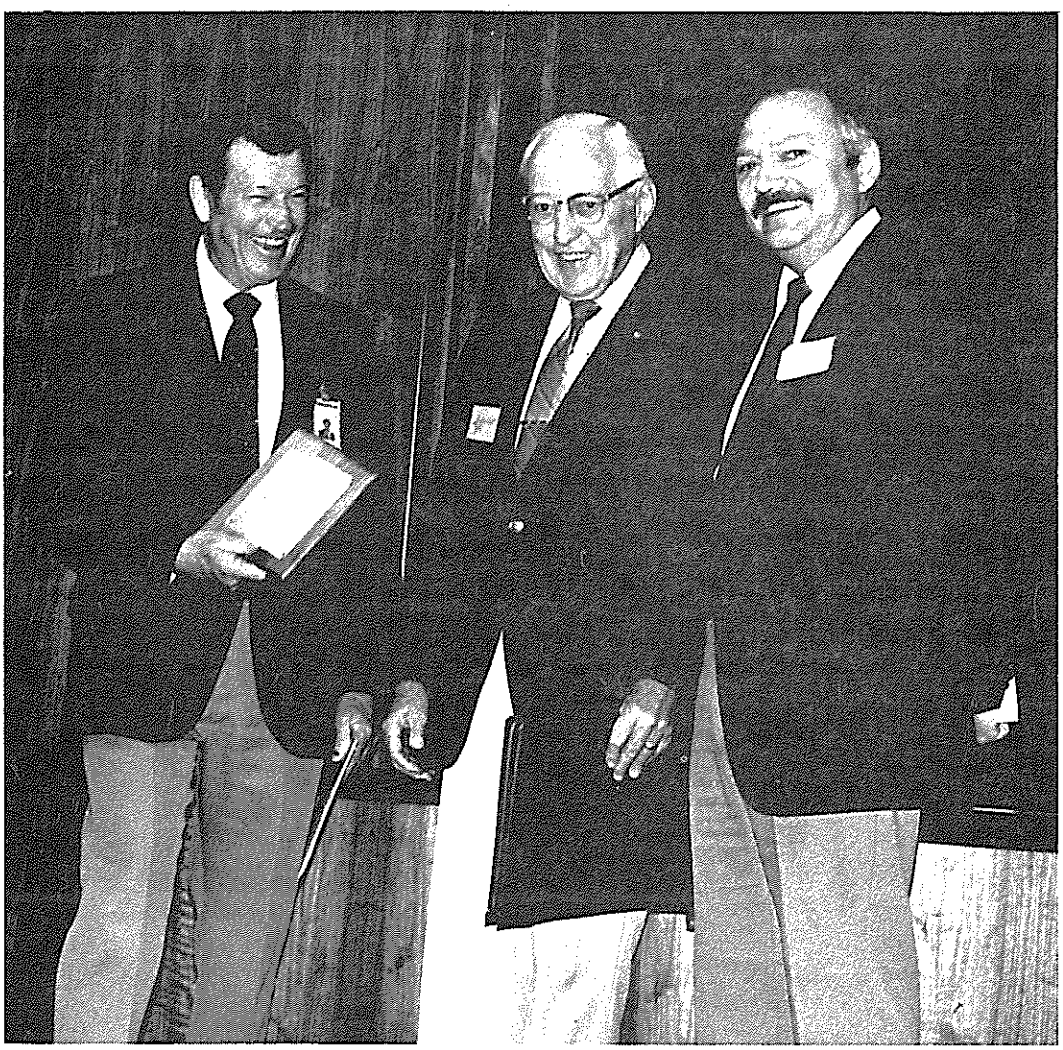

The institute's long and valuable association with New Mexico State University President Gerald W. Thomas was recognized at the conference. Dr. Thomas (left) receives a plaque of appreciation from Dr. Ralph Stucky, former WRRI director, and Dr. Thomas Bahr, WRRI director. In addition, members of New Mexico's congressional delegation presented him with letters of appreciation, which are printed on the following pages. Dr. Thomas, who will retire from NMSU in July, has been a staunch supporter of water research in New Mexico.

STATE OF NEW MEXICO

OFFICE OF THE GOVERNOR

SANTA FE

87503

TONEY ANAYA
GOVERNOR

April 12, 1984

RN 1002

Dr. Gerald W. Thomas
President
New Mexico State University
Box 3Z
Las Cruces, New Mexico 88003

Dear President Thomas:

On behalf of the citizens of this state, I want to commend you for the outstanding leadership you have provided New Mexico State University during your tenure as its president. Your contribution to New Mexico and the nation is magnified by those under your direction in the past fourteen (14) years - NMSU's graduates, faculty and scientists.

The endowed Thomas Chair in Food Production and Natural Resources is testimony to your personal contribution in the International fields of agriculture, ecology and resource management. It is fitting that your contribution in these areas is being recognized at the Annual New Mexico Water Conference. I know that those gathered at the conference will join me in honoring you for the outstanding personal and scientific standards you have set for New Mexico.

