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WRRRI Report No. 112

**PROCEEDINGS OF THE TWENTY-FOURTH
ANNUAL NEW MEXICO WATER CONFERENCE**

The New National Water Policy: Will it Work in New Mexico?

May 3-4, 1979



New Mexico Water Resources Research Institute

New Mexico State University • Telephone (505) 646-4337 • Box 3167, Las Cruces, New Mexico 88003

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New Mexico State University
Las Cruces, New Mexico

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PREFACE

The 24th Annual Water Conference was held on May 3 and 4, 1979 to discuss "The New National Water Policy: Will it Work in New Mexico?" The format of speakers and open panel discussions provided contrasting views and ample opportunity for debate on this controversial topic.

The papers included in this volume are edited versions of the formal presentations and transcripts of the panel discussions. As a preview of what you will find in these "Proceedings" here are some representative quotations.

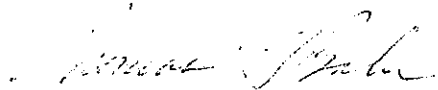
"There is an old adage about water in the United States. Local governments have all the problems, state governments have all the authority, and the federal government has all the money. The National Water Policy is designed to attack that problem."

"Some would argue that we could dispatch with the theme of the conference rather quickly, that is, respond to the question-- 'The New National Water Policy: Will it Work in New Mexico?'-- with an unqualified 'No!'"

"...for every complex problem there's a simple answer, and it's wrong. We need to look at serious questions, and we need to do it while there is still time."

"Embedded within the \$15 billion in economic loss suffered in the West in the '76-'77 drought was a portent of the next century, if our nation fails to address and reform the management of our water resources."

This Water Conference was once again a success due to the thoughtful contributions of the speakers and discussants toward understanding the directions our nation is taking to produce a National Water Policy.



Thomas G. Bahr
Director

Funds required for publication of the Proceedings were provided by registration fees, the United States Department of the Interior, Office of Water Research and Technology, and by State appropriations to the WRRRI.

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For providing the munchies for our Social Hour, we'd like to give special thanks to:

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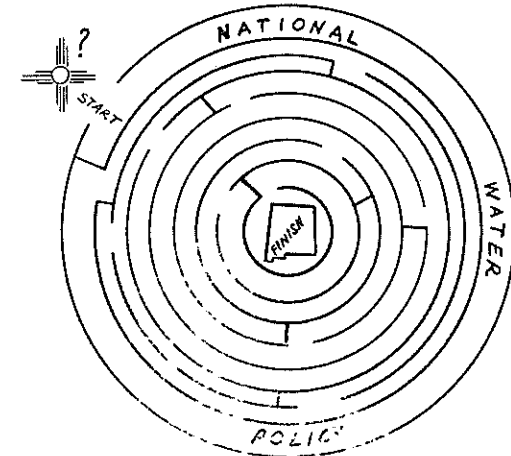
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**THE 24TH ANNUAL
NEW MEXICO
WATER CONFERENCE
MAY 3-4, 1979**

***"THE NEW NATIONAL WATER
POLICY: WILL IT WORK
IN NEW MEXICO?"***



**Carbine Auditorium
Anderson Hall
(Physical Science Laboratory)
New Mexico State University
Las Cruces Campus**

Thursday Morning - May 3, 1979

8:00-9:00 REGISTRATION
 Stucky Hall
 Water Resources Research Institute

9:00-9:10 HERDING TIME
 Carbine Auditorium
 Physical Sciences Laboratory—Anderson Hall

9:10-9:30 OPENING REMARKS AND INTRODUCTION OF SESSION MODERATOR
 Thomas G. Bahr, Director
 New Mexico Water Resources Research Institute

WELCOME TO THE UNIVERSITY
 Gerald W. Thomas, President
 New Mexico State University

PRESENTATION OF GOVERNOR'S PROCLAMATION
 Jim King, Deputy Secretary
 New Mexico Department of Natural Resources

COMMENTS BY SESSION MODERATOR
 Jo Carol Ropp
 League of Women Voters

9:30-9:50 OVERVIEW AND CURRENT STATUS OF NATIONAL WATER POLICY
 Gerald Seinwill, Deputy Director
 U.S. Water Resources Council

9:50-10:00 RESPONSE
 Steve E. Reynolds
 N.M. State Engineer
 N.M. Interstate Stream Commission

10:00-10:20 WATER BREAK

10:20-10:45 WATER CONSERVATION AND NEW APPROACHES TO AUGMENTATION: VIEWS FROM THE U.S. SENATE
 Hal Brayman
 Professional Staff
 U.S. Senate
 Environment and Public Works Committee

10:45-11:10 USES OF NEW MEXICO'S SALINE WATER: VIEWS FROM AN ECONOMIST
 Garrey E. Carruthers
 Professor
 Ag. Econ. and Ag. Bus. Department
 New Mexico State University

11:10-12:00 PANEL DISCUSSION AND AUDIENCE PARTICIPATION
 (Panel consists of previous speakers and moderator)

12:00-2:00 BAR B QUE LUNCH AND EXHIBITS
 Livestock Judging Laboratory

SECOND SESSION

2:15-2:20 INTRODUCTION OF SESSION MODERATOR
 COMMENTS BY SESSION MODERATOR
 Col. Bernard J. Roth
 District Engineer
 Albuquerque District
 U.S. Army Corps of Engineers

2:20-2:45 INSTREAM USES AND RECREATIONAL VALUE OF WATER
 Berton L. Lamb
 Cooperative Instream Flow Service Group
 U.S. Fish and Wildlife Service

2:45-3:00 RESPONSE
 Paul R. Turner, Assistant Professor
 Fish and Wildlife Sciences Department
 New Mexico State University

3:00-3:20 UPDATE ON SECTION 208
 Thomas Lera, Section Chief (Oklahoma and New Mexico)
 Water Programs Branch
 U.S. Environmental Protection Agency

3:20-3:35 RESPONSE
 William P. Stephens, Director
 New Mexico Department of Agriculture

3:35-4:00 WATER BREAK

4:00-5:00 PANEL DISCUSSION AND AUDIENCE PARTICIPATION
 (Panel to consist of previous speakers and moderator)

THIRD SESSION

6:00-7:00 SOCIAL HOUR - NO HOST

7:00-9:00 BANQUET - HOLIDAY INN DE LAS CRUCES
 Speaker
 M. Wayne Hall, Chairman
 Missouri River Basin Committee

FOURTH SESSION

Friday Morning - May 4, 1979

9:00-9:30 Assemble at Stucky Hall for Field Trip

9:30 FIELD TRIP - Buses Leave
 Tour to include stops at:
 Elephant Butte Irrigation District Wells
 NMSU Plant Science Farm - Trickle Irrigation
 Stahmann Farms - Irrigation Scheduling

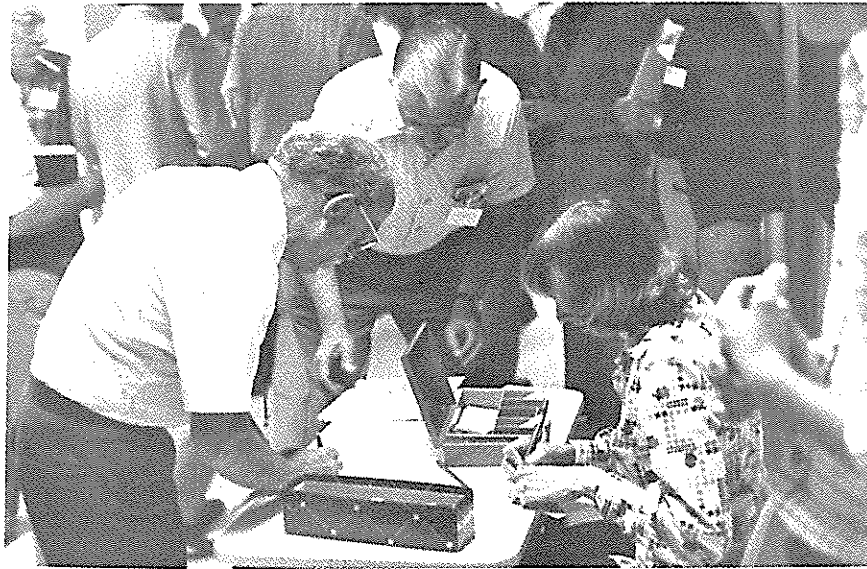
12:00 ARRIVE BACK AT STUCKY HALL

12:00-12:30 STATEWIDE WATER CONFERENCE ADVISORY COMMITTEE HEARING

There is a \$15.00 registration fee which includes Bar B Q lunch and a copy of the proceedings.

Additional Fees:
 Banquet Ticket \$9.00
 Field Trip Ticket \$1.00

This is a Public Conference; everyone interested is welcome and encouraged to attend.



Registration

Darlene Reeves of the Water Resources Research Institute registers participants of the 24th Annual Water Conference.



Over 200 participants provided an attentive audience for the speakers and panel discussants.

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WELCOME TO THE UNIVERSITY

Dr. Gerald W. Thomas
President
New Mexico State University

Thank you very much, Carol (Ropp), and more thanks to you for your leadership in the community and in the state.

It's my pleasure to welcome you here, and I do say "welcome." Beyond that I want to make a few comments.

This is a time in our history when decisions about resources are critical. The main resources that we are concerned with are land, water, and energy. Energy is in the news, and in the short run energy will shape our lives more than any other resource--both the availability and cost of energy. Energy impacts on the decisions about other resources. It impacts on your daily life and the daily life of the University and the daily life of each individual here, including myself. So energy is in the news; energy is the resource that today requires more national and statewide attention than any other resource.

Beyond that, in looking into the future, say to the turn of the century, water will certainly become more and more critical. And water will be the most limiting resource, in my opinion, beyond the next two or three decades, as, hopefully, we find more and more answers to the energy problem.

Good land is also still critical--decisions about land use and land management. We are still losing about a million and a half acres of prime land from agricultural production each year in the United States. Indeed, we are all concerned about land and we are concerned about energy. But the concerns about water in the long run may be more important than either of these other two resource decisions.

In approaching decisions about any of these resources, I keep reminding audiences that the proper steps in the process should be: first, research, to examine alternative solutions; secondly, education, to help evaluate and make decisions about these problems and the possible solutions; and ultimately, corrective legislation. When research and education fail then legislation may be the only answer.

