DROUGHT RELIEF

By

Flood Control

A Study of the
Missouri River
Diversion Project

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October 2, 1933

Missouri River Diversion Association
Devils Lake, - - - North Dakota

Foreword

THE hope of the Dakotas and the fate of flood-menaced thousands on the lower Mississippi river are bound up in what has come to be known as the Missouri River Diversion Project.

The story of that project is here told in its entirety for the first time and is submitted to all who may be interested in a proposal for modern, scientific attack upon two of the greatest problems faced by the nation.

Engineering language has been avoided. But the best engineering thought in the country has gone into the plans here outlined and they have been declared feasible and practical in every way.

There is no hope for permanent flood control on the lower Mississippi in any project that leaves out of consideration such a dam as is proposed in the Missouri south of Garrison.

There is no hope for the restoration of the surface and ground waters of the Dakotas from any other source than the Missouri. **These states must have water at any cost.**

Thre are few projects in the nation that will employ more men immediately or show a greater return to the whole people for the time and effort expended.

For these reasons this project is respectfully recommended to the federal public works administration.

SIVERT M. THOMPSON, President,
Missouri River Diversion Association,
Devils Lake, N. Dak.

A $65,000,000 Project

Expected To Be Worth $50,000 a Year

Economic value of the Missouri River Diversion project was estimated recently at $50,000,000 a year by proponents of the plan to divert and control the floodwaters of the upper Missouri near Garrison, N. D., storing them behind a great dam for 150 miles up the Missouri and in the great water basins of Devils Lake and the Sheyenne and James rivers.

The chief benefits are expected for agricultural drought relief in North and South Dakota; for electric power and the improvement of city sewage disposal and water supply; for flood control and prevention of damage, loss of life and unnecessary maintenance work on the lower Mississippi and for improving navigation and simplifying control on the Missouri river

Cost of the entire work is estimated at $65,000,000, some 75 or 80 per cent of which is expected to go for labor alone, since the material to be used is largely the native gumbo.

Benefits predicted above do not include the expenditure of $65,000,000 in the trade territory of Bismarck, Mandan and Minot or the value of employment of 25,000 men for some four years as a relief measure for the unemployed.

The proposal calls for a dam two miles wide, a quarter of a mile thick at the base and 140 feet high, at the big bend in the Missouri just south of Garrison. This is expected to create a lake in the river basin extending as far as Williston. From a creek flowing north out of the big bend, the water will be conducted by open canals to a tunnel in the Coteau du Missouri, some 19 miles thru the hills, and thence by canal to the head waters of the Sheyenne and James rivers southwest of Harvey.

The dam will be capable of storing 10 million acre feet of water which is about three quarters of the annual flow. The diversion tunnel will be capable of handling about 1 per cent of this water, which will be taken at the flood period. The dam will thus serve to check floods and to increase the flow of the river at low water, thus stabilizing the water stages of the Missouri below the dam for navigation and other uses.

A diversion dam will be located at or near the source of both the James and the Sheyenne at which water gates will control the amount of water diverted to each. West of Lallie further works will be provided to force part of the impound-

ed water into Devils Lake and a storage dam is to be constructed in the James river valley north of Jamestown.

The project will be capable of restoring Devils Lake to its 1883 level, although it has not yet been decided whether so high a level is necessary, since the 1883 mark is some 25 feet above the present lake level.

These works will give positive control of the Missouri at the dam where the flow of water in flood times is estimated at 7 percent of that pouring from the mouth of the Mississippi. With Muscle Shoals and other projects planned it will effectively control Mississippi floods.

It has been estimated that more than 80,000 horsepower will be available, sufficient to furnish electric power to both North and South Dakota.

Incidental benefits such as diversification of farming, increased precipitation, restoration of game and fish in the lake region, saving in well drilling for farmers, improvement of water supply for cities and towns, elimination of sewage and and water pollution and the restoration of recreation grounds in North Dakota are included with the electric power possibilities as one fourth of the value of the project.

Navigation benefits include savings to the federal government for channel work and with this are figured the savings in erosion control along the Missouri which now shifts its channel rapidly from year to year destroying great areas of farm land and carrying valuable soil out of the territory.

Southern flood control benefits include savings in government expenditures for dikes and levees and for flood relief and property damage along the river. Only nominal estimates have been included for the recurring loss of life, which cannot be figured in dollars and cents.

In the drought areas, the estimates are based on possible increase in the value of farm lands affected, about twenty million acres, but it is pointed out that this estimate may run very much higher if present conditions continue making it increasingly impossible for farmers to remain on their lands. At the nominal value of $30 an acre, these lands would be worth six hundred million dollars or ten times the cost of the work intended to save them from aridity. Large areas of the Dakotas must have water at any cost, it is said, and no possible estimate can be made of the probable damage if the water is not available.

THE STORY OF THE PROJECT

The fate of the Missouri River Diversion Project rests in the hands of the federal government at Washington. It is one of the first eight or ten proposals being considered by the Roosevelt administration for the relief of unemployment.

That it commends itself for this purpose is already evident from the personal interest of the President in the subject. When Franklin Roosevelt sent one of his men into this district before the nomination at Chicago, that man came instructed to find out something about Missouri river diversion.

For the information of the President and for the guidance of those in this vicinity whose ultimate hope of a continued livelihood here is bound up in this undertaking, it is proposed to tell the story of the diversion project from its earliest inception.

Since it is hailed today as evidence of the proverbial long-sighted vision of North Dakota men, something will be said about those men and how the vision unfolded before them. For it must be admitted that it came as no mysterious revelation but was discerned a little at a time, first through the obscuring lense of personal interest and then through the telescope of the public weal.

A thousand men, no doubt knew in the historic year of 1889 that the level of water in North Dakota's Devils Lake or Spirit Lake as the Indians had called it had been gradually falling since the opening of navagation upon it in 1883.

Others perhaps took heed when suddenly, six years after the steamer Minnie H. had steamed proudly into Creel's Bay to greet with blaring whistle a few hundred feet away James J. Hill's first Great Northern train into the district, the notable steamboat found it impossible to reach the old landing and docked at the narrows a mile and a half away.

But of these, the only man of vision stood upon the deck of the vessel and gazed ruefully at the water gauge which told the story of vanishing waters.

He was Captain E. E. Heerman, who had sold his steamboat holdings on the Mississippi river and had invested $35,000 in the parts of the great vessel which he trucked overland from the end of steel.

That long sightedness which had caused him to penetrate the wilderness, dragging a steamboat overland, when passenger traffic was driven from the Mississippi by advancing railroad construction, had failed to warn him that the lake would hardly survive his own lifetime.

Today the bones of the Minnie H lie bleaching on what was once the alkali shore of Devils Lake but the lake itself has long deserted the ancient wreck.

But Captain Heerman's vision

was long enough to tell him that unless new streams could be poured into the basin of Devils Lake, the water would continue to recede. He watched that falling water line for thirty years and saw it fall lower each year.

And during most of that time he sought a source for the replenishing of what was still a noble body of water. Spurred by his own vital interests and the heavy investments he had made in the establishment of three great steamboats on the lake, he was presently considering two projects, one the diversion of the Mouse river and the other a channel from the headwaters of the Sheyenne.

It was his own fortune which was at stake but he was presently convinced that these projects were too heavy for him and could not be justified by the amount of business which his lines could do.

For many years the water continued to vanish from Devils Lake and little was heard of the impossible project of diverting the Mouse or the Sheyenne.

Capt. Heerman's dream died with him, or so it was believed, but the story had been told among the oldsters of his day and in 1921 it was reborn in the heart of a youth who had often heard the old captain talk with his cronies.

Fresh from the law school of the University of Minnesota, Sivert Thompson stood on the steps of his old home and looked out where once the noble body of water had washed upon the shore in front of the farm home.

Vision is sometimes keener in younger men. It takes them years to learn the word impossible and to focus their gaze upon nearer things.

As young Sivert Thompson gazed out over the old lake bed, he remembered the abandoned project of bringing water from the Mouse river and he knew that the Sheynne itself was no longer the lusty stream it once had been.

It happened that he know his own state and he knew that there was but one unfailing source of water in that state and that was the turbid Missouri cutting a corner off North Dakota and swollen twice each spring by the melting snows of the plains and mountains in which it rises.

Seizing a map of the district, he consulted it briefly and traced with his finger a line from the headwaters of the failing Sheyenne to the Missouri.

Thereafter the ancient dream of Captain Heerman was reborn in the mind of the young attorney. He had not at that time ever heard the phrase "water conservation." He had no thought then of developing a new agricultural economy in the great northwest.

He was actuated at first, probably, by the pangs of sentiment, by a vague regret at the loss of the beauty about his farm home. He remembered the paradise of game and fish that had once existed there and was moved mostly to restore these lights of his younger youth.

Among his own associates, he finally took couarge to mention the new dream of a restored Devils Lake and drew a hoarse laugh for his pains.

Yet one by one he drew about him men who like himself had fished and hunted in the halcyon days when acres of wild ducks darkened the broader waters, wild geese came honking in like a noisy cloud, when the uplands teemed with prairie chicken and great shoals of fish moved the lake's green waters.

These men were for the most part members of the local Izaak Walton League and four years later, at an outing of this group, there was held a dinner where the old dream floated again in the tobacco smoke of fishermen and hunters.

At this meeting in 1925, the vision found sudden favor. Action was the immediate demand and the organization pledged itself at once to investigation and report.

Thompson had already some of the information required. Some

was found in the notations of Captain Heerman. The rest must come from the topographical surveys and the water geologists of the University of North Dakota.

And still the vision was but dimly seen. Still the new glass of community self interest showed only the outlines of the eventual project. It was still Devils Lake that was to be filled with water let the ponds and swamps fall where they might.

Long-sighted as these men were, there was still, perhaps, little or no conception of what would happen to the rest of the state, to South Dakota, to the flood stricken districts on the southern Mississippi river if Devils Lake could be kept full of water. Certainly there was at that time nothing of the coming urgency of the measure in the minds of these men. There was no sense of the drought menace that hung over the north country of the plains states. There was then no possible realization that the project first attacked by Captain Heerman might affect a nation or that the solution of two great national problems lay in the suggestion that the Missouri river be diverted in part from its natural course.

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FIRST ORGANIZED WORK

SECOND CHAPTER

First organized efforts for the advancement of the Missouri River Diversion project were begun about 1921. In that year, there was held a joint meeting of the Rotary and Kiwanis clubs of Devils Lake at which Sivert Thompson chanced to be the chairman.

Since the young man spoke on the subject of river diversion whenever two or three were gathered together, it was natural that he spoke of it here.

The meeting was held in what is now Devils Lake Town and Country Club. And it was a most appropriate birthplace for the organization for the reason that the building which housed the club and the meetng had once been the clubhouse of the Devils Lake Boat and Yacht club.