Sincerely,

TONEY ANAYA
Governor

TA/wps/mac

MANUEL LUJAN, JR.
1ST DISTRICT, NEW MEXICO

COMMITTEES:
INTERIOR AND INSULAR AFFAIRS
SCIENCE AND TECHNOLOGY

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House of Representatives
Washington, D.C. 20515

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April 24, 1984

Dr. Gerald W. Thomas
President
New Mexico State University
Las Cruces, New Mexico 88003

Dear Dr. Thomas:

I want to join your many other friends in wishing you well when you complete your tenure as President of New Mexico State University in July.

The growth and development of the University, during the past 14 years, is well documented. You have compiled a record on which you personally can be proud and one which will mean much to the University and the state of New Mexico for many years to come.

Future generations will benefit because of your life-long interest in natural resources management, and for the leadership you have shown in international food programs, and in the unending attack on world hunger.

I am personally aware of your leadership in the area of water resources management and in your efforts to expand water resources research programs. The fruits of your labors in this particular area will mean much to us for many years to come.

Even though you will be stepping down from one leadership position, I am told that you will be staying in the Las Cruces area and will be serving in various advisory roles. This is good news for all of us, who undoubtedly will continue to call on you for advice and counsel.

I wish you every success in your future endeavors.

Best personal regards,

Manuel Lujan, Jr.

MLJ:dp

JOE SKEEN
2ND DISTRICT, NEW MEXICO

COMMITTEES:
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Congress of the United States
House of Representatives
Washington, D.C. 20515

April 26, 1984

Dr. Gerald Thomas, President
New Mexico State University
Box 3Z
Las Cruces, New Mexico 88003

Dear Gerald,

It will be hard to imagine New Mexico State University without Dr. Gerald Thomas. The two have long been synonymous and will continue to be in the minds of New Mexicans for years to come.

There is no doubt that our water is our most precious resource and the one that is becoming increasingly important to our continued growth. Because of your leadership and abilities, our state has continued to grow in our understanding of the need for conservation and wise use of our water.

Your contributions in this field make up a large part of your living legacy to our state. Please know that what you have done is appreciated and will continue to be appreciated for years to come.

I wish you all the best, my friend, in the years to come. You served your state well. Enjoy your retirement.

Sincerely,

Joe Skeen, M.C.

KEYNOTE ADDRESS

Dr. Gerald W. Thomas
President, New Mexico State University

I am pleased to welcome each of you to the 1984 Water Conference and to make a few opening comments. I will focus on three major points. One, New Mexico State University's (NMSU) involvement in water resources research and development in New Mexico; two, what have we learned about water; and three, where do we go from here?

The first point I'll discuss is NMSU's involvement in water activities. In 1890, New Mexico State University, then the New Mexico College of Agriculture and Mechanic Arts, was designated as the land grant college for the state of New Mexico. Part of that charge was to establish an Agricultural Experiment Station. You can't talk about agiculture in New Mexico without talking about water. Consequently, the early research of Fabian Garcia, as director of the Agricultural Experiment Station, and other faculty members was aimed largely at higher crop production through the proper application of water. Even the early range and animal research recognized that the effective use of our limited rainfall was the key to productivity of livestock products.

However, the first major effort to recognize the importance of water as a major thrust of the institution was instigated by Dr. Ralph Stucky and the Department of Agricultural Economics. Starting with a seminar in 1956, our institution took the lead in inviting distinguished speakers and organizing conferences related to water resources. The first eight annual water conferences, 1956 through 1963, were considered by Dr. Stucky as the forerunners for the establishement of the Water Resources Research Institute.

I remember well the lengthy debates which swept the nation as legislation was being planned to establish water research institutes in each state. Here in New Mexico, there was no question. NMSU would be the institution and would take the lead. However, in other states there were active debates between land grant colleges and other universities and various approaches were established to the institute thrust. I was at Texas Tech at the time and, for once, joined with the University of

Texas at Austin to combat the tremendous political pressure placed on Congress by Texas A&M. In any case, both Texas and New Mexico came out with water resources research institutes, statewide in scope, and involving other universities where talent was available to look at the water issues.

Our own institute has been recognized through the years as one of the leaders in format, operations and research programs in the nation. This recognition is the result of the initial leadership of Dr. Ralph Stucky and the follow-up guidance by Professor John Clark, Dr. Garrey Carruthers, Dr. Tom Bahr, Dr. George O'Connor, and others. Two groups, always working behind the scenes, were critical to the institute's development. One was a group of statewide leaders who served as an advisory committee to the institute, and the other was a group of technical specialists at several universities who provided guidance and screening for the research projects.

Throughout the years we always have maintained close contact with State Engineer Steve Reynolds. (It is my understanding that Steve has attended or participated in all but two or three of the 29 Annual Water Conferences.) This state has indeed been fortunate to have had Steve Reynolds at the helm in the State Engineer Office.

