

WATER RESEARCH AND DEVELOPMENT IN NEW MEXICO

Dr. R. B. Corbett^{1/}

You know we are pleased that you are here for this Fourteenth Annual New Mexico Water Conference. It has been my pleasure to welcome those attending most of these fourteen conferences. My only wish is that many more were here than this approximately 250 present this morning. You are always welcome to New Mexico State University and we hope you may have time to visit with some of our faculty and students and to see the campus and the several new buildings opened since last year.

Dr. Stucky's invitation to appear on this program reminded me that, following my first trip around the state after joining NMSU, I had placed water as New Mexico's chief problem. I plead guilty to having made that statement and I repeat it now, water still is New Mexico's chief problem.

The U. S. Senate Select Committee, in its 1961 report on the 20 major river basins in the Continental United States, pointed out that the Rio Grande-Pecos Basin had less water in relation to projected needs of any of the 20 U. S. river basins. The Colorado River Basin was listed as second shortest of water. Eighty percent or more of New Mexico is located in these two basins.

Much water research and development have occurred in New Mexico in these past fourteen years, but much more needs to be done. This water conference has been continued under the leadership of the excellent Statewide and University Water Conference Committee with Ralph Stucky as the chairman. Several of these committee members have attended most all of the annual conferences and the planning meetings held for each conference. Two statewide committee members who have no connection with any official agency and who have attended practically every conference and every planning meeting are Rogers Aston of Roswell and Lloyd Calhoun of Hobbs. Three other state committee members who have contributed much, both in attendance and contribution of information, are E. O. Moore of Roswell, Fred Thompson and Steve Reynolds, both of Santa Fe. To these men and all the others on the Statewide Committee and the University Committee we offer our thanks.

I will just look at the "forest" of important water resources problems and/or opportunities and comment on them briefly: some of the "trees" may be considered here today by men who know the details of these subjects. Their analysis will be expert. You should believe them. Mine will be from a layman's view.

^{1/} President, New Mexico State University

Water Conference - One of the big steps in New Mexico water development through the past fourteen years has been the continuation of this conference. It has supplied a continuing forum for the discussion of the water issues, developments and accomplishments within this state. The annual proceedings of this conference have become a highly useful reference for many in New Mexico, the United States and even in other countries around the world. The establishment of the desalting plant at Roswell by the Office of Saline Water received support from this conference by the passage of a resolution which requested the location of one of the five U. S. demonstration plants in this state.

Water Research - Another significant accomplishment is the establishment of the Water Resources Research Institute. The New Mexico Institute was the first of the 50 state institutes established in the nation under the Water Resources Research Act of 1964. These Water Research Institutes were established to greatly increase the U. S. and state research effort in all water resource areas and to train students to take their place in forwarding the research and development in these areas. Much credit must go to Senator Clinton P. Anderson for his leadership both in the original writing and in the final passage of the Water Resources Research Act. The New Mexico Water Research Institute is officially a part of New Mexico State University. However, three higher educational institutions, The University of New Mexico, Institute of Mining and Technology and New Mexico State University are cooperating in the research effort through memoranda of agreement. We hope that others of our state higher educational units may soon join this research effort in their special fields of competence.

The Tularosa Basin has always interested me because of its potential as an important water resource area. Large quantities of saline water are in storage there. A research project involving the State Engineer Office, the U. S. Geological Survey, the Institute of Mining and Technology, and New Mexico State University, is now under way in cooperation with the Federal Office of Saline Water. Many persons predict that this research will help make some of this vast water resource available for human consumption and economic development.

Further development of the Roswell saline water plant is now under way with the recent announcement that about one million dollars will be used to install test facilities at Roswell where companies can test desalting machinery. The earlier demonstration plant has not been successful, partly because the Roswell water is the toughest in the U. S. to process. These new commercial tests may make it possible to greatly advance our knowledge on desalting and to develop machines so potable water will be much more available and cheaper than is now possible.

Cloud seeding - Our Civil Engineering Department and the Physical Science Laboratory on this campus are conducting research and development work in cooperation with the Bureau of Reclamation and other

agencies to increase snow fall in the higher elevations near Cuba, New Mexico. There is much promise in this particular project. Increased snow fall in the higher elevations would result in higher water runoff which would be available for all uses.

Water importation has been discussed in this conference in previous years. Importation of water into New Mexico and West Texas is vital to the economy of these areas. Unless water is imported from some source before 1980 or 1985, some important reductions in irrigated land and total income of that area will result. More and more leaders are beginning to believe that massive water importations can be and probably will be accomplished. The engineering work is now under way to determine the feasibility of tapping Mississippi river water. Many of the real important considerations, however, will be in the social, political and economic areas. These, along with the engineering, will be factors in whether or not large transfers will be approved by the people involved.

Evaporation control has been tried. To date it has not been highly successful but is deserving of further research.

Excessive non-beneficial uses - Phreatophyte control is now being attempted on quite a large scale in both the Middle Rio Grande and Pecos watersheds. Control or elimination of the salt cedar would add much to our present available water supply. Much progress is possible in returning some of this non-beneficially used water to productive uses.

Irrigation efficiency - Lined ditches, underground pipes and sprinkler irrigation methods are all being developed and installed to reduce water losses and lower costs. Plant research is being proposed and some is actually under way to develop plants which require less water per unit of production. Similar breeding and selection in cattle and sheep has resulted in real gain in pounds produced per unit of feed both on the range and in the feed lot. Reducing the water to produce a unit of product would stretch our total water supply and reduce costs.

Save water - Our present water is the cheapest water we will ever have. Every effort should be made to conserve this resource and to improve the income from the use of our present supplies.

Research - Funds spent in research produce very high returns per dollar of expenditure. Since water is vital to New Mexico, the west and the nation, we need to make greater investments in research than is being done at present. Investments now would produce results in time for use by decision makers in the future resource developments.

Again, I want to say we are glad you are here to consider our vital water issues. We are looking forward to seeing all of you, and hopefully many more, here for the conference next year.

Thank you.