The receding waters of the lake had long since left the club and its yachts for the most part high and dry but the building had been dragged across ice and alkali flats to a new location and here the Rotary-Kiwanis meeting was held.

Others of the enthusiasts for the project who joined their voices and who caught a glimpse of the vision at that time in advance of the others were Frank Hyland, afterward candidate for Governor; A. V. Haig, grocer; James Barrett, then secretary of the chamber of commerce at Devils Lake; Joe Kelly; J. N. Roherty of Bismarck; Dean E. F. Chandler of the University of North Dakota engineering department and Prof. Howard E. Simpson, water geologist at the university. Mr. Roherty was one of the first engineers to pronounce for the project and has been called the father of the Diversion Plan.

Sivert Thompson had already been to the state engineering department to discover whether the plan he had in mind was feasible.

"It's feasible, all right," he was told. "It can be done."

"Then why isn't it being done?" the young man wanted to know.

"Because there's nobody out pushing it," was the answer and it was for purposes of organizing the pushing that the meeting in the Town and Country club began chipping in a little money and formed the organization afterward to be known as the Missouri River Diversion Association.

The first move, the association members say, was to make talks in the surrounding towns.

And verily, say the other citizens of the Devils Lake vicinity, they did make talks about it. Those were still the days of country oratory. The radio had not yet come to fill the land with high power entertainment and conversation.

Almost every community in the Dakotas had its community club. Every now and then farmers' picnics would be organized. And whenever a community club met or a picnic was held, there were speakers.

It began to appear after a little while that all these speakers had one subject, Missouri River Diversion.

This was at a time when North Dakota suffered from a sort of

plague of speakers of one sort or another. Many glorious dreams had been dreamed for people of North Dakota and the great Northwest and this seemed to them, perhaps, just another of the grandiose schemes for defeating the forces of nature and creating wealth where hardship had come to exist.

More than that, since the news had come out of Devils Lake concerning this proposal, it was set down by a considerable number as just another local proposition and one that the rest of the state would not be interested in.

But by this time the vision had come a little clearer in the minds of those who were back of the suggestion. They had come to realize that Devils Lake could not be filled up without filling up some other streams and lakes, that these waters would furnish a water supply to various cities and towns that had been having difficulty and that they would do more than restore the game and fish of the immediate neighborhood.

It was about this time that the true importance of the river diversion plan began to be recognized.

And now the wider public began to take an interest. The talks began to create a little stir. This spread as the waves spread from an occasional pebble dropped into a pool. Soon the speakers had visited almost half the cities, towns and villages in the state and some of those who listened began to take them seriously.

In the summer of 1927, the project was carried into South Dakota. The men behind it had come to realize that there was a natural interest there that could be developed and the proposal which had been at first frankly local took on interstate importance.

Sivert Thompson and James Barrett drove down the James river valley and began to talk at the principal towns and villages there.

They pointed out that the interests of the South Dakota people in that valley were largely identical with those in the affected area to the north.

They were well received and the seed was sowed which was to yield a harvest of wide interest on the other side of the South Dakota line.

But it was not with a nebulous proposal of young men who were in search of better watering places and better sport that these men went across the interstate boundary.

Two years earlier the matter had been taken to the North Dakota legislature. Thompson went down to Bismarck and presented a bill asking for an appropriation of $25,000 to make topographical maps of the state.

This was not mere crust on the part of the young man from Devils Lake. He had learned in the course of his studies of the project that the United States Government wanted topographical maps of every state in the union and that they were ready to share the expense.

Though there were yet no maps of the area which had to be studied if the project was to go through, these could be made and the federal government would match dollar for dollar the appropriations of the state legislature.

Probably to his own surprise and somewhat to the surprise of his friends, the bill passed. The legislature voted $25,000 for the making of topographical maps of the state and the federal authorities matched this with $25,000 which provided a fund of $50,000 for the purpose.

This was not enough to map the entire state but it was enough for a start, particularly as the engineers when they came into the territory came to the Diversion association to find out where to begin.

The quadrangles selected were naturally enough, the quadrangles vital to the project of Missouri river diversion.

FLOODS REVEAL NEED

THIRD CHAPTER

Fifty thousand dollars was not enough to complete the topographical maps necessary to the project of Missouri river diversion. To the legislature of North Dakota which had already provided $25,000, matched by the federal government, for this work, the new organization returned and again the legislature appropriated $25,000. Once more the federal government matched this sum and another $50,000 was available for the work.

By the time it was spent and the topographical maps necessary for the project had been completed, South Dakota had evinced its interest in the proposal to divert Missouri river's flood waters into the lake region of North Dakota for the feeding of streams and lakes and coulees and swamps in the drought country.

Hardly had the gospel been carried into South Dakota by the alert young men who went out of Devils Lake in 1927 when there occurred a flood disaster in the South which was destined to give tremendous impetus to the project.

Water suddenly roared out of the tributaries of the Missouri and the Mississippi. A great flood swept toward the gulf. The dikes and levees which had been constructed at great cost to hold such floods in check were insufficient for their purpose and gave way.

Wreck and devastation followed. The flood poured through the breaking levees and destroyed houses, ruined crops, wrecked enterprises and drove the dwellers of the lowlands in screaming terror before the loosed waters.

Death and sickness strove with disaster and want for mastery of the territory.

All this was a long way from North and South Dakota but, while the crews of the engineers and the agents of the Red Cross were rushing to the relief of the flood sufferers, a great flood control conference was being arranged in Chicago by Mayor William Hale Thompson. For the first time in the history of Mississippi river floods, the matter of flood control was made the concern of communities and commonwealths from one end of the great river system to the other.

At this conference, Sivert Thompson was invited to be present and to bring with him others interested in the subject. He saw the opportunity of bringing the Missouri river project to the attention of men in other sections of the country and a delegation of 18 men went from North Dakota to Chicago for the flood control conference.

Engineers and others were members of this group and engineers and water geologists from other states were met there. A study of the proper methods of flood control was begun at this conference and the whole question was gone into.

Experts seized the opportunity here to present their own solution of the problem and for the first

time they obtained general recognition of their proposals.

The usual measures for flood control attack the problem in the territory endangered by floods. Dikes and levees are built along the stream and these rise higher and higher as the silt from the upper river is deposited in the bed of the lower stream. With no cessation of the flow of water, the result is far from successful. The bottom of the river rises higher and higher. The waters continue to pour through and, no matter how high the restraining dikes are built, the time usually comes when there is somewhere a break in the defenses and the flood conditions are worse than before.

There are places along the river, it is said, where the bottom of the stream itself is higher than the surrounding country. And the former localized methods offered no cure whatever for this condition.

But the engineers had attacked the problem in a larger way. They had come to the conclusion that the only permanent solution for the problem was the control of the lesser floods in the tributary streams.

By holding back the waters at their source, by checking the rush of small floods into the greater stream until they could be safely released little by little later on, the levels of the larger stream could be kept constant and the silt would no longer be carried to the lower river in great quantities.

This would halt the gradual lifting of the whole river and make the constant additions to the dikes and levees unnecessary.

The North Dakota men took the floor then. They told what was proposed on the upper Missouri. They pointed out that a great dam was to be flung across the river valley at Garrison, a dam which would back the water 150 miles up the river forming the second largest lake in the territory. They showed that this water would be used to feed the drying lakes and streams of the section, turning the whole Devils Lake basin into a vast reservoir not only for the benefit of the farmers and sportsmen in this section but providing effective flood control on the lower river.

They rushed figures from Bismarck that showed the stage of water at Bismarck during the flood. It was shown that the waters pouring down to the Mississippi there were seven per cent of the greater flood below.

"We can control this seven per-cent," they declared, "with the orks proposed on the upper river."

"That," declared one of the engineers at the conference, "will take care of most of the flood troubles in the South. It is the last surge of water that breaks the levees. One man at a valve handle on such a project can check the rising waters to an appreciable extent below. It will probably be enough to take care of the whole situation. If it isn't other projects of the sort will have to be built on the Ohio, on the Tennessee, on the Platte and other streams pouring into the Missouri and the Mississippi."

"Is there any other way it can be done?" the men from North Dakota wanted to know.

"Not that we know about," declared the engineers.

And so a program of tributary flood control was approved by the conference and the Dakota men returned home with high spirits and a new vision of the vast importance of their project.

Success seemed now to be assured for Missouri river diversion. It seemed impossible that there could be any hitch. The way had been shown both for flood control and the restoration of a great lake region.

The matter was commended to the government. A great engineer was in command at Washington. He had himself viewed the flood conditions on the lower Mississippi and it seemed only a matter of time when the project would be adopted.

DIFFICULTIES OVERCOME

FOURTH CHAPTER

Prospects looked bright in 1928 and 1929 for the Missouri River Diversion Project. The United State Senate, faced with the problem of flood control, had appointed a committee headed by the late Senator Thos. J. Walsh of Montana, to investigate the feasibility of major work in the upper tributaries of the Mississippi to hold back flood waters in times of danger.

This investigation was turned over to the war department and engineers were soon on the ground studying the whole Missouri diversion project. This work was under the direction of Major R. D. Young of Kansas City and he went very thoroughly into the matter.

Public hearings were held at which the economic need for the project was gone into and the hopes of the district rose to a high point.

Then these hopes were suddenly dashed. It was learned that a serious question had been raised. Major Young had been informed that a dam could not be built at the proposed site near Garrison.

"There are no footings for a dam," the word went out. "It can't be built."

Consternation ruled in the ranks of the Missouri River Diversion association. Their whole vision of a combined flood control and water conservation project went glimmering in an instant on the decision of the engineers.

They investigated at once, however. What did the soundings show, they wanted to know. And then, to their very great amazement, it was found that there had been no soundings. The word of those familiar with the district but without the evidence of soundings had been taken as conclusive.

The project was too important to let it go on hearsay evidence. The men behind the movement went to bat again. They declared that the army investigation could not be considered proper engineering work unless these soundings were made.

Congress agreed with this point of view and new hope was born when it appropriated funds for a continuation of the study and for soundings to be made at the proposed dam site.

This hope rose higher yet when it was learned that the then Secretary of War, Patrick J. Hurley was to visit North Dakota and study the proposal on the ground.

In July, 1930, Secretary Hurley arrived by airplane and from the plane viewed the vast acreage of dry lake bed that had once been filled with water and which had gradually been growing dryer and dryer for nearly fifty years.

Mr. Hurley not only inspected this disappearing lake bed but he flew over several others of the hundred of more dry lakes and sloughs dotting the rolling plain

which extends almost to the southern boundry of South Dakota.

He was informed that the anual rainfall in North Dakota is about 18 inches while the annual evaporation in normal times is about 32 inches.