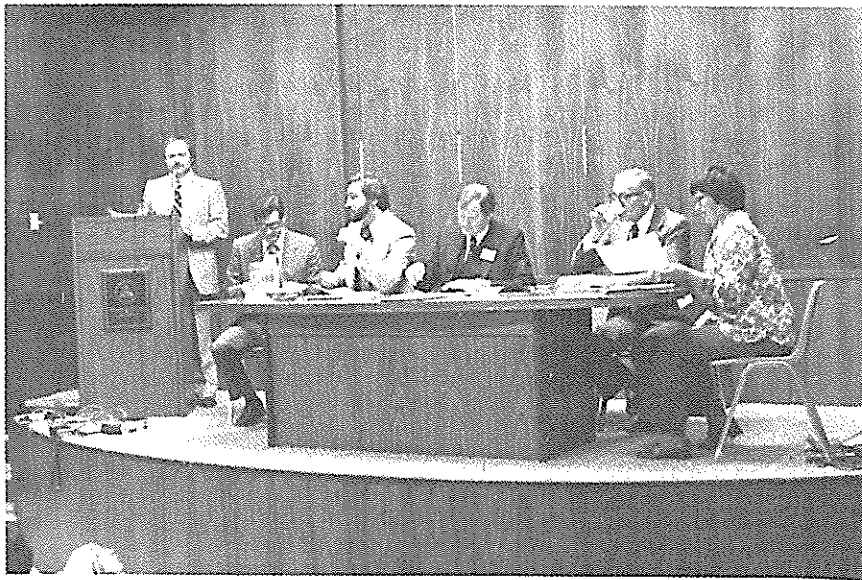
We are dealing now with legislation that relates to national water policy; we are dealing with legislation that relates to state water policy. Now that some legislation is in place and new legislation is being planned, it's up to us to evaluate this legislation as it relates to this important resource.

We are fortunate in New Mexico to have excellent leadership as far as water is concerned. Steve Reynolds is not only a state authority, but he goes far beyond the limits of the state. He is "listened to" on a

national basis; he speaks from experience; he speaks from a knowledgeable base. We are fortunate to have him in the state of New Mexico.

Closely allied with Steve and other individuals in the state, of course, is the leadership in Texas. For several years I was associated with the West Texas Water Institute and I know that Texas has long been concerned about water resources. Overlapping the two states we have Jess Gilmer. Jess keeps us all informed. I guess many of you get the stacks of information from his copy machine and all the comments and notes that he sends. Jess is not trying to get into controversy; he's right in the middle of it all the time. But behind that, he represents a position for us in the Rio Grande Valley, a good position relating to joint problems in Texas and New Mexico. So we have, not only these two, individuals, but many other individuals in the state that speak with knowledge about the water resource. We are fortunate to have good leadership from Governor King's office and I'm pleased that Jim King will be here to represent the Governor and make some comments about that a little bit later.

I do welcome you to this conference. The discussions today hopefully will lead to answers to some of the critical issues about water.



Morning Speakers

(From left) Thomas G. Bahr, Gerald W. Thomas, Jim King, Gerald Seinwill, Steve E. Reynolds, and Jo Carol Ropp

COMMENTS BY MORNING SESSION MODERATOR

Jo Carol Ropp, President
Las Cruces Chapter
League of Women Voters

On April 27, 1978, the 23rd Annual New Mexico Water Conference convened here in this room. One topic discussed was National Water Policy. Some recommendations made then were that states should have primary authority and responsibility for water resource management, a greater degree of coordination should exist between federal and state plans, that federally supported research should be expanded and tied to state water concerns, and that water conservation should be the fundamental consideration in all future water management programs.

A lot has happened since then, folks.

Some of our thoughts were addressed on June 6, 1978, when the President presented his Water Resources Policy Reform Message. He called for a policy that would place new emphasis on water conservation. It was clear that traditional impoundment and storage of water was not considered a conservation measure. Rather, his conservation ideas focused on reduced water demands, improved efficiency in water use, and reduced losses and wastes.

Other points in the President's message called for improvement in planning and evaluation of water projects, enhancement of federal-state cooperation (one of ours), and increased concern for environmental aspects of water projects.

Then, on July 12, 1978, the President issued thirteen separate memorandums calling for establishment of reforms in water planning and development of conservation measures that would be in line with his policy message. These memoranda touched on virtually every federal agency (and there really are an awful lot of them).

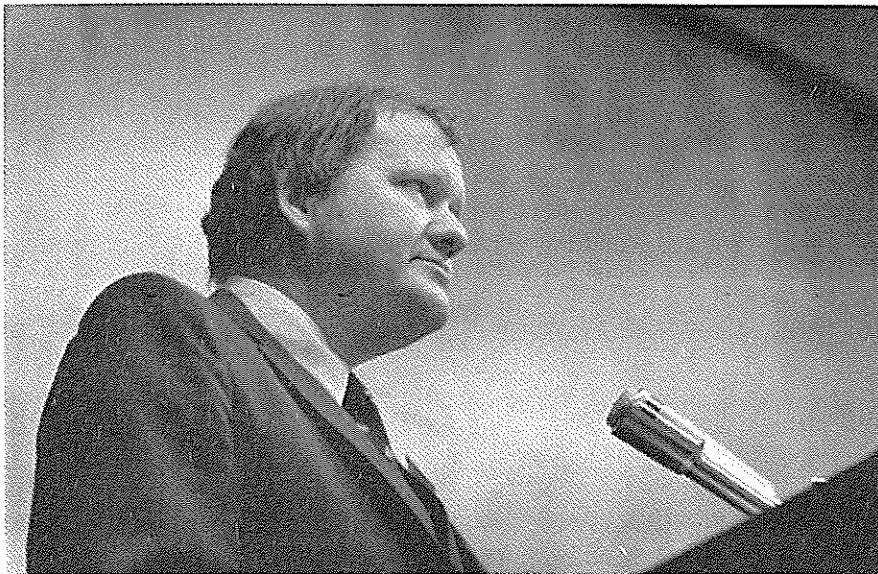
In the wake of the President's message, nineteen task forces were committed to develop specific implementation procedures. Several of these task forces have completed their work, which can be very roughly divided into three categories: option-alternative papers; draft specific legislation for the 1979-80 Congressional session; and preliminary reports on proposed changes in regulations, guidelines, and procedures which are scheduled for public review right now, between May and July.

Also, in October 1978, our New Mexico Water Quality Management Plan was adopted, certified, and sent to the Environmental Protection Agency for approval. As of today, the EPA has only conditionally approved this plan.

All this in one year!

Specific actions and repercussions resulting from the new National Water Policy are varied and somewhat unclear at this point. One example of action is a \$50 million federal budget item for a program of expanded grants to states, something that this water conference has long supported. On the other hand, actions discussed include such items as disallowing federal crop insurance from water-intensive crops in water short areas, certain to raise local discussion.

This morning our speakers will bring together some of the issues and questions regarding National Water Policy, its role in state water management, national conservation legislation, and possible sources of federal money to help us develop our own untapped water resources such as saline water.



Gerald D. Seinwill
Deputy Director
U.S. Water Resources Council

OVERVIEW AND CURRENT STATUS OF NATIONAL WATER POLICY

Gerald D. Seinwill
Deputy Director
U. S. Water Resources Council

President Carter is an engineer. I'm an engineer and I think that's good. Some say that's bad - an engineer is okay for driving a train, but not for running a railroad.

No matter, I assume his engineering professors at Annapolis taught him the engineering approach to problem solving which applies equally well to building bridges, or buildings, or dams. You are taught to ask four questions:

- 1) Why do this at all?
- 2) Why do it this way?
- 3) Why do it now?
- 4) Will it work?

Early in 1977, when faced with a need for his decision on funding new water projects he applied those rules and found some projects that were either economically unjustified or environmentally unsound. He told Congress he was not keen on funding 18 specific projects. The Congress said they were. And thus was born the National Water Policy Review.

In May of 1977 in his environmental policy message the President announced a Message: six month review of national water policy.

In spring 1978, WRC/CEQ/OMB sent their options and recommendations to the President.

By June 6, 1978 the President had made his decisions and sent his Water Policy Message to the Congress.

On July 12 the President sent 13 Directives to Federal Agencies to begin the implementation process.

All of the implementation activities are under the direction of Secretary Andrus, with CEQ and OMB looking over his shoulder.

Water Policy Message laid out four main goals:

- . to improve planning and management of Federal Water programs,
- . to provide a new national emphasis on water conservation,
- . to increase attention to environmental quality, and
- . to enhance Federal-State cooperation and improve State water resources management.

The many changes, new initiatives, redirections, and improvements are all designed to accomplish one or more of those four goals.

Principally, the water policy reforms are to get the Federal House in order--but they also throw the door wide open for States to assert, or to reassert their basic and principal responsibilities for water resources management.

For better or for worse, the President is challenging traditional congressional judgement in project selection. He has offered new criteria to encourage the selection of economically and environmentally sound projects. He has asked the States to play a stronger role in both policy and project development in a new era of comprehensive resource management.

The basic issue raised by the President's initiatives is whether national water policy choices and program decisions should be made on the congressional appropriations battlefield or by the States, the Administration and the Congress working together within the framework of some generally accepted principles and guidelines.

The relative roles of the Congress, the Administration, and the States are like the legs of a three-legged stool--each must be of approximately equal size and strength or the stool will topple. The water policy reforms provide some cross-bracing to this stool.

The role of the State is as the primarily responsible water manager and allocator of water to be developed. The State is also the voice of the people as to the need for Federal involvement in water resource development.

The role of the Congress is as the decisionmaker on which Federal projects should be built when and where.

The role of the Administration is to provide the Congress with candidate projects which are well-conceived, well-planned, economically justified and environmentally sound. Present activity of the Council--the planning manual and the independent water project review--are designed to provide good choices for the Congress.

In the Summer of 1977, I was the State Water Administrator for the State of Minnesota - and I attended their first regional hearing and said what everyone else said: We weren't notified, we didn't get the option papers, there's not enough time - it won't work. Lo and behold,

I'm now a Fed, convinced that it can work, and dedicated to making it work. Certainly, one thing accomplished by the short fuse on the water policy study - six months as originally announced was to get everyone's attention.

Leonard Wilson of the Council of State Governments has authorized an excellent report. Titled "State Water Policy Issues," and published last November it has an excellent summary of the water policy reform, a good discussion of State views of the national water debate, an analysis of the problems and issues, and a prospective of what lies ahead. Wilson sums up by saying: "The objectives and position of the President and governors are not entirely incompatible!"

We like to think that is indeed the case.

During the water policy reviews, the National Governors' Association and their Subcommittee chaired by Governor Matheson developed a position paper setting forth 11 principles which should guide national water policy. And they had a telling affect. Not all, but most of their principles are incorporated in the President's water policy.

Among the several water policy initiatives announced by the President last June and refined by his directives to agencies in July, four major initiatives are the direct responsibility of the Water Resources Council. Those four are:

1. State Grant Program

Expansion of the grant program for States to include \$25 million yearly for water planning and management, and \$25 million for water conservation technical assistance.

2. Revisions to the P & S

Revision of the Council's 1973 Principles and Standards for Planning Water and Related Land Resources Projects to include enhanced consideration of water conservation and nonstructural alternatives.

3. Manual of Procedures

Development of a planning manual for use by each agency in calculating benefits and costs using the best available techniques in applying the Principles and Standards in a consistent manner.

4. Independent Review

Conducting an impartial technical review of all preauthorization reports and preconstruction plans. The review will:

- . examine adherence to the P & S,
- . examine compliance with the new planning,

- . verify the accuracy of the benefit/cost computation, and
- . verify compliance with existing rules and regulations and laws.

These four efforts along with two others--state cost sharing and full funding are the key items which will have immediate and I hope positive effects on the way we do business--in New Mexico and all the States.

Let me give you the current status of each of these.

