced authorities have advocated a sort of state control over and protection for the real estate business through a system of state licenses. Some states have adopted such a system. From time to time it has been advocated in Colorado by some of the best real estate men and firms in the state. It might prove an aid to immigration through giving the state more authority to protect the prospective settler against the misrepresentations practiced by unreliable land agents, and such are to be found in Colorado, as well as in all other states. If the state exercises supervision over immigration it appears logical that it should provide for some sort of co-operation through law with private immigration companies and land agents who

(Continued on page 28.)

Road Work and Road Builders the State Over

His Excellency, General Emiliaro Chamorro, president of the Republic of Nicaragua, has asked for a copy of the road laws of Colorado together with issues of the Colorado Highways Bulletin. The request was transmitted to the state highway department by Dr. B. L. Jefferson, American minister to Nicaragua, who was in Denver recently.

The Nicaraguan executive is actively interested in good roads work in his own country, and is seeking full information regarding the methods of procedure.

Similar requests for information in re road laws have been received from Italy and Russia by the department.

Superintendent Froelich, of Lincoln County, was in Denver recently to discuss the county budget for next year for road improvements and bridge work. He reports that county and state have improved the road north from Limon toward Brush. The highway is now graded with good bridges along it.

Engineer Corley, of the U. S. Office of Public Roads, who was stricken with influenza while working on the Durango-Silverton project, died a short time after Engineer Kingsley succumbed to the disease.

The Road Maker of Chicago published articles by State Highway Engineer James E. Maloney and S. E. Norton, Highways Transport chairman, in the November issue. In addition liberal space was given to Colorado road projects.

The State Highway Department has mailed photographs to the American City for use as cover pages in that magazine. In addition photographs have been furnished to Field and Farm, Western Farm Life, the Metropolitan Magazine of Denver, The Commercial, and other publications. Forty photographs of the motor truck parade held in Denver during Highways Transport week have also been sent out by the Highways Transport Committee to all of the leading motor trade publications of the United States, most of whom had stated in advance that they would be glad to use these pictures.

Assistant Highway Engineer James Bertholf was in Denver last month for a brief time, looking over office plans for future road work on the Western slope. Mr. Bertholf has now returned to Grand Junction, where he is making plans for an active season in 1919.

Finlay MacFarland, Cass E. Herrington, Warwick Downing, Frank L. Woodward and S. E. Norton will all be in Washington shortly, where they will interview members of Colorado's congressional delegation with a view to obtaining Federal aid for emergency work on Colorado highways during the coming year.

State Commissioner T. J. Ehrhart has sent out an open letter to all western highway department chiefs calling their attention to the need of immediate funds for road work in order to take care of the demands of heavy traffic, and also to provide employment for returning soldiers. He suggests that an appropriation of \$100,000,000 be made by Congress as an emergency measure, the funds to be distributed among the States of the Union on the same basis as those of the Federal Aid Act, road bonds to be issued at 4½ and to be absorbed by the states in which the work is done.

As the Bulletin goes to press, the time intervening has not been long enough to bring in replies, save from the commissioners of Nebraska and South Dakota, both of whom have given the plan their hearty endorsement.

A. C. Batchelder, executive chairman of the A. A. A., has requested the state highway department to furnish the American Motorist with photographs and articles on roads in Colorado,

asking particularly for the Devil's Wing, which was published in the November issue.

Cris Wallrich and A. E. Headlee, Alamosa County commissioners, were in Denver recently. Mr. Wallrich reports grading and graveling on Spanish Trails highway in eastern end of county, general improvement out of Monte Vista, grading and graveling on the Conejos road and similar work on that north to Hooper.

Work next year will include improvement and the replacement of several wooden bridges with substantial concrete structures.

R. P. Coulter, Garfield commissioner, from New Castle, made a visit to the State Highway offices in regard to work on the Glenwood Canyon project now being done by a convict crew. It is the hope of the commissioners in this county that they will be able to push through construction on this road next spring.