He returned to Washington after a considerable study of the proposal and of the conditions it was intended to remedy and once more the people of the affected territory waited for a report.

In 1931 it was announced that the report was ready and hopes were dashed again for, though it had not yet been printed, it was learned that the report again declared the project unfeasible, that the dam could not be built and that it would not be worth the cost if it were attempted.

Once more consternation ruled. Secretary Hurley was asked to hold up the publication of the report and a delegation was sent to Washington to make a final appeal.

The report was not printed but it stood in the records of the war department and nothing further was done during that administration. With the coming of the political campaign year, 1932, the matter was still in abeyance.

Then came word that Cornelius Vanderbilt would visit North Dakota in the interest of Franklin Roosevelt. This was before the Chicago convention.

Mr. Roosevelt was not yet a presidential nominee although he had for a long time been mentioned for the presidency. Mr. Vanderbilt arived and one of the first instructions he had received, he revealed, had been to look into the Misouri river diversion project.

Information was given him. Reports of state experts and engineers were turned over to him. He went back east to report to Mr. Roosevelt and, with the nomination at Chicago, the hope for the project began more and more to rest in Franklin Roosevelt.

With the election these hopes rose higher. Fred W. McLean, state chairman of the Democratic party, long interested in Missouri diversion determined that the fight which had been considered lost had only begun.

"This thing must go to the President," he declared and immediately he took steps to place it on the President's desk.

Early in May, Postmaster General Farley visited St. Paul and a delegation representing the Diversion association conferred with him on the matter.

Details of the war department's report were still unknown in North Dakota and General Farley arranged to open the records to the proper persons if they would visit Washington.

Sivert Thompson, again president of the diversion association, and State Committeeman McLean, left at once for the capital. They were given access to the war department report and were astonished at what they found.

Though they had been told that the report still declared a dam could not be built at Garrison and that the whole project had been declared unfeasible, Mr. Thompson discovered that the army engineers had not only reported that a dam could be built, but they had gone into great detail as to how the work could be done.

They described a dirt dam set in place after the removal of the river silt. It was to use the famous North Dakota gumbo which was everywhere available for the construction. It was to be about two miles long and 190 feet high and it would create a lake 150 miles long between Garrison and Williston.

Mr. Thompson briefed the report. Mr. McLean took the brief and with the asistance of Senator Gerald P. Nye obtained an appointment with the New Deal President of the United States on the subject of Missouri River Diversion.

NEW HOPE IN PROJECT

FIFTH CHAPTER

Twelve years after the beginning of the movement that grew into the Missouri river diversion project, three men faced each other across a table in Washington

One was Senator Gerald P. Nye of North Dakota. One was Fred W. McLean, North Dakota state Democratic chairman.

The third was the President of the United States, Franklin D. Roosevelt.

There was no great formality about this meeting though the attention of the entire Dakota territory was upon the event.

It was not long before the conference was joined by a fourth man, the secretary of the interior, Mr. Ickes, and presently Secretary Wallace of the agriculture department was called in.

When the conference was over, Fred McLean rushed to the nearest telegraph office and this is the telegram which he sent to Sivert Thompson at Devils Lake.

> Accompanied by Senator Nye had a personal interview this morning with the president concerning Missouri Diversion Project. Had most favorable reception during which President indicated his belief that our project fitted in with administration plans for control of flood waters and hydroelectric development. Requested that map of project be left with him and intimated that the proposal would be removed from the War department to the control of the Departments of Agriculture and Interior and will call the secretaries of those departments in for consultation as to possiblity of immediate development. Senator Nye and I feel greatly encouraged over prospects. In view of sympathetic and understanding attitude of President suggest action by Devils Lake citizens and by citizens of other towns interested in securing completion of this proposal including towns such as Jamestown which will gain solution of sewage problems and Fargo and Grand Forks which will likewise be aided by flushing of Red River. This action should take form of telegrams and letters to our Senators and Representatives in Congress who will use them to show unanimity of public opinion favorable to the Diversion. Stress as benefit to agriculture in encouraging forestation and banishing recurring droughts. Let North Dakota present a united front now and we shall have made history.

When that telegram reached Devils Lake, there was a roar of triumph. The news was too good to be true and yet there was the signature of Fred McLean and everybody knew him.

There was a gathering of the clans and McLean's instructions were gone over with the utmost care. There were things to be done. The telegram told what they

were. They had to demonstrate conclusively that North Dakota, at least, was a unit in demanding Missouri diversion.

It seemed impossible that there could be any doubt but proof was needed and the proof called for was a flood of telegrams.

Once before, in the course of this campaign, the minute men of Devils Lake had shown support. That was when money was needed and two men signed up forty men to give a hundred dollars apiece in a few hours one afternoon.

Now the minute men were called out again.

They streamed in from all parts of the community to the office of the Devils Lake Chamber of Commerce.

Telegrams! If that was what was required, it would be easy.

How many men were available? Forty or more.

How many cars would be needed? A dozen or so were volunteered at once.

Noel Tharalson, secretary of both the Chamber of Commerce and the Missouri River Diversion association, laid out the routes. Each car would go a different way, describing a wide circle from the central city of Devils Lake into the territory that had suffered drought.

It was a matter of only a few minutes before the first cars began going out. They circled into the territory—eleven cars carrying forty men.

Out into the towns and cities in the drought area they swept. They covered the whole territory from the Missouri east to the Red river and north to the Canadian border. A similar foray went out from Jamestown into the southern territory, one car swinging across the border into South Dakota, hitting the high spots.

Everywhere there was one cry. Send a telegram.

And the telegrams began to pour in. Dakota senators and congressmen who had not been quite abreast of what was going on started up in bewilderment when the telegrams began to rain down upon them.

What was it all about, they wanted to know and they were quickly told. The telegrams were bundled up and carried to the proper federal offices.

There was no possible room for doubt. The Dakota area was unanimous in favor of the diversion project.

It was enough. Orders went out at once that the engineering data should be checked and a complete brief presented to the government.

State experts went to work at once. The engineering firm of Burns & McDonald of Kansas City was engaged for the technical work as they had served as consulting engineers for the City of Los Angeles on the Boulder dam project and on the Muscle Shoals work.

Speed was necessary because of the need for employment under the President's public works program of some 15,000,000 men long out of jobs. The 20,000 or more that would be required for five years to do this job would make a formidable contribution to unemployment relief. This was one project that could be started at once. It was 80 per cent hand work. It could be carried on throughout the winter. It was just what the situation demanded.

This final work on the project, the preparing of briefs and technical reports, has been completed. It has gone before the regional director, Frank W. Murphy, of the federal public works program and it carries the approval of the state public works advisory board.

Nothing remains to be done but the final approval of the project by the departments of agriculture and the interior.

When that has been received, the money has been allotted to the project, Missouri River diversion will begin to take from as a reality, a $65,000,000 reality that has grown out of the early vision of a Devils Lake steamboat captain and the vision coupled with action of a small town lawyer.

JOBS FOR 25,000

Few projects of any sort are more nearly ideal for purposes of unemployment relief than the Missouri river diversion undertaking.

The nature of the work is such that a very high percentage of the $65,000,000 expected to be spent must go for labor and this labor means jobs for the very type of men most likely to be suffering from effects of depression.

Estimates of the number of men to be required run as high as 25,000 and the period for which they will probably be employed is figured at three to four years.

As it happens the project can be attacked at more than one point simultaneously so that the number of men who will go to work as soon as the funds are available will probably be high.

First of all, of course, work will no doubt be begun on the great dam two miles wide and something like half a mile thick at its base which will rise to a height of 190 feet and a thickness of only 50 or 100 feet at the top.

This dam will be located near Garrison, N. D., and before it can be built the silt and other material deposited in the river bed by the stream itself must be removed. Also, it will be necessary to build diversion tunnels or sluices to conduct the ordinary flow of the stream around the work so as not to interfere with it.

These sluices will become a part of the permanent construction for they will be used to release surplus waters and probably for the power developments at the dam.

The dam itself will be built of good old Dakota gumbo.

While this work is being done, the ditching can be commenced at various places in the great basin to be watered and at the same time the project of driving a giant tunnel through a range of nearby hills for nearly twenty miles can be undertaken.

Here the work will be similar to mining in soft earth. A vast army of men will be required to shove the tunnel forward, to follow with the shoring and timbering of the work and to install the conduits that will eventually lead the water to the tributaries of the James river.

It will be possible at the same time to begin the works in the James and the Sheyenne river valleys that will store water for the South Dakota area and will force one of the main streams into the Devils lake district.

Not only will men begin to draw wages as soon as the project is begun but money will flow into the business channels of the trade territory. The camps or other housing for the workmen will form sizable towns where such towns do not now exist and Garrison, Bismarck and Minot will at once come in for a share of the business developed in these towns.

It is the purpose of the government, if the project is approved, to send to this work those in need of jobs in various sections of the country so that the money sent home by them to their families will stimulate business elsewhere and will relieve suffering over a wide area.

The demand for supplies at the site will create an active market throughout western North Dakota and South Dakota.

It is inevitable that a large number of the unemployed from North Dakota and South Dakota will participate in this employment and

considerable improvement in those sections should be noted among the needy even before water comes into the farm lands from the project.

But an even more important effect of the project will be felt immediately in the form of rising spirits and renewed hope in the agricultural areas of the two states and in the flood menaced areas of the south.

Give men hope and they are able cheerfully to endure amazing hardships and the rejoicing that will sweep the drought areas will begin to pay dividends to the government before ever a shovel is struck into the earth.

Already that hope is rising and the new administration will be amazed at the reviving spirits of this section when once the word goes out that the Missouri river diversion is to be a part of the federal program of unemployment, agricultural and flood relief.

NEEDED DESPITE ACREAGE CUT

A few of the most ardent proponents of the Missouri River Diversion project have lately been discouraged by the view that in times like these, when the government is endeavoring to cut down wheat acreage, a proposal which would increase the productivity of two states could hardly be justified.

They have forgotten that the federal government is likely to take the long view of the subject and that it is engaged even now in other projects to restore fertility of the soil and to make productive acres that are not now in production.

The theory of all this is that tne wealth of the United States must be kept up as a farm is kept up. If there is to be in this country the glorious future that has always been predicted for it, good husbandry must be the policy of the nation.

And water supply is one of the vital elements in good husbandry whether on a single farm or on half a continent.

It is estimated that some 12 million farmers now furnish on 241 million acres of land all the foodstuffs and raw materials necessary to be grown somewhere in this territory.

According to the latest authorities, it is theoretically possible for the same production to be had from something like 20 million acres and with two million farmers.

It is practically possible, according to record yields already achieved, for these two million farmers to raise the necessary products on 47 million acres.

This means that advanced methods in agriculture are tending to drive nearly ten million farmers from their farms and to force out of cultivation nearly 200 million acres of the 241 million acres now used.