Initial impetus for the water policy reform was undoubtedly the President's desire to get a handle on how the Federal Government invests in water resources--but the most fortunate outcome was I think the realization that the States are the key players in National Water Management.

Recognize that all the agonizing over interest rates and regional benefits and benefit/cost ratios is aimed at determining how we slice the pie. And recognize that the pie is not getting noticeably larger. Total Federal water resource investment has grown in the 70's to \$10 billion per year. But most of the growth is on the water quality side. (Now a little over half.) And with Proposition 13, the clamor for a balanced Federal budget, inflation, and all the rest. The pie is not going to grow much, if at all.

Historically, and I include recent history, we - the Federal Water agencies - are better at planning projects than we are at implementing. Right now we have a backlog of \$34 billion worth of projects that have not been funded. And new needs seem to pop up every year.

To enlist the States' help in making these difficult choices, the Administration has proposed legislation which would require a front end investment by the States. A 10 percent share of project costs attributable to water supply, power and irrigation and a 5 percent share of all other project costs would become the States' financing responsibility. The political decisionmaking necessary to commit these funds would insure that the project decision was fully considered by the State, its legislature, and its Governor. Project revenues would return to the State in the same proportion as its financing share. Additionally, to remove the present bias toward structural solution, all flood control, structural or nonstructural would be cost shared 80/20, Federal/State.

Last year and this year (FY 1979 and FY 1980) the President has recommended that full cost of new starts should be appropriated when the project is initially financed.

- Provides clear understanding of total commitment
- Provides program managers with flexibility to most effeciently control construction progress
- Puts WRC on same basis as other construction and procurement with long times

- Facilitates analysis of tradeoffs among fully-funded Federal programs in the annual EXEC and Congressional consideration of the budget
- Reinforces emphasis being given by both branches toward longer term impact of budgeting decisions

The revisions to the P & S (Nonstructural and Water Conservation) will be published in the Federal Register May 24, for 60-day comment. We will also announce our intention to review the entire P & S, rewrite it in English, and ultimately publish as RULES.

In our planning manual for use by all Federal water construction agencies our focus is on the consistency in evaluation using best available techniques. The current concentration is on National Economic Development. Continuing work will include environmental quality, social well-being, and regional development. We will publish a notice of proposed rulemaking on May 24. After public review and final approval by the Council we hope to establish final rules in October.

The Independent Water Project Review, established by an Executive Order of the President in January, is intended to provide an impartial technical review of the project plans of the construction agencies. Within 60 days in most cases, 90 days for a few exceptions, the review will produce a publically-available statement of findings. The "report card" will accompany the project report to the involved Secretary, OMB, and the Congress as they make their recommendations or decisions on project authorization or funding. Such a review is not a new idea; it's been recommended by several water policy studies over the past 20 years. But it fits extremely well into the set of initiatives proposed by the President to improve our delivery of efficient water resources developments.

While many of the water policy initiatives may be perceived by Governors and States as at best a necessary evil rather than a positive good, I think the proposed State Grant Program is definitely a positive good. It offers each Governor the opportunity to expand, redirect, or improve his State water management programs to meet the needs of the 1980's. And it is voluntary; they can participate as much (within limits of our appropriation) or also as little as they wish.

This is an outgrowth of our old Title III program for State grants for water planning which provided \$3,000,000 a year - or about \$60,000/State; but was limited exclusively to planning.

New programs greatly expand the scope and will cost share on a dollar for dollar basis all State water management activities. Two separate but complimentary programs would be established, each at \$25 million per year.

The State program for water management grants would be tailored by the Governor to fit the particular needs of his States. States would specify their priority needs and problems and design their plan to deal with them. Our guidelines will suggest areas which should be addressed;

e.g., integration of water quality and water quality planning and management, protection of ground water supplies, integration of ground water and surface water planning and management, etc. Water Conservation Technical Assistance can be used for almost anything it takes to establish effective water conservation programs: public information, education, demonstration projects, advertising, etc. The only restriction is that the Water Conservation programs be an integral part of all State Water Management Programs. And grants could be passed through to, and be cost shared by, local governments. A separate grant program for Indian tribes is included in our proposed legislation and would reserve 1.5 percent of the total appropriation for this purpose.

So, will the national water policy work in New Mexico? I think it will. Not without a little heartburn and reevaluation along the way, but eventually it will work.

It will effect project funding in New Mexico - as well as in every other State. Bad projects will be culled out, good projects will be "certified good" and the choices among them will be made by the political process--which is still perhaps the only way of deciding how we spend each other's money.

Depending on your viewpoint as a Federal Taxpayer or as a State Taxpayer and whether you favor or object to a particular project - you may not agree with the final decision via the new water policy - but it will be a fair and rational decision.

The potential grants to New Mexico would range from one third to about a full million dollars, depending on the funding level finally set by the Congress. The Administration proposed \$50 million, thus for New Mexico: $\$458,000 + \$241,000 = \$699,000$. The House Committee is considering a \$20 million level, thus: $\$183,000 + \$172,000 = \$355,000$.

Whether these amounts are too much or too little, only you and time can tell. We are convinced that most States could match the possible grants at the \$50 million level right now, or in a very few years. I encourage you to express your opinion to the Congress.

There is an old adage about water in the United States. Local governments have all the problems, State governments have all the authority, and the Federal government has all the money. The National Water Policy is designed to attack that problem.

NEW MEXICO RESPONSE TO
CURRENT STATUS OF NATIONAL WATER POLICY

Steve E. Reynolds
New Mexico State Engineer
Secretary, New Mexico Interstate Stream Commission

Thank you, Carol; Fellow Conservationists:

Jerry, one thing that's troubled me is whether, in fact, anybody gave careful consideration to the question whether our national water policy needed reconstruction. Knowing that you weren't there at the time that decision was made leaves me a little unassured yet.

Just a couple of statistics. Irrigated land represents roughly ten percent of the crop land in the United States and produces about twenty-five percent of our food and fiber, which is so important to us nationally, and more and more important internationally.

If you just take a map of the seventeen western states and spot on there the reclamation projects, you fairly well outline the economic base of the western United States. I think that's not entirely coincidental. I think it's not unreasonable to suggest that World War II might have come out differently had it not been for the water and power made available by the Boulder Canyon Project.

A rancher friend of mine, who has a lot of experience with mechanisms and a lot of common sense, puts it this way: "If it ain't broke, don't fix it!"

Jerry mentioned the state grant program where the administration has proposed that the appropriations for grants to the states for water planning and water management be increased from about \$3 million to about \$25 million, roughly an eight-fold increase. As Jerry says, currently we get about \$50,000 a year by way of grants for water planning. The new proposal would give New Mexico about \$350,000 at the \$25 million rate for water management, and I think planning would also be included in the final bill. This is roughly twelve percent of the State Engineer's operating budget. At the current rate of grants, state water resources administrators are a little nervous about the continuing availability of that appropriation. And if you jack that up eight-fold, I think that the state water resource agencies are going to be precariously dependent on federal grants, and that an avenue would be provided for federal encroachment on the water rights administration prerogatives of the states. And if you see some of the objectives of the administration bill, you can see cause for concern.

It involves a federal assumption that there's something intrinsically evil about groundwater mining. We do a great deal of that in New Mexico and I think it is not intrinsically evil. There also seems to be concern that we have not sufficiently protected in-stream values, and I think for reasons that I'd better not try to go into now, that's not valid.

A "Blue Ribbon Panel" of educators has recently said that no educational administrator needs to be reminded that federal money means pervasive bureaucratic control. Now, it may be that water management administrators need to be reminded of that. I think the one way that we can be assured that there will not be the encroachment that I am concerned about, is that the federal grants are minimal, or unconditional. I rather doubt that the Congress is going to find the latter acceptable.

It's my view that the \$50 million that has been proposed for water management and water conservation would be better spent distributed among the programs of the Bureau of Reclamation, Corps of Engineers, and the Soil Conservation Service. These programs have been invaluable to us.

Jerry has also addressed the independent project review function that has been assigned to the Water Resource Council. Under the proposed rules and procedures, any project or separable unit of a project that has been authorized but upon which construction has not been initiated, would be subject to that review, subject to a review of the same intensity as a feasibility report to be submitted to the Congress for authorization of a project. This involves three important projects in New Mexico: The Brantley Project, a dam and reservoir above Carlsbad, principally for safety of dams purposes, authorized in 1972; the Hooker and Animas-La Plata Projects, authorized in 1968 in the same legislation that authorized the Central Arizona Project. At best this would be, in my opinion, an unjustified delay. There would have to be essentially a new feasibility report prepared on those projects, as I read the rules and regulations.

Now, the review of a project already authorized, under newly adopted federal water policy, with the objective of substantially altering or eliminating that project, would be disruptive and disappointing and unfair to the people and the local governments that have relied upon that federal commitment.

Now, where the project is a part of a basin-wide water development, a comprehensive water development, such as the projects authorized by Public Law 90-537 in 1968, including our Animas-La Plata and Hooker projects, that inequity is even more evident. That law authorized projects in both the upper basin and lower basin of the Colorado River. It represented the culmination of years of controversy and litigation and negotiation among the seven states and the federal government. To renege on some of the federal commitments while fulfilling others in that act, would tend to destroy any foundation for cooperation among the states and the federal government in matters involving water projects or other legislative concerns. Certainly it would be more equitable to renege on all of those commitments than to meet some of them and not meet the others. I don't think we would deal that way with Mexico or any other foreign government.

I don't think we should deal that way with our own states. Certainly projects or separable units of projects that have been delayed to provide an orderly construction schedule or because of budget constraints should not be penalized.

With respect to cost-sharing, the draft legislation that Jerry mentioned, the legislation that was circulated by Assistant Secretary of the Interior Guy Martin, would have had some profound effects in New Mexico. I think the legislation that Jerry indicates will be introduced next week would be less severe. While I haven't seen it, Jerry's remarks indicate that even that legislation may cause us considerable concern. We analyzed the draft that had been circulated and found a total impact on New Mexico of \$161.3 million; \$26.8 million of that would be the state's "front-end money" that Jerry mentioned. About \$21 million of that would have been recoverable from project revenues. I think that one statistic says something. The Commissioner of Reclamation agreed with me in a conference that cost-sharing, the state's front-end money, was largely symbolic from the federal point of view, but I told him that that is a matter of some substance from the state point of view. Really what it effects is to ask the state to share with the federal government the banker's role in the project, and considering the relative resources of state and federal government, as Jerry indicates he has, this seems neither necessary nor advisable.