Assistant Engineer Randall has gone to Georgetown to make a location for the proposed road improvement from Georgetown to Silver Plume. This highway is badly needed and it is hoped that work can be undertaken in the spring.

George Gammon, a member of the bridge building force of Douglas County, died recently from influenza.

Assistant Engineer Allred is making a survey and investigation of proposed road improvements in Kiowa and Cheyenne Counties.

Legislative Aid for Settlers

(Continued from page 27.)

are in the immigration business. Such a measure would be a protection to the reliable real estate dealer, who often has to suffer in loss of business and sometimes in his reputation because of the misdeeds of the few unreliable men found in this business, as in all other lines of business.

The county agricultural agent has been one of the most important factors in the successful development of agriculture in many of the districts in Colorado where a few years ago it was openly proclaimed even by the most enthusiastic Colorado booster that farming could never be a success. The county agent has given the individual farmer such aid in meeting his problems as he has never before been able to obtain from anybody. He brings scientific aid and advice right home to the farmer and his wife, and shows them how to make use of it.

But fewer than half the counties in the state have county agents, though more than two-thirds of them need them. The federal government, under agricultural extension act, is ready to do its part in putting county agents in every county in Colorado where farming in any of its branches is followed. This act provides for the co-operation of federal, state and county authorities. While the county agent system was not developed under this act, it has been greatly improved and extended by reason of it, and certainly Colorado is as much in need of the benefits it provides as any state in the Union.

The Blue Lodge of Colorado Road Builders

THOSE who have followed The Bulletin in its course have probably noticed an item now and then relating to the question of good roads. In fact, if the reader gives this publication more than a passing scrutiny, it is not improbable that he will find that good roads are more or less of a hobby with The Bulletin and that, taking it on the whole, there will be quite a few pages on the subject in the magazine during the course of, say, a year or so.



E. McLearn

But if the careful reader hereinbefore mentioned really desires to hear something more upon the subject, then he is respectfully referred to E. McLearn of Rifle, Colorado,

county commissioner for Garfield County from 1913 to 1916, and before and since a student and a worker on good roads.

"I do not believe that there is anything that is more beneficial to the State of Colorado than good roads," says Mr. McLearn, and continuing, "There is not enough attention given to this subject by our taxpayers and our state legislators and other state officials. They do not give the State Highway Commission the support they should receive. If every one would put his shoulder to the wheel we would soon have good roads. When they do we will have the most prosperous state in the Union. Good roads mean more to Colorado than any other state in the Union."

Therein is contained Mr. McLearn's platform, one which he has lived up to strictly, as may be evidenced by these facts, gleaned from a busy four years on the roads in Garfield County:

- Rebuilt 12 miles between Glenwood and New Castle.
- 5 miles between Glenwood and Carbondale.
- 6 miles between New Castle and Rifle.
- 20 miles between Rifle and Meeker.
- 3 miles between Rifle and Grand Valley.
- 2 miles between Grand Valley and county line.
- 6 miles in Glenwood Canyon.

Most of this work was done on heavy grades that were frequently rated as impassable by critics before the feat of opening them had been accomplished. On the canyon roads through rocky, narrow turns, convict labor was employed, while free labor was made use of on the other highways.

But "good roads mean more to Colorado than any other state," as Mr. McLearn has said, and so in company with the other good roads men of his district he is still pounding away at the subject, doing his part to secure funds for the development of all of the Western Slope and all of Colorado.

WHEN E. E. Sommers was appointed member of the State Highway Commission by Governor Julius C. Gunter last month, he reached the climacteric point of a career which has been remarkable for the number of positions held minus the usual stipend.

A complete list of the appointments which have fallen to his lot is not possible in The Bulletin, since space is necessarily limited, but as evidence of the part which he has played in road-building in Colorado, a few of the "high lights" may be touched upon.