In order to get a clearer view of present problems, imagine that this has all happened or is about to happen all at once. What will be the natural and logical effect on this section of the country?

The finest hard wheat in the world is grown in the Dakotas. Nothing could be more certain than that this wheat will continue to be grown somefhere in this territory.

The new agriculture, it is said, is not so much concerned with the character of the soil. It can supply the chemicals necessary to grow anything anywhere if the climate is right and there is plenty of water.

But water is one of the vital necessities in the new agriculture as in the old. Without water, the picture of two million farmers providing for our needs by the cultivation of 20 million acres or 47 million acres is a mirage. With plenty of water, it is theoretically and even practically possible.

If roughly 200 million acres of farm land is to be driven out of production in a century or in a dozen centuries something will have to be done with that land. The logical thing is to restore it to its natural state and that, in this section, means going back to grass. The government has already announced that it intends to restore some of the marginal lands to cattle range.

But grass cannot grow without water. And without this particular project it is doubtful if grass could ever again be persuaded to grow in many parts of North Dakota.

That is why the diversion of the Missouri river is a vital necessity to the nation. Even in the longest possible view of agricultural economics it still commends itself.

NO OTHER HOPE

Hope has been held out to the farmers in the drought areas of the Dakotas that the conditions which cause lack of moisture move in cycles and that the drought will disappear one of these days to natural causes.

An examination into this phase of the matter indicates that it is an ephemeral hope indeed and one on which these farmers would do well not to bank too heavily.

There are two cycles that have been recognized as having to do with weather conditions. Both have an astronomical background.

One of these has reference to the tides of the ocean and may be due to the pull of the moon or other planets on the waters of the ocean. If the farmers expect to wait for that to influence the weather here, they may have a long wait for the conditions it brings about are said to occur something like every 260 years.

The other has reference to sunspots and for practical purposes would appear to be much easier and more profitable to wait for, for these sunspots occur, roughly speaking, every eleven years.

In other words, certain spots on the sun which affect the rainfall in all parts of the world gradually increase in number and in area for something like five and a half years and then gradually decrease for the next five and a half years.

Cloudiness is said to be greater in periods of maximum sunspots and temperatures have a tendency to rise during periods of few sunspots.

These effects are notable in certain parts of the world but, to those who are familiar with the water levels of Devils Lake and other lakes in the drought area, it is clear at once that they have no very considerable influence on drought hereabouts.

Devils lake is the great indicator of water levels in this whole territory and it is a historic fact that for more than fifty years the waters in this lake have been receding. During that time the record has been kept. It is said that the influence of this 11 year cycle can be faintly seen in the record but there is no evidence anyone can find that, in the next 11 years, there will be any marked change in conditions in the drought sections except possibly a change for the worse.

A much greater effect could undoubtedly be caused by cutting down the moisture necessary for a crop of wheat.

It has been estimated that 500 pounds of moisture is required to produce 100 pounds of wheat. It has already been proposed in Saskatchewan to experiment with wheat in an effort to produce a variety that requires only 400 pounds of water to each hundred pounds.

If such experiments were conducted here and the amount of water required to mature wheat were reduced one fifth as is proposed in Canada, the results both agriculturally and climatically would probably be much greater than the business of waiting for a recurrence of sunspots.

But the simpler and more tangible method of increasing the water available in the Dakota territories affected is to bring the waters of the Missouri into the great natural reservoir of Devils lake and its surrounding lakes, streams, swamps and coulees, thus contributing not only to the relief of drought in the dry areas, but controlling waters necessary for navigation on the lower rivers and greatly reducing the danger of flood damage and death along the Mississippi.

It is this which is intended to be done by the Missouri river diversion project and it is this project which the federal government now has before it for acceptance as a part of its general program of agricultural, flood and unemployment relief.

PERMANENT FLOOD CONTROL

If flood control alone could be listed among the benefits of the Missouri River diversion project, that project would be well worth the consideration of the federal government.

At the time when the lower Mississippi burst its banks in 1927 spreading devastation and death over a wide area, the amount of water rushing to the sea in that part of the river was carefully measured.

Similar measurements were made at Bismarck on the Missouri river and it was found that 7 per cent of the great flood passed that point. This means that a very great contribution to the control of the flood on the Mississippi could have been made by holding back this 7 per cent in the Missouri.

Any project which had any prospect of holding back one-thirteenth of the disastrous Mississippi waters would have been considered worth hundreds of millions of dollars and it is said that, for a limited time at least, the Missouri diversion project could hold back that entire volume of water.

If a fraction of the cost in lives and property and in relief work after the flood of 1927 could have been saved and put into the diversion of the Missouri, it is safe to say the flood would never have occurred.

If danger of such flood was now past, if it could never come again, the expenditure would, of course, be justified from the standpoint of flood control, however well worth while as a measure of agricultural economy. But that danger is not past. It remains today virtually as great as it was in 1927.

It will always remain until the waters in the streams or in some of the streams tributary to the Mississippi and the Missouri are controlled.

As a matter of fact, it was the flood of 1927 that first brought the Missouri rier project to national attention. At the Chicago Conference on flood control arranged by William Hale Thompson, then mayor of Chicago, the men who had fathered this proposal were present by invitation and they were there informed that this plan was the only possible solution of the flood problem.

At that time it was mentioned that control of the Ohio, the Tennessee, the Platte and other rivers pouring into the Mississippi might be necessary for permanent solution of the problem. Whether that is true or not, it is certainly true that checking the waters of the Missouri and sending them forth in the Dakota area to raise the subsoil waters of the drought afflicted farms will go a great way toward halting the most disastrous breaks along the lower river.

But flood control is only one of the incidental benefits to be derived from this project. It has been said that, if it raised the value of each acre in the Dakota area to be affected, 25 cents, it would pay for itself in 16 years. If it raised the value of the land a dollar an acre, it would pay for itself in four years.

That being the case, if it prevented the abandonment of farms in this district or if it kept their value from decreasing one dollar its cost would, in four years, be money well spent.

North and South Dakota are on a natural highway to the west. Over this highway great number of tourists would pass in addition to those already so doing, if hunting and fishing and scenic beauties could be had along the way.

Such facilities in Minnesota have brought as much as fifty mil-

lion dollars a year into the state. And fifty million dollars is only a little less than the estimated cost of the project which seeks among other things to restore the game and fish and the beauty spots of the lake region.

It is not possible to estimate the vast economic benefits of this project, but surely enough has been said to indicate that this work will pay for itself many times over both to the government and to the people of the state who will be required to pay their part of the public works bill in any event.

SOCIAL CHANGES FORECAST

There are several features of the Missouri River Diversion project which ordinarily escape attention when its effect on the surrounding territory is considered.

These have to do with social changes and the widening of opportunity throughout these districts.

One of the most important of these is the development of power at the site of the Garrison dam. When that dam is built and a great lake has been backed up in the Missouri for nearly 150 miles with a head of nearly 150 feet at the dam itself, a by-product will be an abundance of electric power which can be conducted into large areas of North and South Dakota and Montana at low cost.

However that power is handled, it is going to make a vast difference in life in parts of those three states. Not only will it lighten the burdens of labor on the farms and in the towns of the area but it is going to introduce extensive manufactures in some of the communities.

It is possible that, for the first time, North Dakota will be able to take full advantage when of its great deposits of lignite and it may be that the more general use of electricity in handling this fuel will send it into every community of the United States.

The manufacture of pottery from the undeveloped clays of the nearby bad lands is another possibility and it is said that these clays are of finer quality than any other in the world.

Restoration of water to the great areas to be affected by the project will undoubtedly encourage diversification in farming and withdraw much of the territory from wheat production, turning it into the production of alfalfa sugar beets, potatoes and hay and pasture.

The soil of the area is said by Dean E. L. Walster of the North Dakota Agricultural College, to be well adapted to these crops. As much as two or three cuttings of alfalfa will be made possible which will influence the production of beef cattle and sheep and lambs.

This, with the availability of electric power, will undoubtedly result in the establishment of packing houses and sugar refineries as well as making it possible to install woolen mills.

The growing of garden crops will free the farmers from the necessity of purchasing fruit and vegetables or their subsistence and may even make possible the establishment of canning factories to store the surplus.

The great problem of manufacturing in this area will probably be transportation to the logical markets and it is within the bounds of possibility that the improvement of navigation on the Missouri and Mississippi, which has already been voted and to which the diversion project will contribute, may serve to open a considerable market for such goods among the river towns all the way to New Orleans.

At the same time the great railroads which serve the area will find countless new shipments of both raw and manufactured materials to be moved into and out of the Northwest.

An even more important social change, however, may come from this development. It will make possible the establishment in North Dakota of thousands of small farmers whose principal object is successful maintenance of their families rather than large scale production and among these may be many who have found it virtually impossible to obtain a livelihood in the large population centers.

It has been suggested, in fact, that the workmen who construct the dams and waterways contemplated in the project be encouraged to establish their families on such small tracts during the construction work and prepare to remain in the state. This is by no means impossible and the result will certainly mean new growth in the areas now being bled white by drought.

THREE STATES

Benefitted By

MISSOURI RIVER DIVERSION PROJECT

(Map by Courtesy of St. Paul Dispatch.)

