

WATER IMPORTATION TO WEST TEXAS AND NEW MEXICO

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Governor Cargo, Gentlemen-

Water, Inc. recently held its first annual membership meeting. There were about 400 people in attendance. We could not call this meeting a birthday celebration as the Corporation will not be one year old until month after next. We are proud of our accomplishments to date and I am happy to have this opportunity to tell you about Water, Inc., to discuss our water problems, and tell you of plans for bringing water to west Texas and New Mexico.

In the High Plains of west Texas we have over 70 thousand irrigation wells which annually draw from the ground water sources about 5 million acre-feet of water. This makes it possible for our farmers to produce agricultural products which in 1965 were valued at over 550 million dollars. This agricultural income, added to mineral production and industry, easily represents an income to the area of over a billion dollars a year.

Not much of the 17 million bushels of wheat, 128 million bushels of grain sorghum, and 1½ million bales of cotton produced on the South Plains in an average year stays on the High Plains. I am sure you are aware of the significance to the economy of having millions of bushels of grain and hundreds of thousands of bales of cotton shipped through the ports of Texas; stored in warehouses in the states where it was produced; or processed in plants located in central, east or south Texas or New Mexico or Oklahoma. Thus, these states and the whole nation have a stake in the prosperity of the High Plains area.

Producing this billion dollar income in 1964 took 26 million dollars worth of fertilizer and about 40 million dollars worth of gasoline in the operation of farm machinery. We are talking about a sizeable slice of the nation's agricultural economy.

The Texas State Water Development Board has established through its preliminary study that there is not sufficient water in Texas to satisfy the states predictable and foreseeable needs. The effects of insufficient water on the farms, the urban areas, and industry are well known to all of us. The towns on the High Plains that are having difficulty getting enough water or the farmer whose irrigation wells are drying up are well aware that in their area the situation is getting critical. You are all familiar with facts of the decline in the ground water levels in the Portales Valley of New Mexico and the fact that irrigation has essentially ceased in part of the Valley.

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In the general vicinity of Lubbock, Texas, where large scale irrigation developments first occurred on the southern High Plains, and where total groundwater withdrawals have been the largest, the process of groundwater depletion, and the decline in groundwater level is well advanced.

Recharge of water to the Ogallala Aquifer is only a minor fraction of current withdrawals. The rate of withdrawal may increase as industry expands and new land is brought under irrigation. In this area, most of the irrigation must stop within the foreseeable future unless imported water supplies are made available to the irrigator.

Conservation practices can extend the time for depletion of our water and the proper agencies are hard at work enforcing conservation measures and seeking new ways to conserve water. For example, one of the utility companies has had a generating plant in operation in Amarillo for several years using sewage effluent for plant water. A plant is being designed for construction by a public utility company in the Lubbock area which will make use of the sewage effluent from the city of Lubbock. We are fortunate in Lubbock in that the effluent has been used for many years for irrigation purposes. It has been accumulating in the ground, particularly in the winter months. Shallow wells will be drilled to recover this water as an additional source for the proposed new steam electric generating plant. This is just an example of the steps that are being taken to make maximum use of what water we have.

The Texas Water Development Board has done a tremendous job in the time it has been in existence. It is limited, however, as New Mexico or any other state is limited and looking across the boundaries of the state seeking new water sources is probably beyond what the Board could or should do. The federal agencies are not so limited and neither is Water, Inc.

This fact is increasingly important as we believe studies now under way will prove conclusively that even if the state of Texas could agree to supply $4\frac{1}{2}$ million acre-feet yearly from Texas sources, this would be only a starter. The system of importing water to our area must be designed to meet the total requirement of 18-20 million acre-feet annually. Thus, it is absolutely imperative to the success of this plan that an out-of-state source be assumed. This interstate and interbasin transfer of water is definitely a job for the federal agencies. It is an area where the states will certainly be called on for data, for suggestions and for assistance. The local interests will be called upon and we must have the required data available and in presentable form if we are to expedite this program.

We are looking East for our water. The surplus flood waters of the Mississippi now appear to be our most practicable source. We believe this water can be brought to the High Plains at a cost we can afford to

pay. Everyone along the import route will benefit and Water, Inc. is actively seeking their assistance in making this import program a reality.

Water, Inc. is an organization of people who recognize the need for additional water supplies for the High Plains area. It is a nonprofit corporation created to be a spokesman and leader in the long and difficult task of securing additional water for users in the Panhandle of Oklahoma, the High Plains of Texas and in eastern New Mexico. This means agricultural water as well as water for municipal and industrial use. A supplement to the dwindling water supply on the High Plains is necessary to the economic well-being of the area. It is a matter of the utmost urgency.