E. E. Sommers

When the famous road convention was held in Pueblo in 1912, it was Mr. Sommers who led the rooters for roads in northern Colorado and who was afterward elected president of the Greater Colorado Roads Association. Later, when the two organizations consolidated, he was chosen head of them and served for two years.

He was president of the Denver Motor Club in 1912 and 1913, is at present serving on the Board of Governors of that body and also is president of the Colorado State Automobile Association, a position he has held for four years.

On the side he is vice-president of the Omaha-Lincoln-Denver Association and chairman of the Good Roads Committee of the Mountain Parks Commission of Denver.

In between times he is manager of the Great Western Oil Company, but as this is only the way in which he makes his money, the position may be said to be second in importance.

Mr. Sommers was appointed a member of the State Highway Commission to succeed Lafayette Hughes, resigned. He will represent the First Highway District, which includes all of northeastern Colorado from the front range to the state line and from a point south of Denver to Wyoming.

However, Mr. Sommers' attitude toward roads is broader than that of district boundaries.

Any road is a good road in Colorado, is the way he expresses it, and further, "We need good roads throughout the state, to bring tourists in and to widen our marketing areas."

Mr. Sommers first became interested in road-building when he purchased his first automobile several years ago and since that time his name has been prominently connected with every step which has been taken in the promotion of roads throughout the state.

Highway News and Notes on Work in Field

Five miles more of hard-surfaced road on the Denver to Brighton highway, more graveling for the Denver to Limon road, surfacing of the last stretch of the Boulevard F road, and improvement of numerous county roads together with a good deal of bridge work, are the plans worked out for 1919 by the commissioners of Adams county.

Working with H. C. Flanders, Commissioner H. G. Tiffany has been making a survey of needed improvements and the two men are hopeful of decided improvements throughout their districts. Mr. Webster, the third commissioner, retires this year and plans for his district are still somewhat indefinite, pending the election of his successor, but the funds will be pretty well distributed throughout the county.

Talking about the work, all of which is of direct importance to Denver since three of the main gateways into this city pass through Adams, Mr. Tiffany said:

"We have some 1,000 miles of road in our county. Last year, with a two-mill levy, we had a fund of \$51,000 or about \$51 per year. As every road man will realize, this sum is inadequate to our needs, particularly when it is remembered that we have had hard-surfacing work to do which runs into a cost of about \$22,000 per mile. Still the roads must be improved.

"We hope to have about five miles of concrete added to the Brighton highway through assistance given us by the state and the U. S. Federal Aid Act.

"In addition we must bring the Denver-Limon and Boulevard F highways to standard and should have a more adequate maintenance fee for each of these roads, as the heavy truck traffic on these highways has grown to enormous proportions and is rapidly increasing month by month.

"Further than the work on the main highways, we must replace the bridge across Clear Creek on the old river road and must take care of two old canal bridges northeast of Henderson.

"Sufficient maintenance must also be done to keep the county roads passable and with these needs confronting us we will have a busy season ahead."

Contractor Dick McQueary was in Denver recently. He reported that eighty per cent. of his contract on the Western slope of the Fall River pass road has been completed. Travel can reach the top of the pass although the highway is not open for traffic, as there remain several stretches between Grand Lake and McQueary's work yet to be completed. Work has been discontinued on this project because of weather conditions.

The Morrison road improvement has been completed and the gang has been transferred to the road out of Denver toward Aurora and the Recuperation Camp, where a heavy gravel surface is being laid to take care of the rapid increase in travel to that point.

Some of the important centers of the state have neglected to send in the traffic census reports for travel on highways in Colorado during the month of August. These reports are of the utmost importance in the preparatory plans of the state highway department for the season of 1919 and should be returned to the department without delay.

The convict crew at work on the South St. Vrain project between Lyons and Allen's park is making progress. This job will be under way throughout the winter, weather permitting, and it is hoped that improvement will be far enough along by spring to permit of travel without discomfort on this highway.