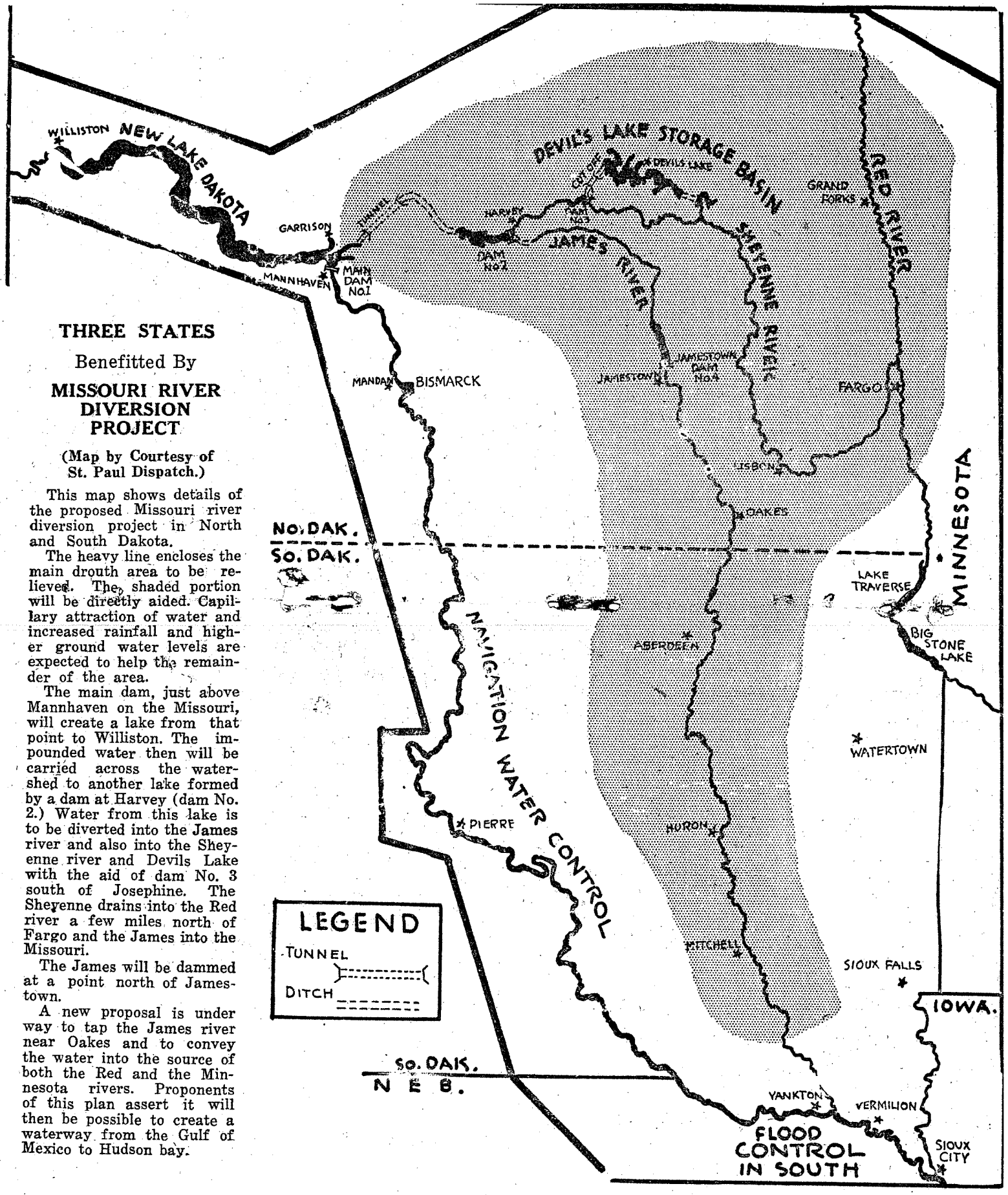
This map shows details of the proposed Missouri river diversion project in North and South Dakota.

The heavy line encloses the main drouth area to be relieved. The shaded portion will be directly aided. Capillary attraction of water and increased rainfall and higher ground water levels are expected to help the remainder of the area.

The main dam, just above Mannhaven on the Missouri, will create a lake from that point to Williston. The impounded water then will be carried across the watershed to another lake formed by a dam at Harvey (dam No. 2.) Water from this lake is to be diverted into the James river and also into the Sheyenne river and Devils Lake with the aid of dam No. 3 south of Josephine. The Sheyenne drains into the Red river a few miles north of Fargo and the James into the Missouri.

The James will be dammed at a point north of Jamestown.

A new proposal is under way to tap the James river near Oakes and to convey the water into the source of both the Red and the Minnesota rivers. Proponents of this plan assert it will then be possible to create a waterway from the Gulf of Mexico to Hudson bay.



NORTH DAKOTA'S SALVATION

North Dakota is beginning to face facts about its water situation.

And the biggest of those facts is that twice as much water is being taken from the state by evaporation each year as falls in the same period in the form of rain or snow.

Normal evaporation is 32 inches a year.

Normal precipitation is 18 inches a year.

It requires no higher mathematics to discover from those figures that the state is drying up.

Nor does it require even these figures to convince the average farmer and the average householder of that fact. Each has daily testimony in the water level of his well and in the disappearance of lakes and streams and ponds that have always before been well filled with the water that is vital to human and animal life.

Devils Lake has seen the most startling evidence of this nature. It has seen the waters of the lake recede to a point where the stamboat channels of other days have become farm lands. Concrete highways cross the former lake bed. The remaining lake itself its said to be only seven feet deep in its deepest parts. From the recession that has already taken place it is easy to see that the entire lake will be wiped out in the space of a few years.

If the disappearance of a valuable scenic attraction were the only thing involved, the loss would be serious enough. But the lake is only a marker. It is a visible indicator of what is taking place in the whole territory.

The disappearance of the lake is due to the recession of ground water levels in the entire area round about and this area extends into Minnesota and South Dakota. It is vital that these levels be restored.

It has been said by water geologists that fifty years will see the entire section reduced to uninhabitable desert, unless this drying out process is halted.

Dakota farmers have gone on from year to year in the hope that drought conditions would be averted by some change in the weather or kindly turn of fortune. Each year it has been hoped that there would be more rain, but each year that hope has failed.

Consultation with those who understand the nature of this development furnishes no valid basis for such hope. Each year there is a net loss of water from the state because twice as much water is taken up into the air as falls from the air in any form.

With each year that this continues the winds that sweep across the historic Dakota plains will become hotter, will become hungrier for the water that remains to be licked up. With each year the rainfall is bound to be reduced because these hungry winds cannot find enough water to make rain possible.

The drying up process will become more and more rapid. The failing wells of this year will become the dry wells of tomorrow. The lessening flow of artesian water will eventually be no flow at all. But long before the artesian wells are dry, vegetation will have begun to disappear. Sandstorms such as have lately occurred will come to be more and more frequent.

There will be no dramatic warning. The condition will be gradual and each year the suffering will be a little greater until hope fails and the men and women who have struggled to make their homes here have been driven penniless from the land to find refuge elsewhere.

Poverty and misery will be the forerunners of the exodus and they have already begun. They are the only warning, they and the gradual recession of the lovely waters of Devils lake.

Civilized man in other ages would have no alternative but to flee

from these conditions. But in American civilization today, geologists can sometimes find the causes of failing waters and engineers hold the key that will unlock new floods.

These causes have been found and the key has been located in North Dakota. It lies in what has long been held to be a wild dream, the diversion of waters from the Missouri river.

The project is a gigantic one but it is by no means as great from an engineering standpoint as the Boulder Dam project and will probably be more vitally necessary and not nearly so costly.

Simplicity itself, this proposal is to dam the Missouri river at Garrison, thus gaining flood control for 7 per cent of the waters of the lower Mississippi and to carry a part of the dammed flood through a tunnel in the nearby hills into the head waters of the James and Sheyenne rivers and into Devils lake.

The estimated cost of this project will be $65,000,000. Its result will be the restoration of the ground water levels in North Dakota, South Dakota and Northwestern Minnesota and new hope for both farmers and city dwellers in the threatened district.

The states themselves are in no position to finance this cost. But the President of the United States has been seeking practical public works of human value to the nation. They are necessary in order that fifteen million unemployed may be restored to livelihood. More than three billion dollars has been set aside for these works and the projects are in process of selection.

Sixty million dollars of this money will put twenty to twenty-five thousand men at work on the Missouri river diversion project for three to four years.

The resulting restoration of water levels will drive drought suffering out of all North Dakota, out of South Dakota and out of Northwestern Minnesota.

Prosperity will first be restored to the Mandan-Bismarck section which dominates the western trade territory in which the work is proposed. This prosperity will spread through the state and provide temporary relief in the present financial crisis.

As soon as the waters have been released, as soon as the water mark of 1883 has been touched by the waters of Devils lake, new hope will be born in the hearts of millions of people in the affected territory and suffering will be driven from the Dakota plains.

North Dakota must see and understand these facts.

It must make known the vital necessity of this project. And it must draw attention to the very great probability that if North Dakota becomes the Gobi desert of North America, the conditions that exist here will spread throughout the entire plains country of the United States.

The scourge of drought can be halted now at comparatively small cost; it can be halted by a project well planned and thoroughly tested by the best engineers in the nation. If that project is long delayed the cost will rise and eventually the entire situation will have gone beyond human control.

A new agricultural economy has arisen out of the original proposal to restore the water levels of Devils lake and if that economy is not speedily put into practice, North Dakota will become an agricultural plague spot that stands a constant menace to the nation.

WILL RAISE GROUND WATER

Since the first proposal of the Missouri River diversion project, there have been discovered from time to time new benefits to be derived from it which were not considered when the plan was originally laid out.

Each of these testifies to the practicality and the desirability of the work proposed and to the fact that the men who first undertook the study of the subject builded better than they knew.

Frank L. Anders, water commissioner of Fargo and secretary of the Board of State Capital Commissioners, has long favored the proposed diversion of the Missouri but he comes forward now with new discoveries regarding its feasibility both from an engineering standpoint and from the economic view.

"We know that the raising of the ground water level to the grass roots would be the most valuable contribution to this fine agricultural region that could be accomplished," Mr. Anders writes. "This, it now appears, would be easily accomplished by the proposed diversion of the Missouri because the topography of the section affected is ideal for a flowage from higher to lower levels due to the almost universal prevalence of glacial drift composed of sand and gravel and intermittent layers of clay.

"I have given considerable study to Bulletin No. 611, which is the guide book of western United States, published by the United States Geological Survey and this gives a section of the geological features from Lake Superior to Puget Sound along the line of the Northern Pacific. A study of the geology as set forth in this bulletin confirms me in every premise and assumption I have made on the feasibility and practicability of the Missouri river diversion plan.

"I have consulted Chamberlin's Geology of the State of Wisconsin by the eminent geologist, Prof. T. C. Chamberlin, on the subject of artesian wells and kindred matters relating to ground water levels. I have also studied Physiography, American Science Series, by Rollin D. Salisbury of the University of Chicago, wherein he entered into a very clear discussion of ground water and the effect of the raising of streams and lakes on the high ground such as that which lies between the James and Sheyenne rivers and the Red river. His discussion of the effect of a plentiful supply of water in lakes and rivers on the height of the ground water in higher ground between streams and lakes confirms me in the belief that we are going to get a very much more extensive benefit in relation to the raising of the ground water than we had heretofore anticipated.

"We will not only get the effect of ground water due to the difference of elevation of the source and the area affected, but also the effect due to what might be called capillary attraction together with the effect of rain fall.

"The effect of this project on the height of ground water levels in various sections is going to be very marked.

"This is too extensive a subject to discuss in this letter, but I call your attention to the factors because they mean that Missouri river diversion is going to be even more valuable than at first anticipated."

HOW MUCH IS $65,000,000?

A great deal has been said from time to time about the heavy expense of the Missouri River Diversion project. Sixty-five million dollars seems to the individual with only a small sum in his pocket to be a tremendous amount of money.

And yet it is only about $3 an acre for each of the twenty million acres to be affected.

Spread over a period of say 12 years, it amounts to only about 25 cents an acre each year.

But so great are the benefits to be derived from this work throughout the nation that it is not proposed to assess the cost against the more directly benefitted property. It is planned that this shall be a federal project and that the whole country will help pay for it.