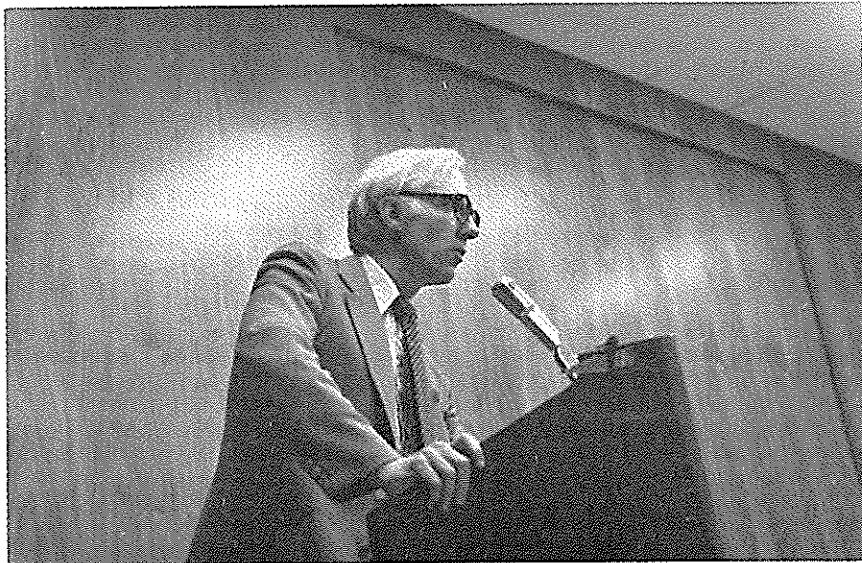
With respect to flood control projects, that is the state's contribution to the cost of non-vendible project outputs, it seems to me that the current cost-sharing provision for flood control projects is appropriate. Under those projects, the local interests pay the costs of rights-of-way and easements except for those costs related to reservoir projects. It seems to me that the people should have the necessary protection to life and property whether or not state and local governments are in a position to make that twenty-five percent contribution to the cost of the flood control project.

I am pleased by Jerry's assurance that this "safety of dams" question has been taken out of the bill. That single item of the bill would have cost the Carlsbad Irrigation District, could it afford it, \$133 million. Those of you who know that district know that that wouldn't work, but that was proposed despite the fact that in authorizing the project in 1972, the Congress found that the elimination of a federally created danger at federal cost is reasonable and sound as a matter of logic and principle. I am most appreciative if the administration now sees that just as the Congress did in 1972.

Perhaps the most repugnant in that draft bill, and I hope this is also gone, is the section that would authorize voluntary contributions by the states to projects that had already been authorized; the provision being that if the states made such voluntary contributions, then they would be given priority consideration in the President's budget proposals. Now certainly, my experience tells me, if I'm going to get favorable

consideration for doing something, and I don't do it, I'm not apt to get much consideration. This puts us in what I believe is unfair competition for funding for water projects with states like Texas and California that probably need help a lot less than we do.

Thank you very much.



Mr. Hal Brayman
Assistant Staff Director for the Minority
U.S. Senate Environment and Public Works Committee

VIEWS FROM THE U. S. SENATE

Mr. Hal Brayman
Assistant Staff Director for the Minority
U. S. Senate Environment and Public Works Committee

It is a great pleasure to participate in the 24th annual conference sponsored by the Water Resources Research Institute. As you may know, I'm a substitute. Tom originally asked Senator Domenici to speak. Senator Domenici has asked me to express his regrets for being unable to attend, but this is becoming a very busy time of the year in the Senate.

However, his interest in water is strong. He stayed on the Committee on Environment and Public Works in this Congress specifically to retain his position as the Ranking Republican on the Senate's Water Resources Subcommittee, which has jurisdiction over the OWRT, EPA, the Corps of Engineers, the WRC, and the SCS. Together with his position on the Energy Committee, which has jurisdiction over the Bureau of Reclamation, he covers virtually all the water programs the government operates.

These, however, are not the best of times for water. Maybe that's why Senator Domenici sent me; it's better to have the messenger's head chopped off than the Senator's.

But if they are not good times, they are exciting ones in water. Despite this year's heavy snows, it wasn't very long ago that the West and the nation faced the danger of severe drought.

Embedded within the \$15 billion in economic loss suffered in the West in the 76-77 drought was a portent of the next century, if our nation fails to address and reform the management of our water resources.

The national water resources development effort is in disarray. If anyone doubts that assertion, just let them look at the program. We aren't building very many projects; we certainly aren't building them very fast, and the ones we build may often be the wrong ones. While water resources are vital to our progress as a nation, we are letting the effort linger. Even when we decide to build a project, it is plagued by slowness.

H. L. Mencken once pointed out that "for every complex problem, there's a simple answer, and it's wrong." We need to look at serious questions, and we need to do it while there is still time.

During the 1976-77 drought, President Carter brought forth his own view of a better water policy. It was a narrow view, one based on attacking federal extravagance and waste. The President chose the height of drought to announce his opposition to 18 allegedly wasteful water resource projects in the West. But the issues we confront go well beyond the merits of a few projects. They extend to the issue of whether the water policies of the first three-quarters of the twentieth century will carry us safely into the next century.

The issues extend to the basic structure of our national response to water needs. We need to restructure our basic water program. We need to do it now, so that we can evolve it into an approach that identifies and funds critical priorities. Water for our future is too important to leave to the whims of our present ad hoc approach.

From the moment that a raindrop hits the ground, civilized man has manipulated water. The issue is not whether we should engage in such manipulation, but rather how well we do it.

Civilization itself arose out of a collective effort to irrigate the Middle East. As W. H. McNeil notes in his classic, The Rise of the West, man's first civilized communities "differed fundamentally from Neolithic village communities, for the simple reason that the water engineering vital to survival required organized community effort. The world's first bureaucrats were priests whose principal expertise was water resource management--laying out canals and keeping accounts, without which effective coordination of community effort would have been impossible."

Five thousand years later, human civilization still remains dependent on the skill with which water is dammed, conveyed, treated, and consumed. Over 97% of the world's water is found in the oceans. Three-fourths of the remainder is frozen into glaciers. A miniscule 3/10 of 1% of the earth's water is readily available to man. It is an obvious truism that water is a scarce resource that must be carefully husbanded for man's survival. Yet, in many cases, we are failing to build the most needed project.

The greatest danger is that we have not perceived the severity of the crisis. We have failed to recognize that present policies may prove wholly inadequate. Because the West has the most at stake, it also has the most to gain from sound policy.

Previous discussions of water policy and water projects have simply lacked any broad perspective. President Carter has targeted on water policy in the context simply of pork-barrel politics, so as the need to fashion a coherent strategy that will meet an emerging crisis. The President has counseled reduced water resource investments, a shortsighted view. What is needed is more efficient projects built to a prompter schedule that meets the nation's needs.

The President's tunnel vision on "pork" is regrettable. But so is the "I'm-all-right-Jack" attitude that prevails among many water users. The West was built on federal water projects that rival the Roman aqueducts. Subsidized water enabled cities to grow and the desert to bloom. The goal of the 1902 Reclamation Act was the settlement of the West. This has been achieved. Population growth proceeds apace. The Sunbelt, the fastest growing region of the country, continues to experience an extraordinary economic boom. And the nation counts on the West to offer up reserves of coal, oil, gas, and uranium to meet national energy needs.

All this activity requires vast new sources of water, when water already is scarce. The Water Resources Council has found that water shortages already exist in 21 of the 116 subregions of the country.

These subregions lie in the Central Plains and Southwest. By the year 2000, 39 of those 116 subregions are likely to suffer water shortages, including areas in the Northern Plains, Rockies, and California. Thus, by the year 2000, much of the nation west of the Mississippi will be likely to face severe water shortages.

The people in the West recognize that without new sources of water, of more efficient use of water, the economic future may turn cloudy. Many fail to recognize that present policies, based on massive federal expenditures and cheap, subsidized water, long past their original goal of the settling of the West, may have reached the point of diminishing returns.

The Colorado River presents a classic example. Portions of Arizona, Nevada, and California survive on water diverted out of the Colorado. The basis for these diversions is a complex compact drawn up by the affected states. There is just one tiny problem. When the states divvied up the river, it was running about 20% above historic average flows. Thus, while the various states are entitled to 15 million acre-feet of water, only 13 million or so acre-feet are going to be available on a reliable long-term basis. The cornucopia of the Colorado may become exhausted.

The Colorado River is but one example that the easy solutions have vanished. Most rivers are dammed, and most possible diversions are operating. The Colorado would indicate that the growing western economy faces the future on a fixed supply of water; and there is more.

Many areas of the West may have mortgaged their future to pay for the present boom. With most of its surface waters appropriated, the West has aggressively pumped out groundwater, often uncontrolled by water laws. If the annual recharge rate is not exceeded, groundwater proves a valuable, renewable resource. But when that recharge rate is exceeded, groundwater becomes a diminishing resource. In parts of the West, groundwater threatens to become an exhausted resource. The Water Resources Council estimates that the nation's daily overdraft of groundwater is 20 billion gallons, with 60 percent of that overdraft occurring in the Ogallala Aquifer.

The Ogallala is a water problem of vast national significance. The aquifer serves 6 states: Texas, New Mexico, Colorado, Oklahoma, Nebraska, and Kansas. In 1937, 600 wells existed into the Ogallala. By recent years, that number had risen to 55,000, and the aquifer has begun to go dry. The states served by the Ogallala produce 386 million bushels of grain and support 40% of the nation's beef market. It is not difficult to imagine the widespread economic and social dislocations that may occur in the Ogallala in the next decade or two. In 20 years, 4 million acres of irrigated agricultural land may be reduced to as low as 125,000 acres, a drop of 97 percent. The Platte Valley in Nebraska confronts the same situation as the Ogallala, with unrestricted drilling of groundwater. Groundwater exhaustion problems are also occurring in Arizona and California. In Baytown, Texas, reliance on groundwater has produced a subsidence in the land of 17 feet, exposing 400 homes to severe threats from tidal and rainwater floods.

Yet the national program remains an ad hoc one. Let me provide an example. The Congress long ago authorized a project that would make Dallas, Texas, a seaport, at an estimated cost of \$2 billion. Such an idea, while nice, may not be very high on anyone's priority list, except the Mayor of Dallas. Yet, as of today, there is no federal program for meeting the crisis involved in the exhaustion of the Ogallala.

The problems in the West are also apparent when it comes to the issue of price. By keeping the price of water artificially low, the federal government has not encouraged wise use of water. Residents of Philadelphia pay \$13 for the same volume of water that will cost the residents of Salt Lake City \$2.10. Such low prices inevitably lead to a careless approach.

Federal projects supply water to a substantial portion of the irrigated lands in the West. And federal water is far cheaper than water from other sources. In California, water from the Federal Central Valley Projects costs between \$3.50-\$7.50 per acre-foot. In contrast, water from a nearby project run by the State of California costs \$22 an acre-foot. It takes little imagination to guess which farmers are most likely to use their water more wisely.

The State of Arizona, which has recently been the nation's fastest growing, epitomizes what some may term profligacy. For example:

- * Arizona, the second driest state in the nation, has a per capita consumption of water double the national average.
- * Arizona has more boats per capita than any other state in the Union.
- * Portions of the water table in Arizona have dropped 150 feet over a 10-year period.
- * Residents of Tuscon water their lawns from unmetered irrigation gates.

While the West comprises half of the nation's land mass, it receives only 14% of the rainfall, and a staggering 85% of the nation's water consumption. The reason, of course, is irrigated agriculture. And just as with early Sumerian civilizations, irrigated agriculture is the basis of much of civilization in the West. Although irrigated agriculture accounts for only one-sixth of the land farmed in the country, it consumes 90% of the water in the West, or over 70% of the water consumed nationally.