A survey of the Ute Pass road between Iron Springs and Green Mountain Falls has been made by the commissioners of El Paso County and representatives from the state highway department, with a view to the elimination of dangerous railroad crossings at Cascade and below Green Mountain Falls. Condemnation proceedings may be necessary in order to straighten out the road, but these will be undertaken by the commissioners. The highway will be for the full distance along the east side of the creek and the improvements begin in the early spring, if the highway council permits. The work is needed to eliminate the danger element and will serve to greatly improve the road.

The bridge at Salida across the Arkansas River has been finished. The structure is built of reinforced concrete.

Surveys and plans have been practically completed for Federal Aid Projects No. 2 and No. 7, the first between Pueblo and the state line, the second between Norwood and Naturita in the Paradox Valley. As soon as approval of the national government is secured these projects will be advertised and let.

The Brighton concrete roadway is finished and open for traffic. The bridge over Sand Creek has been repaired with a new floor, which has been coated with a bituminous surface, this method having been found to be satisfactory in lengthening the life of the timber floor.

The shoulders for the road are practically complete and only a little trimming remains to be done.

The stretch of road running from Sloss to Ruedi, on the Glenwood Springs-Aspen highway, has been surveyed for improvement by the government. The stretch is about six miles long and forms a sector of the main road. The road will be taken from its present location and will be placed on the opposite side of the Frying Pan River with a view to eliminating washouts and snowslides which now make the highway dangerous in winter time.

Preliminary investigations extending over a stretch of about twenty-six miles on the same highway have also been completed.

Abutments have been finished for the bridge at Castle Rock and the contractors will begin placing the floor this week. The structure is on the main north and south highway.

The U. S. Office of Public Roads has completed a preliminary investigation looking forward to the improvement of the Beulah-Rye road west of Pueblo.

P. H. Everitt has completed reconnaissance surveys for the Crested Butte-Somerset forestry project. He has also completed a survey of the Hardscrabble canyon road running from Florence to Westcliffe.

The Crested Butte highway covers a distance of about thirty-eight miles and the project when begun will consist of opening up an entirely new road between these points. The highway will run along side hills and through Anthracite and the Big Muddy Valleys. It will serve as an inlet into the district, which contains lands sufficient to serve the needs of several farmers. At the present time the only communication between these towns is had by traveling in a roundabout way through Gunnison and Delta.

Future plans for the Hardscrabble canyon road include a general improvement of the highway which will serve to bring it to standard.

COLORADO HIGHWAY DEPARTMENT

STATE HIGHWAY COMMISSION

L. BOYD WALDBRIDGE, Chairman, District No. 3, Meeker.
LEONARD E. CURTIS, Vice-Chairman, District No. 2, Colorado Springs.

FRED J. RADFORD, District No. 3, Trinidad.
FREDERICK GOBLE, District No. 4, Silverton.
ELMER E. SOMERS, District No. 1, Denver.

T. J. EHRHART, Commissioner.

J. E. MALONEY, Chief Engineer.

COUNTY COMMISSIONERS AND DENVER ROAD OFFICIALS

ADAMS

R. G. Webster, Broomfield.
H. G. Tiffany, Stockyards Station.
Harry C. Flanders, Bennett.

ALAMOSA

A. E. Headlee, Hooper.
Cris Wallrich, Alamosa.
George E. Lake, Alamosa.

ARAPAHOE

Theodore Taylor, Englewood.
D. J. Crockett, Littleton.
Claude Cartwright, Aurora, R. F. D.

ARCHULETA

Fred Catchpole, Pagosa Springs.
Thos. S. Reavis, Pagosa Springs.
R. L. Ewell, Chromo.

BACA

C. A. Wiley, Richards.
James A. Stinson, Springfield.
Onda Young, Two Buttes.

BENT

Levi Dumbauld, Las Animas.
B. T. McClave, McClave.
D. E. Heizer, Las Animas.