It then becomes a matter of fifty cents for each person and, spread over the same period of twelve years would be only a little over four cents a year. It is not unusual to spread the cost of such projects over forty or fifty years so that we presently get into terms representing about a penny a year for fifty years which makes this proposal seem rather small.

In the search of the federal government for productive work on which to employ its vast army of idle workers, the size of this project is its chief recommendation. Supposing that 25,000 men will be required to do this work and that another 25,000 will be able to make a living from their expenditures as the money makes its way through the channels of business, it would be necessary to find 300 such projects to put everybody back to work.

There are not now proposed 300 constructive public projects of this magnitude which can be justified from the standpoint of economic benefit to the country. It would require great vision to find 300 such proposals.

Even if they were to be laid out, it would take a considerable number of years to make the plans necessary before men could be put to work on them. The planning has been done on this one project. Even the preliminary engineering work has been done.

It is safe to say that, if this proposal were approved tomorrow, men could go to work on it in ten days time. That in itself recommends it for immediate relief of unemployment.

The type of work is such that it can be done in winter as well as in summer which commends it further.

But when the magnitude of the project is considered, it must be remembered that nature has already done the biggest part of the work. It has already dug here the great reservoir of Devils lake and a hundred or more other lakes which add to the value of the project itself.

The value of these is just as great as though they were a part of the construction work to be done, yet it would take all the 15,000,000 unemployed in this country to do that work.

Considering what the nation is to gain by the expenditure of $65,000,000, this project would be cheap at many times the price which must be paid.

IT CAN BE DONE

The engineering problems involved in the Missouri River Diversion project are said to be such as to challenge the best abilities of the engineers.

Army engineers once declared a dam could not be built in the Missouri river and later, after outlining how it could be done, they insisted it would cost too much money.

The previous performances of the engineering profession, even of some of those members who frown upon the proposed work, are such as to convince the ordinary individual that there is nothing he can imagine that the engineers can't accomplish.

Certainly they have come so near doing the impossible in scores of other cases, that it would take a great deal more argument than has been offered to convince the average man that they can't do this.

The attitude of most men in the engineering profession seems to be expressed by the statement of one of them.

"Give us the money and we'll see that it's done."

Even if a dam could not be built on the Missouri, these men tell us, the water from that river could be brought into Devils lake and into the other lakes, streams and sloughs of the drought region by other means.

And water is the primary need of North and South Dakota if the vast plains country is to be saved from the depredations of aridity.

The Missouri River Diversion association takes the position that water must be had in this area at any cost and that it does not matter how it is brought here.

Even those who say the thing is impossible, do not hesitate to pronounce the diversion plan one that would be of the greatest possible benefit to the affected area if it could be accomplished.

Under these circumstances the situation appears to be this:

The proposed diversion of the Missouri flood waters will be of the greatest possible benefit to two states if it can be done.

It can be done if the engineers are given enough money.

This brings the matter to a final question which is not, in the last analysis, an engineering question at all.

How badly is it needed?

The estimated cost is $65,000,000. Is it needed $65,000,000 worth?

When it is considered that twenty million acres will be affected and that these twenty million acres promise to become worthless if the thing is not done, then the problem becomes more simple.

At a nominal price of $30 an acre, twenty million acres are worth $600,000,000. It is merely a question of spending a dime to save a dollar with a good chance of getting back the dime the first year.

For the safeguarding of land values is only one small part of the project. Far more important is the safeguarding of millions of people both in the drought area and in the flood area of the South.

Minnesota has estimated that its tourist trade brought in in one year almost as much as the cost of this whole project. The attraction of tourist trade alone may be enough to pay for this work.

Who then can say that it isn't worth the money?

ENDORSED BY NEBRASKA

The addition of Nebraska to the list of those states now actively in favor of the Missouri river diversion project is tangible evidence of the national character of the proposal.

Since the days of its own struggles against drought and insect pests, Nebraska has been noted as a state of wide vision and of practical interest in the welfare of the great Mississippi valley.

It is, therefore, by no means surprising that Nebraska should recognize the vital necessity of this plan to restore water to the vast fertile plain in the north which has been suffering increasingly from year to year because of drought and the crop blights and insect pests that are due to drought.

Nebraska knows that a healthy agriculture cannot be built up in any territory impinging upon an area of drought and desolation. It knows that drought and blight have a tendency to spread and that insect pests known no state boundaries.

It requires no greater vision for Minnesota, Iowa, Montana and the other states which border on the Dakotas to see the importance of the great northern movement for water conservation and they will undoubtedly be found staunchly behind the project when it has been explained to them in terms of agricultural economy.

The prairie provinces of Canada have already recognized the problem and are putting a great deal of intelligent thought and action behind their own program of water conservation.

Not all the states and provinces are so fortunate as to have an unfailing water supply available for such a project as this but most of them realize that intelligent co-operation with the Missouri diversion program will simplify their own problems and make them easier of solution.

Canada has gone so far in its attack upon the riddle of drought control as to propose the planting of hedges along the north and south lines of the quarter sections in the drought area thus catching and holding snow moisture and preventing the drifting of the soil. It has worked out this plan in practical detail and also is directing its people in the excavation of dug-outs or small reservoirs to increase the surface waters of the area.

A similar program is the only possible hope of the Dakotas and some of the surrounding states if the diversion project is not adopted in the near future. It would cost more and be nowhere near so effective as diversion.

There is probably no state in the entire Mississippi valley that will not benefit in some degree from the diversion of the Missouri and the restoration of healthy agriculture to this wide area.

WILL CREATE NEW BUSINESS

If the federal government decides to spend $65,000,000 on the Missouri River Diversion project, fast action may be expected. There is no likelihood of any dilly-dallying.

Much work has been done on the proposal. Engineers have already made preliminary studies. Their work has been checked and the final report is ready.

Regional meetings have already been called and a yes or no decision may be expected. North and South Dakota and now Nebraska are on record in favor of it.

In the face of the present need for employment as a measure of relief for the idle, the word has been given to rush all work possible and it is entirely within the bounds of probability that construction will begin within sixty days.

That being the case, it is high time for the people in every community of the affected drought area to prepare for its own part in the developments that will immediately follow.

Certain benefits involved in the plan will be noticeable at once. A flood of money will be poured out into the business channels of several states just as a flood of water vital to the productivity of twenty million acres will eventually be conducted into the area.

But more than this, there will be a new well-spring of hope in the hearts of several millions of people. There will be new incentive for effort throughout the whole area.

Movement in the real estate market may certainly be expected as a result. A great new market for supplies will be created at the door of the states.

New impetus will be given to reforestation and afforestation. Farmers will find justification for new commitments, especially in new purchases of long needed machinery and other equipment.

Manufacturers must study the possibilities opened in the territory for new activity in their lines. Countless social changes already referred to in this series of articles will open thousands of doors of opportunity.

It would be well worth while for each of the affected states to set up new programs of state-wide development and to begin at once new activities for empire building in the transformed area.

It has been said that, given water and the proper climate, all the agricultural products necessary to the entire nation could be produced on twenty million acres and so the importance of the twenty million acres which will be directly affected by the diversion of the Missouri cannot possibly be over-estimated.

A new era of agricultural life will open with the restoration of ground waters in this section. And new eras mean new opportunities for everybody. Now is the time to begin planning.

DAKOTA SOIL DRIFTING

Over a vast area of the Dakota plain for the past few years have been sweeping terrific dust storms. To those who live among them, they are at times almost unnoticeable. The eye has accustomed itself to the peculiar haze that hangs in the air. The skin has become impervious to the sensation of sifting grime.

But to those who have not before known these evidences of tons of the finest soil in the world drifting about in the air, they are an amazing phenomenon.

At times, these dust storms rise to such proportions that it is difficult to make headway against them in the open and travelers even in closed cars come in powdered with gray dust, housewives find their best furniture covered thick with the gritty coating, and an epidemic of minor ailments follows in the train of the event.

Not even today is the full significance of these storms realized. Only to a few are the evidences plain that the process of wind erosion and soil drift are robbing great areas of their most valuable natural resource.

The alluvial earth lies deep over the fertile areas of the northwestern Mississippi valley. But it is not so deep that constant removal of it does not present grave dangers to human and animal life.

Already the drift of soil, the deposits of dust and alkali are killing young plants as their sprouts thrust through the ground.

With each small patch of denuded land left barren of vegetation by the shifting soil, the condition is aggravated. The next breeze begins shifting more top soil and the process repeats itself.

These are visible evidences of the condition which the Dakotas are attempting to fight in their proposal to divert the Missouri river and restore the ground waters of the plains area.

Dust storms like these were unknown in the days of the pioneers. They can be prevented only by increasing the sub-soil moisture, enlarging the areas of surface water and by adopting every possible measure that will help increase precipitation and retard the run-off of melted snow each spring.

If this is not done, the dust storms of today will grow constantly more annoying till finally they have driven all forms of life from the area.

The sacrifice of the great plains would be a blow to the country but the process will not stop there. It will advance more and more rapidly into surrounding areas till it is no longer possible for any hudan agency to stay the devastation wrought.

Now is the time to prevent this tragedy. It can be done at half the cost of the great Boulder dam and will serve a greater area. It will pay constant dividends to the whole nation.

The simplest and easiest as well as the least expensive method of combatting this menace is that outlined in the Missouri river diversion project. It must be done.

A SAFE PROJECT

The most casual reading of the Burns & McDonnell engineering report on the Missouri River Diversion project is sufficient to convince any student of administration policy that the federal government will approve this work and provide the funds for it.

Given the now thoroughly established fact that the Garrison dam and the diversion works can be constructed — and safely — then the government has only to decide whether or not it is worth the money from a federal standpoint.

In view of the fact that the project has been found to contribute to nine types of work now considered proper for the expenditure of federal funds, it would appear entirely proper for the money to be spent even under the most ordinary conditions.

But these are not ordinary times. There is, beside the natural economic worth of such a project, the compelling fact that millions upon millions will have to be spent for unemployment relief if it is not spent for work of this sort.

Even this, however, is not the whole picture.

It is possible that there might be reason for holding up the project even with its value shown and the employment problem to be solved.

But when it is considered that whole states are jeopardized by the conditions to be corrected, that whole populations may have to be moved out of this country as they were once moved out in the early days of settlement here, unless immediate action is taken, then the thing assumes a different face.

It becomes a matter of vital necessity not only to the affected areas but to the whole nation. For the country can not at any time afford to permit wholesale disaster in two or three states when that disaster can be prevented by putting to work 25,000 men.

Not only does this project meet all the requirements of the federal public works program as regards feasibility, practicability, and productive economy. It goes beyond that. It becomes a project the value of which cannot be measured in dollars or cents or which, if so measured, would be valued in sums staggering to the imagination.