The General Accounting Office, in looking at federal irrigation projects, has estimated that from 20 to 50% of the water is wasted. If 20% is a reasonable number, this equals all the water used by urban America. A modest 10% saving (or over 1 trillion gallons a year) would go a long way toward ending the water crisis in the West.

New Mexico has shown that modest water savings are reasonable. By metering water in the Pecos Valley, the state reduced the annual average need for certain crops from five to three acre-feet of water, I understand, with no adverse impact on yield.

Water problems, of course, are not a Western monopoly. In the East, pollution of existing supplies has been the focus of a multi-billion dollar effort to clean up wastes from municipalities and industry. But the problems of the East are not purely those of quality. The East has more than its share of the \$3 billion in flood damages that occur each year. Water consumption in the East is expected to double by the end of the century. Already supply shortages have developed in Boston, Atlanta, and in Washington, D. C. Groundwater overdrafts in New Jersey, New York, and Florida have produced problems. Major urban water supply systems in the East are in disrepair. And New York City, the granddaddy of all problem areas, is expected to have a 390 million-gallon-a-day shortage by the year 2000.

The water crisis shares many of the same features as the environmental and energy crises: neglect, economic ignorance, and lack of timely action have each played a part. But there is one critical difference. Time still exists to solve the water problem. Timely incremental changes, if initiated today, can produce the needed change. Wild crusades are not needed. A sound, blue-chip investment strategy is sufficient.

In the babble of voices over water policy, no one has focused on the principal issue: which is our lack of a sound investment strategy on water development. There is no planning mechanism at the federal level to attack the priority problems first. In a nutshell, there is no strategy for funding; there is no effort to find and solve the most pressing problems.

Of course, there is no lack of effort to throw dollars at the problem. Twenty-five agencies spend close to \$10 billion a year (\$5 billion if EPA's sewage treatment grants are excluded) on water. A backlog of 1,900 projects exists, with a cost of \$34 billion. Between now and the year 2020, some estimate our country will invest \$538 billion in water resources projects; \$250 billion of capital will be in federal tax dollars. But without a priority system, there is no assurance that this investment will be spent to meet the problem.

Slowness plagues so many projects. Construction on the average project now requires something on the order of 26 years just to initiate, according to the General Accounting Office. Even if this figure is inflated by the inclusion of some very major and lengthy projects, the time for implementation is tedious, and it is continuing to lengthen.

Delays, of course, stem from a variety of factors. There is the need for multiple Congressional actions. There is the usual lack of optimum funding during actual construction. There are numerous examples where just the planning on a project stretches years beyond a city's needs for the project.

And the program, such as it is, continues to suffer attacks for its characteristic as "pork barrel." And let me emphasize something-- anti-pork politics is good politics these days. Vetoes of "pork barrel" bills are good vetoes, politically. They play very well in Peoria and on the Evening News.

But from the frustrations and period of confrontation, we of course, have an opportunity for initiatives and new approaches.

In the closing minutes of my talk, I would like to talk of two-- one rather parochial, and one on a broader basis.

The first is Dr. Carruther's topic of desalination. Desalination offers real hope. New Mexico will need, I understand, an estimated 3 million acre-feet of water yearly by the year 2020. Under New Mexico, there are something on the order of 15 billion acre-feet of brackish water--5,000 times the annual need. Thus, it is obvious that even a modest advance in the use of brackish waters will be of great value.

Senator Domenici has urged that the Senate appropriate \$10 million to initiate a program for demonstrating saline water conversion. These demonstrations, authorized by Public Law 95-84, are now being designed under the Office of Water Research and Technology within the Department of the Interior.

Section 2 of that 1977 Saline Water Research and Conversion Act, as amended last year, authorizes construction of five demonstration projects at a cost of \$150 million. The law directed the Secretary of the Interior "to study, design, construct, operate, and maintain desalting plants demonstrating the engineering and economic viability of membrane and phase-change desalting processes at not more than four locations in the United States . . . provided that at least two such plants shall demonstrate desalting of brackish groundwater."

But, unfortunately, the budget for the Office of Water Research and Technology ignores the need to initiate this important effort in F.Y. 1980. And, I might add, that this neglect appears to be a part of a systematic attempt to undercut this 1977 law.

There is a need to focus attention on desalination and to build projects like the one for Alamogordo, which was identified by OWRT as one of the two best prospects in the nation. And, I might add, Senator Domenici intends to do all that he can to see that it is funded for 1980.

But let me close by talking of the broader issue of water policy and a national water resources program.

Great frustration, as I have said, exists in the Senate over water policy. This is not so much because of the President's actions on hit lists and water policy, though that has not helped, but it is more because of the general sense of discredit with which much of the water program is viewed by the general public. The label of "pork barrel" is not a pleasing one, but it is accurate in many senses. Today, we have a program that seeks to give a little bit to everybody, rather than identifying the priority needs and going to work to solve them. It is a political process, and I don't mean that in the best sense of the word.

Senator Domenici believes that it is essential that the Congress confront directly the issue of water policy and to work toward a more effective program to serve the needs of the remainder of this Century.

He does not believe that we can achieve very much by tinkering with cost sharing or other items within the present structure.

Rather, he is convinced that we need new directions, ones that emphasize state responsibility and state priorities.

Frankly, the public will have greater respect for a program where men like Steve Reynolds call the shots, than one that continues to be mired in back-scratching politics. We must work toward a system of priorities. We must encourage local and state governments to take a more active role in the development of projects, to let the States determine to a far greater extent, what is spent, where it's spent, and at what speed, as other Federal-aid grant programs now proceed.

Some cost sharing is the price of more local involvement, and more local control; and better priority setting means a more effective program. We need to move away from total reliance on the tyranny of cost-benefit analysis. No other federal program has become so tied in knots over a single number. Rather than serve as protection against political manipulation, the benefit-cost ratio has become the subject of ever greater political fudging. Its role should be reduced. A financial commitment, built upon a local priority list, serves as a far better protection against poorly conceived projects.

Personally, I believe the nation has too much at stake not to attempt to do a better job. We can no longer afford the present crippled program of ad hoc decisions. The only way we're going to have adequate development is to develop a program, to make that program work, to go after the priority work, and make sure that local people who will benefit offer a reasonable commitment to the work, then move it on to early completion.

Our committee will conduct in June hearings on the issues of water policy--issues far beyond 10% cost sharing. I am hopeful that the thoughts you will take back from this conference will provide ideas that we can use--ideas on how to establish effective priorities, how to move the program ahead faster, and--basically--how to make it a true program, one that no longer will be mired in the ad hoc "pork barrel."

Thank you.



Garrey E. Carruthers, Professor
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USES OF NEW MEXICO'S SALINE WATER: VIEWS FROM AN ECONOMIST

Garrey E. Carruthers, Professor
Agricultural Economics and Agricultural Business Department
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Introduction

Thank you very much, Jo; thank you ladies and gentlemen.

You can't hang around with the people I hang around with, like Tom Bahr, agricultural economists, politicians, and bartenders without developing and maintaining a strong interest in water policy. So I was particularly pleased when Tom asked me to speak to you today; to serve as one of the token college professors on this year's program.

Some would argue that we could dispatch with the theme of the conference rather quickly, that is, respond to the question--"The New National Water Policy: Will it Work in New Mexico?"--with an unqualified "No!" For example, you overload Steve Reynolds' pacemaker and awaken the slumbering masses when you suggest that federals have anything to do with management of New Mexico's water resources. I have the impression, after listening to Steve this morning, that he wasn't exactly pleased with the national water policy, particularly those aspects that deal with management. A fair, non-partisan statement would be that we, collectively, in New Mexico are very sensitive about water resources, and with the exception of our relationship with our good Texas friend, Jesse Gilmer, feel very provincial about water use, abuse, allocation, pollution, and so on--as possibly we should. Our geography is somewhat unique, our ethnic background is unique, as are our rates of growth and development. Most truly New Mexican considerations have been captured in the strongest water laws in the United States; water laws dealing with both allocation and quality. Secondly, we can respond "No" to the question because we feel there has been a propensity, at least on an occasion or two, for well-meaning federal politicians and bureaucrats to overshoot the mark in quest of our salvation. (The canons of the economics profession require I note that the latter comment has elements of a personal value judgement.)

But even the most serious non-believer must admit there is a role for the federal government in water resources policy and in the subsequent solution of our water problems. It has been argued for more than 200 years, and can be argued today, that government should do for folks those things we cannot do for ourselves, or cannot do well for ourselves, and perform the functions necessary to protect and enhance national welfare. If there is a national water policy which would fit in this context, it certainly would include a call for more basic research in water resources; basic research in water efficiency, quality, conservation, and augmentation.

I did not detect, in the presentation on the national water policy and in my perusal of the proposed policy, the focus on research that should

exist. In fact, Jerry spoke often of planning and management, but I do not understand how government is to plan and manage without basic information--information generated in the research process. This deficiency has been a major revelation of New Mexico's Section 208 planning.

The Status of Basic Research

Hal and Jerry both missed some great opportunities. Even the most avid, redneck government-hater in New Mexico could be sold on the necessity of scientific inquiry, simply because the future of New Mexico depends on it. But federal politicians and bureaucrats are hardware oriented. Hal spoke of the demonstration plant destined to be in Alamogordo. Politicians and bureaucrats like to invest in such plants but, as we assess national policy, it seems fair to ask--why is the relative status of research in the national water policy so low relative to hardware?

Let's admit, right off the top, that basic research is a long-run consideration. Most basic research takes a long time--particularly basic research in water resources. Politics is short-run. We elect Congressmen for two years, elect Governors in this state for four years (in other states, two years), and elect Senators for six years. Hence, politics is a short-run phenomenon requiring, within the relevant time periods, a visible payoff for political decisions. A Senator would much rather have his photograph taken next to a plant--a large silver plant in Alamogordo that distills or otherwise purifies saline water--than he would have his picture taken by some small plant like alfalfa or cotton. When people drive by a cotton field, it is a cotton field. You don't look out there and say, "That's what our Senator did for us, folks, when he served in the United States Senate." When you drive by the building, Clinton P. Anderson Hall, you remember the great United States Senator from New Mexico and his contributions. You don't always remember basic research contributions. As a consequence, when contemplating research policy--we are reminded of the long-run nature of research and the relationship to Dirkson's first two laws of politics, get elected, and get reelected. Research does not necessarily lend to reelection.

The second reason basic research does not rank with hardware as a priority item among politicians and bureaucrats is the economics of hardware is much easier to calculate. We understand the economics of cleaning up saline water with various techniques. We can talk with confidence about construction costs, energy costs; about feedwater quality and product water quality. But we are not as articulate about research. To use a College of Agriculture example, consider the dollars we've spent trying to solve the mastitis problem in the dairy industry. Mastitis has been a problem in the dairy industry ever since I can remember. After millions of dollars of research, about the best we can report from research is that if you are nice to your cow, she might not get mastitis!

On the other hand, consider the hybrid corn success story. We have paid for agricultural research in some states many times over with hybrid corn, a product of basic research. In this region, all basic agronomic research may be more than covered by successes in cotton and chile. But--you never know--so budgeting for basic research is much trickier than budgeting for hardware.