BOULDER

S. A. Greenwood, Boulder.
H. E. Miller, Longmont.
Burns Will, Boulder.

CHAFFEE

O. S. Mason, Buena Vista.
J. I. Glenn, Salida.
W. L. Philbin, Salida.

CHEYENNE

Walter Ramsey, Kit Carson.
A. I. Johnson, Wild Horse.
J. W. Shy, Cheyenne Wells.

CLEAR CREEK

John W. Green, Silver Plume.
T. W. Cunningham, Georgetown.
F. A. Miller, Idaho Springs.

COSTILLA

J. M. Pacheco, San Pablo.
T. Manchego, Garcia.
W. R. Morris, Ft. Garland.

CROWLEY

Wm. Broadhurst, Ordway.
Frank McNary, Sugar City.
John H. Cowden, Ordway.

CONEJOS

W. F. McClure, Antonito.
Frank Russell, La Jara.
H. L. Sellers, Manassa.

CUSTER

Harry Kettle, Westcliffe.
Jacob Beck, Westcliffe.
Chas. A. Barton, Silver Cliff.

DELTA

W. A. Shepherd, Delta.
Thomas J. Harshman, Cory.
Charles T. Rule, Paonia.

DENVER

Jas. A. Burnett, Mgr. Parks and Impts.
Fred Steinhauer, Supt. Parks.
F. J. Altwater, Highway Commissioner.

DOLORES

G. L. Garren, Rico.
Charles Engle, Rico.
R. H. Bradfield, Lewis, Colo.

DOUGLAS

S. H. Stream, Sedalia.
G. F. B. Hood, Parker.
Jas. P. McInroy, Larkspur.

EAGLE

M. A. Walsh, Red Cliff.
T. J. Dice, Eagle.
Andrew Gleason, Gypsum.

ELBERT

C. E. Shaver, Fondis.
Fred L. Albin, Kiowa.
John M. Wood, Kuhn's Crossing.

EL PASO

J. W. Potter, Colorado Springs.
Harry A. Scholton, Colorado Springs.
B. A. Banta, Colorado Springs.

FREMONT

J. V. McCandless, Florence.
G. V. Hodgins, Canon City.
Jas. Belknap, Hillside.

GARFIELD

Silas L. Meadows, Glenwood Springs.
R. P. Coulter, New Castle.
George Newton, DeBeque.

GILPIN

Joseph Borzago, Black Hawk.
Neil McKay, Central City.
R. I. Hughes, Russell Gulch.

GRAND COUNTY

Simon Olson, Parshall.
Ed. Becker, Troublesome.
J. B. Stevens, Frazer.

GUNNISON

W. H. Whalen, Crested Butte.
Geo. L. Miller, Gunnison.
C. L. McDonald, Doyleville.

HINSDALE

O. D. Zeigler, Lake City.
E. W. Wiley, Lake City.
E. W. Soderholm, Lake City.

HUERFANO

Walter Hamilton, La Veta.
J. T. Trujillo, Red Wing.
Robt. Young, Walsenburg.

JACKSON

T. John Payne, Northgate.
W. G. Mellen, Coalmont.
Chas. L. P. Winsom, Walden.

JEFFERSON

R. L. Downs, Evergreen.
J. R. Cruse, Mt. Morrison.
Gus. A. Johnson, Golden, R. F. D.

KIOWA

A. S. Baldwin, Chivington.
Wirt Bailey, Towner.
Ed. Houston, Arlington.

KIT CARSON

James Dunn, Stratton.
A. L. Anderson, Burlington.
J. O. Hendricks, Seibert.