We recognize that we must constantly work to keep the public aware of our need for additional water. We know, too, that if we are to be successful, we are going to need the help of all of the friends we can muster - not just the people in the High Plains area. New Mexico, Oklahoma, and Texas must join together as users who will derive direct benefit from the water. Louisiana which will benefit from creation of an import route through that state, should join us as soon as the benefits to its people become apparent. This public information program and creating an awareness of the problem is one task that has been undertaken by Water, Inc.

When federal agencies such as the Bureau of Reclamation or the Corps of Engineers begin an investigation for a project, usually a reconnaissance report is prepared. The reconnaissance report on water importation into west Texas and New Mexico is now under way. A joint study by the Bureau and the Corps of Engineers financed by almost $\frac{1}{2}$ million dollars of federal funds is now being prepared. Historically, preparation of the reconnaissance report has required anywhere from one to several years. If after the report is in and the project appears justified, and (this is important) if sufficient interest is evident, Congress is asked to authorize a feasibility investigation.

Representing this local interest and overcoming public apathy is another task of Water, Inc. Speeding up the process is important to all of us as our water production potential is being reduced yearly. Working with local business leaders to insure that our political representatives are aware of our interest is another function that Water, Inc. can accomplish for us.

If the feasibility report indicates the benefit to cost ratio is favorable, then Congress may authorize the project. The federal government must also have assurance that the local sponsors and beneficiaries are willing to contract for repayment of reimbursable costs. Once the task is authorized, then funds must be voted for construction to begin. From planning to

completion of construction is a long, drawn-out process. Normally, a 25 to 30 year job. Our concern is that all agencies are aware of the urgency with which we view this project and that they continue to press on with the job.

The strength of Water, Inc. is measured by the number of people it represents. Supplemental water sources for our area can be developed only if we can demonstrate a need and speak with a strong voice in those places where our story needs to be told. We have about 1500 paid-up members now and we are continuing to grow. I think I would be remiss if I did not offer each of you now the opportunity to join our organization.

The Texas Water Development Board projection of west Texas requirements for importation of water for irrigation shows that by the year 2020 the High Plains area will require 15-1/10 million acre-feet annually. The eastern New Mexico area will require 3-1/10 million acre-feet by the year 2020. Thus, we expect a demand in excess of 18 million acre-feet by 2020. The magnitude of this requirement fairly well establishes the fact that we must investigate all possible sources to water and all alternative import routes.

The alternative routes which show the most promise are shown on this chart. The northernmost route is by diversion through the White River up the navigation channel now being constructed on the White and Arkansas to the Kerr Reservoir, then by canal to the Eufaula Reservoir, then by canal along the divide south of the Canadian River to the Texas High Plains. This route will offer maximum benefit to Arkansas and Oklahoma along the route and will reduce the lift required as we take off considerably above the mouth of the river. It is also the shortest route to the High Plains. It will probably be the most difficult route to use as the downstream users will be apprehensive of draining off "their" resources.

The next route is to take off at the start of the Atchafalaya River Floodway, move the water up the Red River to the mouth of the Sulphur River, then up the Sulphur to the Cooper Reservoir, then by canal generally along the divide between the Red River Basin and the adjoining basins on the south. This route will benefit Louisiana and east Texas as navigation on the channel would be feasible and the Fort Worth-Dallas area would benefit by aid to navigation and increased water supply.

Another route is to take water from the Atchafalaya Floodway at a point below where it takes off from the main stem river, then up the Sabine River to Lake Tawakoni, then by canal to join the previous route. Navigation potential and benefit to Louisiana and east Texas is great by using the Sabine, the same benefits to the Fort Worth-Dallas area will accrue as were present in the previous route discussed.

Other routes make use of gravity flow canals across southern Louisiana and Texas to divert flood waters from the Atchafalaya Floodway. The route would then be up the Brazos River or the Colorado River or both. These routes would provide navigation and irrigation benefits to Louisiana and the Gulf Coast area of Texas. It would provide additional water for Houston and the central portion of the state.

The Trinity River is also being considered as a possible import route.

The imported water would be pumped upstream along the various routes through existing or authorized reservoirs or through potential reservoirs and canals which would be constructed. Power plants and pumping stations would be built as required to lift the water about 3500 feet from sea level to the High Plains for storage and distribution. We are thinking of accomplishing this task in phases with the first phase providing about 1½ million acre-feet per year for New Mexico and 5½ million acre-feet for west Texas. This will be increased to a total project requirement of about 18 to 20 million acre-feet yearly by the year 2020.