Lastly, basic research does not rank high among politicians and bureaucrats because the research lobby has just now discovered the exact location of Washington, D.C. When you make or fake a living as a thinker, it is tough to soil one's palms by grubbing for money. Researchers live with the illusion that everyone thinks they are grand! Yet, in reality, few know water resources exist. Researchers have never taken the time to present the case, and therefore, we can't expect to show up very high on the list of things a Senator, Congressman or bureaucrat wants to do.

The Case for Saline Water Research

Saline water research is an example of research system failure. The lack of political visibility, uncertainty of economics, and failure of researchers to communicate is reflected in the very disappointing commitment of the federal government and the state to basic research in saline water resources, particularly basic research which might lead to utilization of saline water in raw form.

We are crazy about desalting. We all understand that if you desalt water, it tastes good. It tastes just like any other kind of water--it's wonderful stuff to drink. But it is very expensive. The federal government has chosen to go the desalting route instead of investing money in finding options for using saline water--straight or on the rocks!

The case for using raw saline water resources in New Mexico is very persuasive. We all agree New Mexico could use a few more quarts of water. But, as we look at the projections from the recent "Water Assessment for Policy Purposes," in the year 2020 we would expect over subscription of our water resources because needs may vary from a projected low of 3.6 million acre feet per year to a high of 4.1 million acre feet per year while supplies will be 3 million acre feet of water per year. But we do have plenty of saline water not included in these calculations; saline water resources that are distributed throughout the state. There is a popular hypothesis, in political circles, that the only saline water in the state is in the Tularosa Basin, that the basin has captured all our saline water. What they have captured is all of the politicians who are interested in saline water. Folks in Tularosa and Alamogordo have presented their case to the people, their representatives, and bureaucrats and the case has been heard in the Legislature. Of the twenty billion acre feet of groundwater reserves in New Mexico, fifteen billion acre feet of these reserves are classified as saline. So, if the supply is good, three-fourths of our resources are not being used.

New Mexico struggles with low per capita income--we sort of bounce between 44th and 50th depending upon who reports it and for what purpose. Any state struggling as New Mexico struggles needs to introduce new resources. The Gallup-Grants area is booming as a result of new uranium activity. Coal has provided a great economic stimulus to the San Juan County area. So--why don't we consider saline water a resource--a new resource--which might serve as an engine of development. A resource becomes an engine of development when it does one of two things; substitutes for another scarce resource, or when it is brand new. When resources are added to inventory, productive capacity should increase.

Some Successes to Date and Some Possibilities

One could add saline water resources to the inventory with a minimum of basic research. Countries, such as Israel, have been forced to do some research and have achieved significant results, particularly in the application of saline water to food production. They have: developed a greenhouse that produces fresh water plus abundant harvests by solar distilling salt water, investigated the impact of using saline water on cotton and sorghum with some successes, and discovered that production and quality of oranges were not affected in the short run by irrigation with saline water. Of course, the potential for orange production in New Mexico is not great, but researchers have discovered certain plants can physiologically tolerate saline water. Saline water serves as a necessary stress factor for some plants that require stress to produce. For example, guayule produces latex rubber to protect the plant when stressed by extreme heat, extreme cold, or salt.

Others have reported an acceleration of cotton and wheat growth with low salt concentrations; there are reported positive results from irrigating pears with saline water. The pear research was undertaken in Iraq in an area where nothing grew--a semi-arid desert similar to some parts of the southwest.

Epstein, in California, is a prominent breeder of salt tolerant plants. He has had some successes with irrigating barley with Pacific Ocean water so perhaps his pioneer work could lead to grain production in New Mexico. (Most of our saline water does not approach the salt concentration of sea water.)

Others have considered using saline water in the production of crambe, a very high quality oil. The interest in crambe is two-fold. Oil is becoming more expensive, and the crambe plant produces an oil that can be substituted for the expensive oil used in transmission fluid. Besides it's potential as a substitute for a very valuable commodity, it is salt tolerant, although the extent of the salt tolerance awaits further basic research.

Dr. Cunningham, with New Mexico State Biology department, is working with salt tolerant grasses. If he could develop salt tolerant grasses, New Mexico's forage production for cattle and wildlife could be greatly increased. Vast areas of New Mexico are subject to pasture improvement if we had some good salt tolerant grasses.

There are other possibilities. Tom Bahr, who likes to think of exotic things, is encouraging investment in a seafood industry in New Mexico. He maintains one can produce fresh-water prawns in saline water and they grow very well. Also, production of brine shrimp, algae for protein, hydrogen, and glycerol are possible commercial uses of saline water in raw form.

Dr. Mulholland in Engineering has proposed using saline water to collect heat in solar ponds. Water convects as it heats, hence some heat is lost. His interest is to develop a heat collecting system that

will maintain pond stability while heat is withdrawn. This development requires basic research, and we are unable to fund it because there is little commitment to basic research on the utilization of raw saline water resources.

Agriculture should look closely at the possibility of developing a greenhouse industry, using raw saline water. Use of saline water in greenhouses may also purify it and, therefore, lead to recycling into other processes. Tom Bahr has some plans to develop a greenhouse evaluation project at the Roswell Saline Water Laboratory--when money for basic research in saline water use is available.

One of the most persuasive arguments for investing in saline water research is the revelation that stress to plants from withholding water is the same stress created by saline water. If a researcher develops salt tolerant plants, he simultaneously develops more water efficient plants. Researchers may need to justify projects on a conservation basis just to get to saline water research.

Additionally, if you consider the marginal cost, as we say in economics, of plant research programs it would be low. We already spend three to four million dollars a year in all kinds of plant research in New Mexico. The infrastructure exists, we have the laboratories, and the researchers to do the job, so an investment in salt tolerant plant research is supplemental. If we pursue desalting research in New Mexico, we start at ground zero and will have to import most of the technology and scientists needed for success.

Summary

As you know, economists are prone to judge various schemes through application of various rules and regulations from our textbooks. We are especially fond of the so-called "marginal conditions," and those of you who suffered through economics courses remember these conditions--marginal revenue equals marginal cost, or marginal value product equals marginal factor cost. Possibly the best economic criteria I know is "Randall's Rule." It is, "If it's such a damn good idea, why isn't someone already doing it?" This question must be answered before making a massive investment in New Mexico's saline water resources. A good answer would begin with acknowledgement that using saline water in the natural form is less expensive than desalting, that the supply of saline water is great, the distribution is global, plus good water is in short supply. So it must be a great idea--but why can't we do it?

We lack the basic research to effectively use saline water resources. For example, we do not know: what plants are salt tolerant, the condition of saline water aquifers, or the impact on soils of spraying saline water all over them. If you do not understand the physical and biological facts of life, you cannot calculate the economic facts of life. And if you do not know the economics, you cannot generate investment of consequence. Without investment, there is little development of the saline water resources.

So, in summary, and in response to the question, "The New National Water Policy: Will it Work in New Mexico?", I respond--YES! But for it to work here--stick a little basic research on use of saline water resources in your national water policy!

MORNING SESSION

WATER CONFERENCE PANEL DISCUSSION

May 3, 1979

Panel Members:

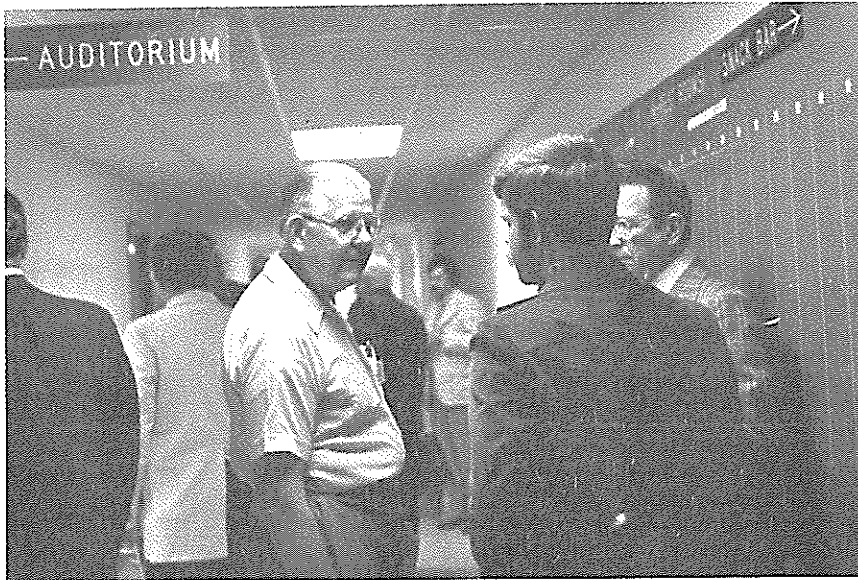
Mr. Gerald Seinwill, Deputy Director
U.S. Water Resources Council

Mr. Steve E. Reynolds
New Mexico State Engineer
New Mexico Interstate Stream Commission

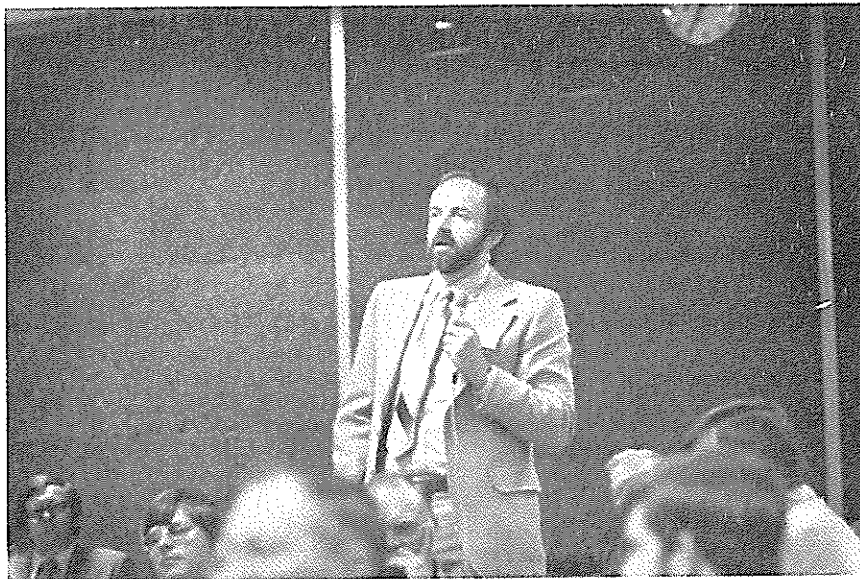
Mr. Hal Brayman, Professional Staff
U.S. Senate
Environmental and Public Works Committee

Dr. Garrey E. Carruthers, Professor
Ag. Econ. and Ag. Business Department
New Mexico State University

Moderator: Ms. Jo Carol Ropp
League of Women Voters



Productive discussions took place during the breaks as well as during the formal sessions.



Questions from the floor.