LAKE

B. H. Martin, Leadville.
Dan Colahan, Leadville.
Geo. Bennett, Leadville.

LA PLATA

E. F. McCartney, Animas City.
Geo. Olbert, Oxford.
Jacob Fritz, Durango.

LARIMER

J. M. Graham, Loveland.
Harris Akin, Fort Collins.
C. M. Garrett, Fort Collins.

LAS ANIMAS

Frank Patterson, Alamosa.
J. D. Cordova, Guñare.
Robt. C. Scott, Segundo.

LINCOLN

Alex. McCallum, Arriba.
W. M. Smith, Rush.
Ed. Reickenberg, Hugo.

LOGAN

C. M. Morton, Sterling.
C. M. Morris, Fleming.
W. E. Henning, Peetz.

MESA

C. Bower, Palisade.
Geo. W. Masters, Mesa.
Gover Rice, Grand Junction, R. F. D.

MINERAL

John L. Peters, Creede.
James Seward, Creede.
A. M. Collins, Creede.

MOFFAT

Thos. A. Forkner, Craig.
R. S. Hamilton, Hamilton.
R. B. Overholt, Maybell.

MONTEZUMA

R. B. Dunham, Dolores.
C. B. Kelly, Mancos.
W. I. Myler, Dolores.

MONTROSE

John W. Lamb, Montrose, R. F. D. No. 2.
Howard P. Steel, Montrose, R. F. D. No. 4.
Cary S. Heath, Montrose.

MORGAN

Jas. Hurley, Fort Morgan.
J. K. Samples, Brush.
J. H. Osborne, Wiggins.

OTERO

W. Frank Green, Rocky Ford.
J. N. Johnston, Manzanola.
Geo. Barr, La Junta.

OURAY

J. H. Doran, Ouray.
W. S. Rose, Ridgway.
Geo. R. Croft, Ouray.

PARK

J. S. Singleton, Shawnee.
J. F. Rhodes, Fairplay.
E. S. Clark, Florissant.

PHILLIPS

Herman Poe, Holyoke.
Albin Johnson, Haxtun.
Lyman Foster, Holyoke.

PITKIN

B. M. Strawbridge, Aspen.
R. R. Bullock, Aspen.
J. J. Gerbaz, Aspen.

PROWERS

Fred Williams, Wiley.
S. J. Higbee, Carlton.
A. P. Kuckey, Holly.

PUEBLO

Geo. Herrington, Pueblo.
J. M. Sare, Pueblo.
J. W. Thomson, Pueblo.

RIO BLANCO

F. W. Miller, Meeker.
J. A. Bills, Meeker.
H. S. Harp, Meeker.

RIO GRANDE

Aug. J. Weiss, Del Norte.
W. W. Wright, Monte Vista.
G. W. Gates, Monte Vista.

ROUTT

Wm. Ellis, Steamboat Springs.
Wm. Scheer, Pak Creek.
Henry J. Summers, Hayden.

SAGUACHE

Geo. Woodward, Saguache.
A. V. Shippey, Villa Grove.
Adam Deitrich, Center.

SAN JUAN

Gail Munyon, Silverton.
Edward Meyer, Silverton.
J. Ernest Shaw, Silverton.

SAN MIGUEL

T. B. McMahon, Telluride.
Geo. G. Wagner, Telluride.
J. R. Galloway, Norwood.

SEDGWICK

Edward Fischer, Julesburg.
Frank Nagel, Julesburg.
J. G. Mowbray, Red Lion.

SUMMIT

A. Lindstrom, Dillon.
W. H. Hampton, Frawley.
Eli Fletcher, Breckenridge.

TELLER

Tom Foster, Woodland Park.
H. J. Gehm, Cripple Creek.
I. N. Riley, Victor.

WASHINGTON

Homer Evans, Akron.
R. M. Buckmaster, Abbott.
E. A. Lewis, Burdette.

WELD

W. C. Levis, Greeley.
T. Elmer Rowe, Greeley.
J. W. Birkle, Platteville.

YUMA

Harry F. Strangways, Wray.
H. W. Jackson, Yuma.
Alex. Shaw, Kirk.