It is clearly quite probable that failure to provide these funds would hamstring the entire program of national recovery.

COMMON SENSE RULES

When doctors disagree, sensible men use their own best judgement.

The same rule would seem to hold when engineers disagree.

There have been from the first a few engineers who have scoffed at the plans of the Missouri River Diversion association. Some have said it couldn't be done, this great feat of impounding the waters of the Missouri and conducting it slowly through a great area to raise water levels and increase the acreage of surface water. Others have said it would make it necessary to move the whole town of Williston. And still others declare there isn't enough water in the Missouri ever to fill up the Devils lake basin, and relieve the drought conditions in this section.

When you pin down those who say it can't be done at all, you find generally that they qualify their statement and say that it probably could be done but it would cost too much money. And, as has been said, the matter of cost is not on engineering question but an economic one.

As between those who say it will flood out Williston and parts of the city of Devils Lake and those who say there isn't enough water in the Missouri even in flood times to do any good, there is not much choice.

When it is considered that a great number of equally competent engineers have said that it can be done, that there is enough water and that it will not flood out anybody but will prevent floods, and when it is found that agricultural and economic experts have said it must be done, then the rest of us have to use our own judgment.

One engineer who declares there is not enough water in the Missouri, offers as a better and cheaper solution of the problem the damming of many smaller streams and the closing of ditches everywhere in the state. He also advocates the sinking of great artesian wells to fill the dried lakes.

These may be excellent plans and the federal government may insist that they be carried out at the same time as the diversion project. But without that project they inspire only faint hope in the minds of those who are suffering from drought.

There is little danger of getting too much water in North and South Dakota. There is great danger of not being able to get enough.

And practically all the engineers agree that if it can be done and is done successfully it will be a magnificent thing for the entire area.

Which, to the average man of common sense, is a sufficient reason for deciding in favor of it.

TO PRESERVE GAME LIFE

Prairie chickens and grouse are said usually to thrive on drought. Dry cover for the young birds, unharvested wheat fields and the increase of grasshoppers in unusually dry seasons make for larger coveys and excellent sport for the thousands of hunters who invade the uplands each year.

But even these game birds cannot live in a country completely devoid of surface water. The evidence is already at hand that they are suffering from the severe drought. It is found in their repeated visits to the farmyard watering troughs and, with the drying up of more sloughs and wells following the disappearance of most of the lakes and streams which have provided luvuriant cover, the upland game cannot long survive.

When, along with this, is considered the fact that wild geese and ducks formerly so plentiful in the present drought area have in great numbers altered their path of flight in the annual migrations, it must be clear at once that there has been a tremendous loss to the states of North and South Dakota in valuable game birds.

It is a sort of loss that would not ordinarily move the federal government to such a water conservation measure as the Missouri river diversion project, but taken with the other benefits to be derived from that project, it is an added reason for giving the matter careful consideration.

There is little doubt that the restoration of surface waters will bring back millions of waterfowl to this country. If it does that, it will bring thousands of hunters from other parts of the country for the sport to be had here.

Other states have found their hunting and fishing immensely profitable. Minnesota estimated that in one year, her tourist traffic brought $50,000,000 into the state.

That being the case, it is entirely possible that the improvement of hunting and fishing in the Dakotas would alone justify the $65,000,000 expenditure proposed in this project.

If this should prove to be the case, then the far greater benefits of agricultural relief, industrial development, flood control and improvement of navigation would be "velvet" as the slang expression has it.

This is a point well worth thinking about, though it is ordinarily overlooked in any consideration of the proposal to divert the Missouri.

NEEDED FOR PRESIDENT'S PLAN

President Roosevelt is said to have indicated to South Dakota men who visited him in behalf of the drought suffering in the Dakotas that he intended to withdraw a considerable part of the marginal areas from wheat production and insist that they be devoted to grass and to live stock.

This may be taken as new evidence of the intelligent attitude of the present administration toward the very difficult problems of this district.

Since the condition of advancing aridity in the Dakotas was due primarily to the removal of the protective covering of sod from the wide prairies, the restoration of that sod in any considerable area will tend in a measure to relieve the situation.

It will hold in the ground water which now evaporates from it. It will prevent the rapid run-off of water which now rushes into the larger streams and causes the damaging floods on the lower Mississippi.

But with this marginal land already semi-arid, it is going to be difficult to get the grass to grow in some of these sections. Without more water, the process of restoring the sod will be a long and gradual one and in some instances may not be possible at all.

Unless additional water is brought into these districts, relief from this source from the drought conditions may be a matter of 100 years. Even the grass grown will be so scant as to provide poor pasturage and some of the territory will suffer from drought as much in the production of livestock as in the production of grain unless they can be assured of sufficient water supply.

There is only one reliable source for renewing the water supply in these areas and that is the Missouri river. The diversion of the river into the lakes and streams will increase the supply of ground water in the marginal areas as well as in the proper agricultural sections. It will make the growing of grass on the marginal lands possible and contribute to the desired prosperity of the livestock farmers as well as to the growers of grain.

While the President's plan is logical and necessary both for the control of wheat acreage and for the restoration of normal water conditions in the drought areas, it cannot function properly without river diversion and it is greatly to be hoped that this will be as clearly seen as other facts of the problem.

That it is already so seen is evidenced by the early interest of the President in the diversion project and there need be no alarm in the Dakotas over this announcement. It is brand new evidence that all sides of the matter are beig approached and are well understood by the President and his advisers.

NO DRAMA IN DROUGHT

There is no drama in drought.

There is only suffering that grows more and more intense till endurance snaps and all instincts fail except the desire for water.

Parts of North and South Dakota have been suffering from drought for years. It has brought anxiety, even the spectre of fear to every living thing in the affected areas.

Wild ducks with their young waddling behind them, too small to fly, have been seen trekking across dusty stubble fields in search of water.

Prairie chickens and Hungarian grouse, shyest of birds, have been seen marching in the face of fear to the farmyard wells.

Cattle stand lowing before barnyard gates.

And begrimed toilers of the soil laboriously haul water perhaps for many miles that these cattle may be kept partly fit for the market.

Anguished men and women, face to face with financial ruin, in some instances have abandoned their cherished homes and have fled to other sections of the country.

This is what drought means in these states today. What will it mean tomorrow?

In the answer to that question lies the hope of thousands here and perhaps of millions here and elsewhere in the years to come.

In other days there would have been no hope. Man has fled from drought throughout the ages. Deserts have closed in behind him and his bones, perhaps, have bleached upon the sand.

But a new day has dawned in the agricultural economy of the world. Men are learning about drought. They are learning what must be done to check it or drive it out.

Water geologists have discovered the causes of the drought that has been moving down on the Dakotas. They have told us that the blanket of sod once formed a protecting cover over the great prairies. Billions of tiny grass roots sucked at the water in the soil to keep it from rushing away to the streams and rivers for many months after the melting snows and rains of spring.

That sod has been torn away. In its place now stands the stubble field. The turning of the earth dries it out. Hot dry winds lick up the moisture and carry it away before it can be precipitated again in the form of rain. Or the roots fail to hold it and it runs to the nearest river.

Spring freshets that once were sucked up by the roots and grass now pour into the great streams that go roiled with the rich earth they carry with them to the lower river.

There in spite of levees built at great expense to keep them in bounds, they sometimes break loose and desolate other great areas.

There is drama in flood. And it is there that men have seen the need and have built great works to enchain that river.

But now men know that the river can be safely chained only in its headwaters. There the water can be held back before it is powerful enough to break away.

The cure of floods on the lower Mississippi is not in the levees that rise higher and higher each year as the deposit of silt lifts the bed of the stream. It lies in the cure of drought at the headwaters.

But the water geologist is only the diagnotician. He can prescribe the cure but the engineer must be the surgeon. The engineer must build the dam, acqueducts and reservoirs that are to hold back the waters.

The engineer can pour the waters into the dry beds of lakes from which they have long disappeared. Given enough water, he can

restore the ground water level so that these lakes need never disappear again.

And there is enough flood water in the upper Missouri at Garrison, N. D., to restore the water in the whole drought area of the Dakotas. That is the project of the Missouri River Diversion association.

To capture and hold back the roaring spring floods of the upper Missouri is a gigantic task but it can be done. It must be done if today's suffering of man and beast in the drought areas of these two states is not to become tomorrow's agony and death.

Alerady this section has been so weakened by drought that it cannot finance the cost alone. But the federal government must stand the cost. If it does not build the dam at Garrison, at a cost of $65,000,000 it will be compelled to spend far more than that when the next great floods break loose on the lower Mississippi.

Already it has spent billions on these great works and there is no end in sight for the problem of flood control is not solved at the scene of the flood.

When the Garrison dam has been constructed, one man at a valve handle can protect the helpless people in the flood areas of Arkansas and Louisiana. And that same man will send new life and new hope of life into the Dakotas.

There is hope for North Dakota and for South Dakota in the Missouri river diversion project for men of heart and sense are at the helm of government.

With jobs to be found for fifteen million men, with lives and homes to be saved in the drought areas, with other lives and homes to be rescued from the tragic menace of floods in the South and with the knowledge that the money must be spent in any case to keep the river chained or to chain it again, it is not possible that this government will fail to consider the need of silent suffering or wait till the tragic drama of a terrifying flood forces action.

ONLY PRACTICAL PLAN

The plan of stream unit regulation for controlling flood waters has long been endorsed by engineers as the only practical and economical method of dealing with the national problem of flood waste.

This is the chief reason why the new administration of the federal government is directly interested in the Missouri river diversion project.

But it comes now to be clearer than ever before that this same plan is the only effective and economical method of dealing with the rising problem of drought.

When the levees of the lower Mississippi river give way bringing disaster and ruin to vast areas in the great South, it is in large measure the federal government which must repair the damage and bring relief to the stricken area.

When the condition which causes these floods lays waste great districts at the headwaters of the Missouri and its tributaries, when it drives families from their homes or leaves them struggling hopelessly against the greatest odds that agriculture can face, the federal government must come to their assistance as it has been having increasingly to do in North Dakota.

The remedy for either affliction is the same, the control of water, its conservation in lakes and streams and sloughs until it can be used by agriculture or be safely allowed to enter the stream.

Though the principal has long been recognized, little has been done about it in the United States.

Under our form of government, if the matter is left to the states, little can be done. It would be difficult to persuade North Dakota to build a great dam for the protection of those menaced by floods in Louisiana. It would be still more difficult to persuade the Louisiana people to build a dam so far away from their own territory, even with the consent of North Dakota.

Though the two states might come together and effect an agreement on this work in both their interests, there would still be the feeling that Arkansas and South Dakota should participate. And if these were brought in there would be still others to benefit who bore no part of the cost.