The final route or combination of routes to be used, is the route which will provide the best benefit to cost ratio in the feasibility studies of the Corps of Engineers and the Bureau of Reclamation. The engineering problems to accomplishing the movement are not nearly as difficult as the "people problems" which must be overcome. We are working on those and are confident that they will be solved in timely fashion.

Once we get the water to the High Plains, what then? Who has responsibility for contracting for the water? Where is it stored for use? What local distribution system will be best? The time of greatest need to the irrigator is in early spring and summer with about 25 percent of his need in August. Economics will demand, however, that the pumping system be designed for practically year-around operations. We must store water near the source or upstream from the intake in order to use the flood run-off and provide enough water for pumping year round. The question of underground storage versus surface storage at the terminal location will have to be answered. We do have a "can do" attitude and are confident we will find acceptable solutions to these perplexing problems.

The state of California is completing a project which gathers water on the Feather River behind Oroville Dam, from where the water is released to flow by gravity to a gathering basin at about sea level just east of San Francisco. From this basin the water is pumped up several hundred feet to the west side of the coast range of mountains. The floor of the San Joaquin Valley rises in elevation toward the South, but the water is moved in that direction by gravity flow in an open canal following the contour of the low mountain range. As the elevation of the valley floor meets the elevation of the canal, another pumping station lifts the water

to another canal at a higher elevation. This process continues for a distance of about 425 miles to the Tehachapi Mountains where, in one lift, the water is pumped 1900 feet to the top of the mountain. The total lift from the basin just east of San Francisco to the top of the Tehachapi Mountains is just about 3165 feet. The distance involved is about 425 miles and the quantity of water is about $4\frac{1}{2}$ million acre-feet each year. These very nearly approach the parameters of our water import scheme. California is in the process of showing us it can be done because they are doing it.

We have heard it said recently that some people oppose taking water from another basin and moving it to Texas. Their statement is that they do not have enough water for their potential needs. I think that these friends misunderstand our intention. We recognize that the people in whose area the water is located have first claim on that water. The water we want is that water which is surplus to their needs and which flows daily into the Gulf of Mexico without further benefit to anyone now or in the foreseeable future. We do not wish to divert what is being used. We want the people of the Mississippi Valley to join us in developing this resource for their use and for our use - for the benefit of us both - and for the benefit of the whole nation. We recognize that before any export of water from one basin to another becomes feasible, certain criteria must be satisfied. These include:

1. There must be a surplus of water over the needs in the source basin.
2. There must be a need for this surplus water in another basin which can be filled at a cost which does not exceed the local cost of the water.
3. There must be some advantage to both the exporter and the importer.
4. Operational plans must be agreed on to include amount of water to be withdrawn, when it is to be withdrawn, and numerous other regulatory measures.

I do not wish to leave anyone with the impression that I believe the economy of the High Plains area is going to stagnate because we don't get water here next year or within the next few years. Our economy is too stable for that to happen. The scope of the job we have undertaken is of such magnitude, however, that if we are to reap any benefits within the next quarter century, we must begin to show progress now.

The federal agencies are working under congressional direction "To Determine Physical and Economic Feasibility of Importing Water to West Texas and New Mexico." This means determining among other things, source of water, best

delivery routes, source of power, staging requirements, benefits expected, costs and facility design.

The Texas State Water Development Board is cooperating with federal agencies to the maximum extent possible. We are the local interests - we are the users - we must establish the requirement - we must continue to urge completion as soon as possible.

There are many, many questions which as yet have no answer but which must be answered before this project has a chance of success. Just to mention a few:

What are the practical limits of the area to be served?

What state and federal legislation is going to be required?

What are the cost factors going to be?

What type of project financing and reimbursement will be most advantageous?

What can be done about the 160 acre limitation?

What type of storage is best and where?

What type of local distribution system is necessary?

Some of these questions that must have answers provided by the local interest are those by the state or federal agencies. Our role as the local interest is only limited by our ability to demonstrate a determination of purpose, unity of effort and technical expertise competent to meet the challenge. We must and will get our share of the work done and we need all the assistance we can get. We know that the economic aspects are favorable because the cost of capital improvements and recurring operational costs can be paid by the users and by taxes to be collected from those on the High Plains area who will benefit directly.

We recognize the difficulties and know that time, patience, cooperation and understanding will be required by all of you here, by all the residents of New Mexico, all Texans and all Americans. We want everyone to be aware of our determination to make this plan a reality. It can be and should be and if this area and the affected states are to reach their maximum potential, it must be. Your acceptance of this problem as your problem and acceptance of a share of the responsibility is a major step in our success. It is my hope that you will assist, that you will be cooperative and that each of you will contribute to helping find a way to solve the many problems and move the many roadblocks that will be put in our way.

Thank you for having me on your program.