PANEL DISCUSSION - MORNING SESSION

- Jo Carol Ropp: In order to get things started, I will ask the first question. Does the federal government have any interest at all in managing state water resources?
- Gerald Seinwill: The federal government has a very positive interest in seeing that state water resources are managed, but by the state. Some states are doing a bang-up job; others are not. We obviously aren't going to name the names, but we are going to make the opportunity available to people who want to do better, to do a little more. We are essentially saying that we'll cost-share dollar for dollar with your increased effort.
- Jo Carol Ropp: Anyone else care to respond to the question?
- Steve Reynolds: I might add this to it. I am pleased by the apparent retraction of a position of the federal government in early 1977. I think it has become clear to the federal government that the states are capable of managing their water resources. I think the fight is not over yet.
- Al Utton: I have a question for Hal Brayman. You talked about the need for getting the states more actively involved in the establishment of priorities, and also of getting rid of benefit cost approaches. Would you care to elaborate on how we might involve the states more on the priority establishment?
(University of New Mexico Law School)
- Hal Brayman: Well, there are all sorts of ways to do this. A very simple way would be to evolve the current program into a state block-grant program, somewhat the way the EPA program is, and require that the state develop a priority list for the work that goes on within the state. This would require that the state make the judgement as to where they wanted to spend their money, rather than leaving that to the ad hoc approach of whether funding happens to get into the appropriations bill. Just make a certain amount of money available to the state every year and say, "Here, go to it!" Now, that's not necessarily the only solution, but it's one that would involve the state a great deal more than they are currently involved. It would enable the states to determine their own priorities and go after those priorities at the pace they wanted to. If the state wanted to spread the money out over ten projects in a given year, it could do that. If you wanted to build Brantley in two years you could

go out and say that Brantley is the biggest thing, the most important thing that we have to do, and we are going to build Brantley by the end of fiscal year 1980. Now that may not be a particularly good example, but giving that kind of authority and responsibility to the state probably, in the long run, would produce better projects than a perpetuation of the current confrontation with the executive -- this "pork barrel" approach -- that we currently have.

Wayne Hall: I cannot resist the opportunity to respond a little bit farther to that question.

Jo Carol Ropp: Would you state your name, please?

Wayne Hall: I'm Wayne Hall, Chairman of the Missouri River Basin Commission. While I concur with the concern I think I hear from both of these gentlemen about the way we are now doing business and setting priorities, I would hesitate to sanctify, at this conference or anywhere else, the block-grant approach that we have used with EPA. In fact, I think GAO had some reports condemnatory of that process that they have prepared themselves. It is one approach, however, I do agree with that. I think it is not an approach that people from New Mexico would find very acceptable. It would, in fact, reduce itself back, sooner or later, to the same kind of, I believe the expression was "pork barrel" that we have seen in the past. When these block-grants are created, they won't be created on the basis of what New Mexico needs or what Utah needs or what New York needs, they'll be created on the basis of political power. They'll be created on the basis of authorizations and appropriations developed by Congress, and that will be an expression of political power. There are other processes of sorting out priorities. The administration has suggested one in the cost-share proposals. I think, from what I have learned, that that proposal is hardly acceptable to anyone among the states. I think it will be dealt with in that way, but it is one attempt to get at the question of priorities. Another attempt to get at priorities is through the regional approach that was written into the Water Resources Planning Act of 1965. It was required that if the states agreed to enter into a regional body with the federal agencies working in that region, they would then be required to work collectively to set priorities, first in the states of the region, and then in the region, and then those priorities could be so named, so identified and then built in from the ground up into the agencies' budgets. That has yet to work very effectively, but I believe it is beginning to work. I see some signs

that that is beginning to happen. That would have cut off the "back door" approach to the powerful interests to powerful people in Congress, and that sort of change was not really wanted. I feel that the current debate over cost-sharing and other elements of the national policy will eventually lead to some sort of compromise that does cut off that back door approach. I think that's really the agenda before the nation right now in regard to setting priorities.

Jo Carol Ropp: That almost turned into a mini-speech. Would some of you like to respond to that? Mr. Brayman?

Hal Brayman: I was just going to say one thing - you imply that New Mexico is getting more than its fair share now of the dollars and therefore don't mess with the system. New Mexico, I think, in the fiscal '80 budget, with all the water development programs, the Corps, the Bureau, etc., is getting something slightly over one-half of one percent of the federal investment in water resources. Now when you consider that New Mexico is approximately three percent of the land mass of the United States and that its population is approximately a half of one percent of the population of the United States, any formula that creates some emphasis on land alone will give New Mexico two or three times as much money a year as it's likely to get under the current system. While you say a block-grant approach might not work well for New Mexico, and I'm not saying there's anything magic about a block-grant approach, but a block-grant approach probably would dramatically increase the money available to the state of New Mexico from the federal government every year for water resources development.

Jo Carol Ropp: Anyone else care to respond? Steve?

Steve Reynolds: Just a couple of points. First off, if you transfer to the states the power of decision as to what project and when, you are going to create some unmanageable interstate problems. We would be very concerned about Colorado, Texas, Arizona, what they might do without our having some political voice. The next problem would seem to be, what does this cost the states. I think it's implicit that in a block-grant program, using EPA as the analogy, you are looking at 25% local cost, which is not minimal. But, more important, the bottom line, this would seem to shift, that is allow the state to set its priorities as to Brantley, Hooker, Animas-La Plata, for example, it would seem to shift the political benefits and costs in the "pork barrel" sense, from the federal to the state level. I'm not sure that that would be better, and I'm not sure that many senators would want it that way.

Jo Carol Ropp: Anyone else care to respond? I think there's a question over here.

(Resources
Conservation
Co. of
Seattle)

Terry O'Neal: I see that I have missed 23 previous conferences. I wonder if some or all of the panel members would be so kind as to define or expand on the projected situation at Alamogordo. Is there a - can someone tell me what is going to happen there in the next years.

Hal Brayman: You are talking about the saline program?

Terry O'Neal: Yes, I am.

Hal Brayman: The Office of Water Research and Technology came up with a study identifying, I think it was 38, project proposals for the saline demonstration programs around the country. The top priority project was Virginia Beach, Virginia, and the second priority was Alamogordo. They've indicated that they are going into more active design on those two projects and the estimated cost, as rough as you can get it at this point, is \$3 to \$4 million for Alamogordo and \$6 to \$8 million for Virginia Beach. I guess my answer is that we hope we can get some funding so those projects, both of them but particularly the Alamogordo one, can begin construction work toward the end of fiscal year 1980, so that the project can be built sometime early in the 1980's. Whether that will happen or not will depend basically on whether or not we can get an appropriation.

Terry O'Neal: Sir, could you expand on your word "demonstration"? What do you mean by that?

Hal Brayman: Demonstration is a word the Congress uses to go ahead with something when Congress is afraid the public may fear a regular program would become too big; they call it a "demonstration." What it is designed to do, at least in theory, is to demonstrate in three, four, or five areas of the country, a practical application of saline technology that then can be picked up and used elsewhere by showing -- in Garrey's sense that now that it is practical -- let's go ahead and do it. We've proven the economics of it, other cities can go ahead and do it on their own. It's something less than a program that is available to everybody; it's a program that's supposed to have a short life and do a few things and then disappear. Of course, as often happens in demonstration programs, they begin to snowball and five years later they become national programs. I don't believe that's the intent of this program. The intent is to actually get out and show that this can be done.

Jo Carol Ropp: Anyone else care to respond?

Steve Reynolds: We might go just a little further on that one, if I may, and Hal, you may help me. The construction costs would be borne by the United States. The community is responsible for providing rights-of-way, easements, electric connections, a water supply, and disposal of the brine effluent from the plant. This demonstration would go on for, as I recall, three to five years, and after that time the community would take over and operate and maintain the plant and bear all costs. I'm not quite as cynical as Hal about it. I think demonstration simply means to take a proven technology and then prove it in practice.

Jo Carol Ropp: Any other questions?

Ernest Steinhoff: I've been singled out as one who promotes desalinization. I, in fact, do. I have had a plan in my office going from 1955 to 1957 which desalted water in several locations, and at that time it was not at all as successful as one had hoped, but I think it gave us quite a bit of hope. I would say that the state university now has a medium-sized demonstration plant. The New Mexico Research Institute has about a thousand gallon per day desalting plant on a loan basis for its work. I think that both ways to look at the direct use of salty water for all kinds of economic projects are necessary. It is also necessary to go on into desalting, because I can see a lot of things which can positively contribute to the economy of New Mexico if we desalt the water. I think I will pick up the club here which Garrey threw, that we compete in both of our areas. He, using the salty water, and promoting the plans for better genetic efforts, which amounts to teaching the plant to use more salty water. I think I will continue to promote getting the salt out of the water and using higher quality water for drinking and agriculture. I think both of these uses are uses which, in the long run, will promote the economy of this area and also promote the crop yields which we can achieve. Thank you.

Jo Carol Ropp: Questions or statements? Mr. Ogaz?

Adrian Ogaz: I guess we all realize that the biggest problems of water are either flood or drought. I see some people here from Washington, and I was wondering what the status was of the project they had about five or six years ago of getting water from the Missouri Valley Basin and the Columbia Water Basin. They were trying to get some of that water into the
(Mesilla Valley Farmer)

Southwest; Texas, New Mexico, and Arizona. That was pretty "gung ho" at that time, about seven or eight years ago. Now, I haven't heard anything about it. What happened to all that study and research that was done on that project?

Hal Brayman: I can answer that two ways. First of all, the Columbia River diversion is probably the one example of true thought control by the Congress. They legislated and said that no member of the Executive Branch is allowed to think about such a horrendous idea. That legislation was sponsored, surprisingly, by a senator from the state of Washington. I think the ten year period expired, or is about to expire, so that maybe people can start to think about that again at the federal level.

Steve Reynolds: It was to quit at ten, but they have set it up for another ten years.

Hal Brayman: In connection with the Missouri, I think the Ogallala study that the Corps and the EDA people are doing now, at least in theory, is going to consider possible transfers out of the Missouri. As I understand it, only ten to fifteen percent of the Missouri water is allocated now, so there is a potential to move a great deal of water out of the Missouri to other regions. Whether that is ever likely to happen is hard to say.

Steve Reynolds: I might add to that. The Corps of Engineers has undertaken reconnaissance studies for possible transfer from areas of surplus to the High Plains, so that will go ahead. Some of you may recall that Senator Domenici introduced the bill that set up this High Plains Study in the six High Plains states, and authorized appropriation of six million dollars for that study which did include importation from areas of surplus to the High Plains. That study, after some delay, is rather active and going ahead.

Jo Carol Ropp: Any other responses?

Gerald Seinwill: Maybe just a facetious comment, but Garrey asked for my help to get some emphasis on research. I'd be happy to work with him. If he can develop that salt-resistant tomato, we'll get the Department of Agriculture to name it "Salty Pete," and maybe we can get the public works image over to something else and get political support for research.

Garrey Carruthers: Pete Domenici will take all the promotion he can get.