Wheat fields in North Dakota and cotton fields in the South are vital to the nation. Happy homes and hopeful men, women and children are even more vital.

The purpose of federal government is to enable the states to work together and this is a project which will benefit everyone in the nation.

Not only will it prevent floods or reduce their menace in the lower river states, not only will it check the advancing course of drought in North and South Dakota and Northwestern Minnesota, but it will bring countless other benefits to the American people.

The creation of new electric power on the upper Missouri is not the least of these. Improvement of navigation conditions on the Missouri and Mississippi is one of the greatest.

Others are the restoration of fish and water fowl to the lakes and streams and the improvement of conditions for upland game.

Disease knows no state boundaries and the failure of water supplies in various areas with consequent use of drinking water more and more difficult to keep pure and clean is bound to cause the rise of those ills that come from bad water. Good water in North Dakota may save lives elsewhere in the United States.

The disposal of sewage is another problem vitally connected with the health of the whole people and this will be made possible with a plentiful supply of water in the district.

That the expense of these necessary factors for the prevention of disease will be greatly lessened by the river diversion project may be a minor consideration but it is of considerable importance nevertheless.

New and fresh water supplies on the upper Missouri tributaries will make easier the solution of the problems of stream pollution.

But the vital human factor of the restoration of hope and happiness to millions of persons in the North and in the South is probably of greater importance than any of these.

And to this the river diversion project will contribute not only through the safety of farms and homes in the South and the improved living conditions in the Dakota area but with the development of electric power, the establishment of new industries through the area it reaches, and added diversification of life which these will bring.

A FEDERAL PROJECT

The disappearance of Devils lake started the Missouri River diversion project. Men watched the recession of its historic waters and were stricken with a sense of loss. They began first to examine the causes for the failure of the water there and out of that study grew the present proposal for a $65,000,000 water conservation movement.

For this reason it is not surprising that hundreds of thousands of persons still consider Missouri river diversion to be a minor, local proposal.

Properly to appreciate the magnitude of the project, it is necessary to stand off for a full perspective of what is suggested.

Briefly there are two matters that claim attention. One is the gradually encoaching aridity from the north and the other is the constantly increasing flood danger in the south.

Because the trees have been cut from some of the upper tributaries of the Mississippi and the Missouri, the waters are no longer held back by leaf mold and thirsty little roots of trees and undergrowth. Because the sod has been removed from wide areas and these have been given over to the processes of cultivation and to crops that are unable to halt evaporation, the water is being lost from these areas.

All these waters find their way eventually into the basins of the Mississippi and the Red River of the North.

In earlier times, melting snow and rain moved slowly out of this upper river territory. It required months for the waters to each the lower river. And some of it, evaporated and precipitated over and over again, may have required years to make the journey to the gulf or to Hudson's Bay.

Today the melting snows or the heavy rains of early spring are carried quickly off and in an incredible short space of time are pouring in tremendous floods into the lower Mississippi.

These floods are increasing and one of the greatest problems of the South is to shackle the mighty river so that it does not become a raging demon bursting into the peaceful countryside and destroying everything in its way.

Billions have been spent on flood control in the South and the method adopted has been to build levees or dikes to hold the water in its main channel and conduct it swiftly to the sea.

But as the river deposits silt along this channel, the river bottom is constantly rising, the dikes have to be built higher and higher and in some cases the river bottom itself has mounted higher than the surrounding country.

Occasionally these dikes or levees break and the destruction is terrific and all the flood control work done in this fashion merely postpones the day of doom for vast areas in the Southern states.

The Missouri river furnishes 7 per cent of the water which thus menaces the South. If this water could be dammed and held back as it used to be held back by grass and tree roots, the flood problem would largely disappear.

It is just such a dam and just such a flood control that is proposed in the Missouri River Diversion Project.

At the big bend of the Missouri in the vicinity of Garrison it is planned to erect a great earth dam or dike which will create one of the largest lakes in the west. Not only will this water be held back but aqueducts will draw off across the water shed nearby vast quan-

tities to be stored in Devils lake and some fifty other lakes in North Dakota and South Dakota.

This control of the waters of the Missouri will make it possible to maintain a more even flow of water throughout the lower length of the Missouri, thus giving aid to transportation there, and it will hold a constant check upon the flood conditions on the lower Mississippi.

In general the control of seven per cent of the waters of the Mississippi would be sufficient to prevent most of the floods on the lower river, for it is always the last drop of water that breaks the dike. If floods continued similar works could be installed in other tributaries of the Mississippi and in the upper Mississippi itself.

The Missouri River diversion project, therefore, is not only one that will restore the ground water levels in a large area of North and South Dakota, but it is a practical solution of the flood control problem of the south.

It is this important fact that makes the project logical for federal undertaking. It would be unfair to ask Louisiana to build this dam and divert these waters. It would be unfair to hang the expense on navigation in the Missouri or the Mississippi. And it would be equally unfair to expect North Dakota to stand the expense at a time when lack of water has left her virtually helpless.

NATION CAN AFFORD IT

The great question before the people of North and South Dakota today is whether the federal government will include in its recovery program or in its permanent policy of agricultural economy and flood control the diversion of the Missouri river.

That question can be answered only by analysis and conjecture but these lead to encouraging conclusions.

There are three great problems that bear upon the subject. First and most urgent, perhaps, is the problem of 15,000,000 unemployed in the nation. Second is the vexing agricultural situation in tne Dakotas and surrounding farm areas, constantly aggravated by increasing drought. And third is the gradually rising danger of disastrous floods on the lower Mississippi.

The Roosevelt administration has declared for a policy of public works as a means of first line attack upon unemployment. This is a most natural and logical policy. If the President were a rancher and the United States were his ranch and the people of the United States were his family, he would today be delighted with the condition of that ranch.

He would find it so rich in resources, so productive along virtually all economic lines that for the ordinary processes of subsistence his family would have to work only about half time. He would, without question, divide the necessary work so that all might share in the duties of the ranch and the hours of work would be short and the rewards generous.

Being a careful husbandman, he would then turn his attention to improving the ranch and to keeping it up. There is little doubt that, with his neighbor to the North, he would do a little ditching so that his boats might be brought to the heart of the ranch through the St. Lawrence Waterway and the Great Lakes. Very probably he would build the Nicaragua canal so as not to have to depend too much on the Panama Canal.

He would build roads and plant trees. He would set aside great areas for game refuges and see that they were stocked.

He would put a few hundred thousand hands to work improving the navigation of all the principal rivers, especially the Mississippi and he would tackle the problem of sewage disposal and river pollution.

If he found that unrestrained lumbering in the pioneer days had so removed the trees in a great northern part of the ranch that melting snow and rain ran swiftly out of the headwaters of the Mississippi and the Missouri leaving those sections increasingly arid and at the same time endangering the lives of millions behind the dikes of the lower river, he would do something about that.

He would find in this latter instance that there was more than enough water constantly coming out of the mountains on the upper Missouri to refill all the dried lakes, streams and sloughs in the threatened northern section and he would find that the control of this water supply would be a perpetual insurance against floods on the lower Mississippi and would greatly facilitate navigation on that river and on the Missouri.

He would discover in work of this sort, in fact, a practical solution of the flood problem which had already cost him billions of dollars and much suffering and death in his family.

If he found that the cost of constructing a dam and of building aqueducts and other works for the impounding of this water and its

distribution over the drought areas amounted to $60,000,000 and that this was only a fractional part of what was being spent for drought relief and the relief of flood suffering every few years, there is little question that he would consider the money well worth the expenditure.

But if he found, for any reason, that unless such work were available for a part of his family they would have to endure painful suffering both in body and in spirit, that some of them would fall ill and die, that some would strave, that some would turn wanderers or criminals, that others would have to leave cherished homes and struggle for a foothold elsewhere against others of his children—then he would surely take immediate steps to put into construction all possible projects for the improvement of the ranch and the welfare of his family.

President Roosevelt is not the owner of the United States. The people of the United States are not his family or his subjects. They are a free people and they have hired him to manage their collective ranches and farms and towns and cities, which they call their nation.

He has undertaken this management in behalf of all the people and they are palpably delighted at his undertakings and his achievements thus far. They have given him greater authority than any manager they have ever hired before, than any foreman the great U. S. brand has ever had.

In North Dakota and South Dakota and in Northwestern Minnesota and probably among all the flood ridden states of the great outh they are earnestly praying that he will include this particular project among those which he is already hastening either to commencement or completion.

And the President may rest assured of their whole-hearted cooperation with him for the advancement of Missouri River diversion.

OLD GHOST LAID

An old ghost has risen again to haunt the Missouri River diversion project.

The statement is again being published in the state that Devils Lake does not want as much water as is contemplated in the diversion plan, that it would submerge 10,000 acres of the old lake bed which are now devoted to wheat growing, an equal area of pasture land, ten miles of improved highway, part of the town of Devils Lake and many summer resort cottages.

It seems to us that Devils Lake should have something to say about that. And it would be interesting to see what would happen at a mass meeting in this community if some intrepid person rose to give this excuse for the abandonment of a project that has such vast possibilities of drought relief and flood control, to say nothing of unemployment relief and navigation improvement.

As for the 10,000 acres of wheat grown in the lake bed, these acres have not been purchased by those who are farming them and they will gain far more by the restoration of the lake than they could possibly lose by the abandonment of these acres. The government's effort to reduce wheat acreage would seem to bear on this point and here, if the estimate is correct, 10,000 acres can be cut off at one stroke.

The same may be said of the 10,000 acres of pasture land and Devils Lake neighbors will find plenty of pasture if 20,000 acres of open water take the place of the wheat and pasture land affected.

The rebuilding of ten miles of improved highway is a trivial matter in a project of this scope but it would give work to a few men who would certainly be glad of the opportunity to earn a living and Devils Lake would reap benefits out of all proportion to the cost involved.

More persons would be put to work removing the cottages and other buildings that would have to be moved and the community could well afford to take a few days off and do the moving without cost to the owners as a part of the great celebration that would take place here if there arose tangible hope that the water levels of 1883 would be restored in Devils lake.

The fact is that Devils lake is a great, unused water basin which would cost billions upon billions of dollars to create if it did not already exist. It is the feature of the project that makes it worth any possible cost in dams and water conduits.

And it is an established engineering fact that the filling of the dry lakes to a high level in this area is the secret of restoring ground waters over the drought territory hereabout.

Devils Lake would profit more than any other community from the success of this project. That is why the plan started here and that is why some other sections of the state opposed the plan until they realized what tremendous benefits would accrue to the whole country.

The city of Devils Lake and the residents in the vicinity of the lake itself will be only too glad to sacrifice their interests for the public zeal if it means no more suffering than has been indicated here. They stand courageously before any prospect of ruin by the historic waters that once rolled in the old lake bed. They can stand a great deal of ruin of this sort.