During this last year, and in a number of previous years, we have seen congressional challenges for federal support for the Water Resources Research Institutes. This year a bill was passed by both the Senate and House and sent to President Reagan for signature. The president chose to veto the bill which would have terminated the federal support for the statewide institutes. Fortunately, with our encouragement, our New Mexico delegation joined with senators and representatives from other states to overturn the president's veto. The Water Resources Research Institutes are alive and well and will continue to perform a service for this state and the nation.

Even though federal legislation laid the groundwork for statewide research institutes, we should point out that the state of New Mexico has consistently provided strong state support. Without the commitment from the state, we could not approach the massive task that lies ahead.

Now let's look briefly at the second point--What have we learned about water? Please allow me to summarize.

1. Water is our most critical and most important resource. Water is more critical in the long term than either land or energy. We can and must find solutions to the energy problem. We can and will determine ways to operate with a smaller relative land base, but the amount of water in our system is fixed. There is no substitute for water. Water is a renewable resource. Man uses it as it moves through the hydrologic cycle, usually pollutes it to a certain extent, and feeds it back into the system. While we can reduce the dependence upon water by increasing the efficiency of water use, there is a very limited supply which must be husbanded with great care as the world population increases.
2. As our standard of living rises, so does our per capita use of water for domestic, industrial and agricultural purposes. An individual needs only a small amount of water for drinking, but water use for other purposes rises rapidly with the level of income. If we could project the water use requirements of the average American to the world-wide populaton of 4.7 billion, we would see immediate and severe shortages worldwide. And, keep in mind that last year we added 83 million more people to the population base, so our plans for today must be projected into the future where worldwide population eventually may level off at between 10 and 12 billion individuals.
3. Our largest per capita water requirement is for food. Depending on how you measure this need, it is easy to associate one ton of water with a loaf of bread, and as much as 100 tons of water on rangelands with a production of one pound of beef. In the agricultural sector, keep in mind that this water is used as it passes through the hydrologic cycle. Often, other businesses and municipalities have a shot at the same water at another point in the cycle. However, such statistics provide a convincing argument for better water management in the food sector. And,

as I stated in my report on sub-Saharan Africa, it is time to assemble better data on such water use and to design systems for food production which "value water with the concern of the desert nomad."

4. If you take a very limited and strictly economic approach to allow water to migrate to its highest value use, then agriculture can no longer compete against municipalities, business and industry. To designate water use in the future to move only to the highest-value activities eventually would lead to serious problems of food and fiber production.
5. Water is ubiquitous; that is, no place on earth is wholly without water--although I have personally visited some places on earth with no "measurable" precipitation.
6. Water is a heterogenous resource. Water is found in liquid, solid and gaseous states, and all of these forms are important to the rate of movement of water through the hydrologic cycle.
7. We cannot discuss water without examining both the quantity and quality aspects. Water shortages are one problem--water pollution is another harder and more serious problem.
8. From a world perspective, it is not possible to separate the water resource from climate because evaporation, transpiration and precipitation are a part of the climate complex. Decisions made in this decade about our energy options will have a profound effect on future climate and water supplies. For example, the burning of fossil fuels continues to contribute to the carbon dioxide loading in the upper atmosphere and to the potential for climatic change. Granted, there are still opportunities for genetic engineering and crop adaptation to more arid environments, but any significant shift in the climate would work to the disadvantage of the United States and to the potential advantage of the Soviet Union. And, while we may overcome water shortages by a certain amount of genetic engineering to improve the use of water for cultivated crops, the impact on the vast uncultivated land base could be much more difficult to cope with.

Now, let's look more specifically at the third point--Where do we go from here? In the first place, it should be obvious that much more research must be committed to our water problems. The rush to the Sun Belt may come to a screeching halt after a decade if we do not plan now to meet our future water needs.

We must learn to measure everything that we do in units of water and become more conscious of water in all aspects of our daily life. Unfortunately, too much of our research is not now designed with water as a constraint.

We must step up our research on photosynthesis not only to capture more energy from the sun by this process but also to determine more effective ways to increase the efficiency of water in the food and fiber sector.

Lastly, we must find ways out of the water law and litigation problems that are increasing daily as water becomes more and more critical to our livelihood. I was particularly impressed with the statement in Megatrends by John Naisbitt. He said, "Lawyers are like beavers. They get in the mainstream and dam it up." Because the theme of this conference is "Water Law in the West," I do not want to make a blanket condemnation of lawyers, but my impression of the present litigation problem in this state is that the El Paso lawyers are like beavers--they certainly got into New Mexico's mainstream and dammed it up! I am very suspicious and concerned that future decisions about our water resource ultimately will be decided on legal grounds and not on the basis of logic or proper concern for the distribution of water in time or in space. We are hung up on legal precedent. Perhaps there is no way around this, but I enter this conference with concern.

It is my hope that those participants whom we have invited to the conference this year will help us find not only a legal route to our important water future but will help us design the more important scientific, technological, social and political solutions to the problem we now face. Our future is indeed tied to the decisions we make today about water--our most important and valuable resource.