- Jo Carol Ropp: Some other comments, or maybe statements, from our audience?
- Randall Hanson: Would Mr. Seinwill please reply to a comment by Steve Reynolds that the mining doctrine is not evil, and how the federal policy is developing around that, especially with respect to reduction of costs of water rights litigation in interstate cases and Indian affairs.
- (W. K. Summers & Assoc. - Socorro, NM)
- Gerald Seinwill: (to Steve Reynolds) Did you put him up to that?
- Steve Reynolds: No, I think he's running at me, and doing it through you.
- Gerald Seinwill: Steve says that we say that groundwater mining is intrinsically evil. I hope that's not the case. Our concern is that, if states mine groundwater with the hidden agenda that as soon as it is gone they can turn to Uncle Sugar and come in with a federal fixit project, then there is indeed a federal interest. Mining can be, is necessarily, a wise and proper use in some places, if it is coupled with a follow-on program. The problem we are facing, or will very soon face, in the High Plains is that we have mined groundwater from the Ogallala with wild abandon, with very little attention, if any, to what we are going to do when the proverbial well goes dry. The major study that's ongoing out there now, as I understand it, is not so much a technical study of the groundwater itself, but of the economic impacts of what is going to happen to those farmers and that economy when that aquifer is dried up locally and regionally and, hopefully not, totally. So we are not saying that groundwater mining ought to be never looked at or used, but we are saying that you ought to look at it with both eyes open and without assuming that there will be some bail-out coming shortly after.
- Steve Reynolds: I'd only take exception to two words - those are "wild abandon." I don't think that's the nature of groundwater mining in New Mexico from the Ogallala or in the other Ogallala states. I think that the farmers, the people that have invested money in it have gone into it with their eyes wide open. Certainly, it has been a subject of discussion in New Mexico for forty years, I'm sure. Everybody knows what they are doing. You've made two or three generations of livelihood for families and contributed a great deal to the balance of trade between the United States and foreign countries, so I think that it is no more unwise than mining oil, coal, gold, or anything else. Everybody knows that when it's gone, you quit, and you find something else

to do. Obviously, we are going to leave the door open for "Uncle Sugar" to come help and see what we do with those people who have contributed so much. I dare say it's going to be more economic to bring water from the Arkansas River than to send those people back to the New York welfare system, and we'll give you an opportunity.

Jo Carol Ropp: Any other questions? There's one over there.

Rayford Guffey: I'm an old well driller without rhetoric or diction or delivery, but I'd like to ask a question with your permission, pertaining to the livelihood of the waters in the aquifer of this valley. My questions include withdrawal, recharge, construction, and storage. I think there have been a few panic buttons pushed. I've read articles in the paper where hydrologists said we are going to be completely without water in a few years, but it's just as simple as monitoring your water level. You can go out and watch the Del Rio Drain, the flow of it is still there, some of these other drainage ditches, if it is not running at present you can dig down with a shovel a foot or two and hit water. I don't think we have touched these subjects in these meetings about this rich valley. They use the Ogallala and up there in Arizona a speaker suggests it's down 160 feet. In this valley our transmissibility and recharge is very great. These panic buttons these people are pushing, I don't think that we should compare this valley with the other valleys without monitoring the capabilities of this valley. Thank you very much.

(Guffey and Sons Drilling Contractors)

Steve Reynolds: Obviously you should not compare this valley with the Ogallala formation on the east side of New Mexico. This is not a groundwater mining situation. There's an intimate relationship between the aquifer and the river, and there are abundant supplies in storage in this valley. But you must recognize that groundwater withdrawals here do affect surface flows and if too concentrated, not wisely distributed, could have mutual interference between groundwater users. But clearly, it is not an Ogallala situation.

Jo Carol Ropp: Anyone else have a comment or want to ask a question? Mr. Dawson?

George R. Dawson: I don't have a question. I just want to make a comment. We've observed something this morning that's of interest, I think, and I wouldn't want it to slip by. We've had our first speaker who originally came from a state and took a posture on the national water plan when he was a statesman. When he became a bureaucrat he took a totally opposite view, and I think we want to take note of the expertise of our statesmen in New Mexico, and if we play our cards right we'd better make sure

he stays here to counteract those who do move to Washington and change their posture.

Steve Reynolds: There's no way they would have me in Washington. I'd like to make one comment here and sort of volunteer. I'm surprised that somebody hasn't challenged the apparent contradiction in my position that we don't want any federal money in water management, but we want a bunch of federal money and federal help in water projects. There's a certain conflict there, but there's an explanation for it. When a federal water project is authorized, the law carefully limits the authority and discretion of the agency that is going to construct and operate it, and the state plays a major, if not determinative, role in what the law says, both looking after its own resources in New Mexico, as well as the interstate relation involving those waters. They are two much different propositions, although apparently in head-on conflict.

Jo Carol Ropp: Some other questions from the audience?

Al Utton: I'd like to just follow up, Steve, on your last comment regarding the block-grant approach that Hal has talked about. Do you see that approach as offering more danger for federal intervention or intrusion on water planning and decision making in the state, or less?

Steve Reynolds: Certainly not more, as described by Hal. It could be less, but it confronts some serious problems over the interstate considerations. I think that's where you are going to get into the most serious problems - if you turn any state loose to build whatever projects it wants to whenever it wants to build them. I don't know what recourse the states have except open warfare, and I don't think you'd advocate that. If you turn them loose, that's what you'd have. The National Guard, in New Mexico's history, has been sent down to the Gila River to control the gates down there. That was a long time ago, but these interstate problems can't be brushed aside.

Al Utton: Would you care to give an example, a hypothetical example?

Steve Reynolds: No.

Jo Carol Ropp: We have another question here.

John Vandertulip: I'd like to get back to your title of the program, "Will this policy work in New Mexico." Because of the diversity of water problems throughout this country, would a policy that worked in New Mexico work in New England and vice versa?

(El Paso)

Jo Carol Ropp: That's a good question. Who wants to respond to it?

Gerald Seinwill: That ought to be my job, I guess. Well, it has got to. We have got to make these decisions about whether we are going to invest more in New Mexico and less in New England, or in neither, and put it all in Minnesota. As Hal has pointed out, there is an awful lot of back-scratching going on in making these decisions now. Our approach recognizes that that will continue and maybe is proper when what we are doing is spending each other's money to what we hope is our mutual benefit. The President, I think, initially was motivated by the fact that we could do this a great deal better, and that we could, within the same limits of that \$5 billion annual investment or in that range, by proper project selection, adding some state management and some new approaches to solving our federal water problems, that we could buy more solutions for the same money. So the policy, perhaps one of its faults is that it glosses over some of the differences between regions, but it does recognize that those differences exist and, at least on the state basis, permits each state, within what I think are some very reasonable guidelines, to tailor-make that state water management program that they will be cost-sharing for and to tailor-make the water conservation technical program that they want, so it meets their needs as perceived by the people in that state. I think we've tried to leave flexibility without total looseness and just a grand undisciplined giveaway.

Jo Carol Ropp: That's such a good question to end the morning session with. Would some of the other panelists please respond? Oh, I'm sorry, there is another question. I beg your pardon, sir.

Willie Abeele: Could you please tell us more about the impact of
(Los Alamos Scientific Laboratories)

Garrey Carruthers: No, I can't personally do that. Dr. Wierenga, who is here and an expert in that area, might be able to help you with an answer. I don't think we know all the answers. Dr. O'Connor, also from agronomy, is versed in that subject. I can't respond, however.

Jo Carol Ropp: We'll get the two of you together after this morning's session. Would anyone else like to follow up on that last question that Mr. Seinwill responded to? Are there any further questions before we break? No? Then we'll see you back here at 2:00 this afternoon.

INSTREAM USES AND RECREATIONAL VALUE OF WATER¹

Berton L. Lamb
Cooperative Instream Flow Service Group
U.S. Fish and Wildlife Service

Introduction

This subject is discussed in two parts. First is a perspective on what water resources administration in the various states is like, emphasizing the opportunities for protecting instream uses. Second is specific action that states have taken to effect the protection of stream flows. One way of understanding these subjects is in terms of change.

Change is frequent and ongoing. What administrators try to do in water management is protect against radical changes which threaten established water uses. In trying to protect against change, each administrator is rational. One defines rational behavior as including only those things which apply directly to oneself. For example, before this session began, Colonel Roth told the panelists of a complaint he had received about the lack of flood control in one area in northern New Mexico where the Corps of Engineers had built a flood control structure to protect a school located in an arroyo. The complainer's child went to school there, and he didn't think there was enough flood control. The very next week the Colonel was in another meeting and the same man stood up and said that, on another side of town, too much was being spent on flood control. He didn't live over there, so he didn't want to spend any more money on that project. One can understand instream flow needs in the context of people trying to protect their own interests.

In the development of western water law and western water management over the last one hundred years, there has been an apparent struggle for certainty: that is there has been a struggle to protect the certainty of water rights, and to understand the relative position of everyone's right on a stream system. Each right holder wants to ascertain just how secure he or she is in the use of water. With such certain knowledge one could go forward to spend money, time, and energy in developing the water. Development and growth have been promoted relative to the degree that certainty exists. However, this quest for certainty has also given rise to a certain amount of rigidity in interpretation. What is needed is flexibility in the quest for certainty so as to accommodate new uses.

¹ The views, opinions, and analyses contained herein are those of the author and do not necessarily represent the position of the U.S. Fish and Wildlife Service. The author is grateful for review comments on this article made by Dr. Clair B. Stalnaker. All errors of omission and commission, however, are those of the author.

The need for certainty has given rise to a consumptive use ideology. This ideology holds that (1) water which is not used is wasted; (2) water not used is lost; (3) only economic uses are good uses; and (4) individuals have a birthright to consumptively use water no matter what conditions exist. Such beliefs do not allow for much flexibility when new or different uses come on the scene.

While this ideology leads to rather rigid interpretations within the water resources administration community, there are some opportunities for flexibility. There are opportunities for flexibility in the law, because the law can be changed or modified. In addition, the law is often not specific. As a result, there is the possibility for flexibility in the exercise of administrative discretion.

In ideology itself, however, there is very little room for discretion because one holds his beliefs not only to be self evident but to be absolutely true. Numerous things fall into this category. First, the public believes in technicians. More specifically, they believe in engineers. The belief is that technology provides truth. But in fact most technical issues are really matters of policy. The business of technique and methodology sounds like science, but is really politics. Techniques and interpretations are chosen based upon a specific expected outcome.

Second, the cost-benefit ratio and the idea of "beneficial use" are pervasive concepts. These are perceived as inviolate. In reality, these are only ideas and as such are subject to change. They are, however, difficult to change because they are part of the consumptive use ideology.

In the face of new demands on the water resource, this prevailing ideology will change. There are various agents of change in this society. These agents are individuals and institutions whose job it is to recognize the change which is occurring in order to formulate rules and regulations which can ensure consideration of new uses while maintaining stability and a high level of certainty. Routinely these institutions need to provide answers to the following questions: What's a beneficial use? What ought to be protected? How ought the water be used? Who ought to get it first? Who ought not get any water?

I propose here a natural priority list of institutions which ought to deal with these questions. First, the state legislature should address these questions specifically, and on a frequent basis. But in many states the legislature has not considered these matters for years. This means that there will be competition among various publics. The conflict occurs because various segments of the public believe strongly in different answers to these questions. For example, environmental groups think that because the legislature has failed to address a certain issue, that issue is open to interpretation by administrators and the public. They think that the legislature should have resolved the questions; but because it has not, other remedies exist.

Second, administrative discretion provides a remedy. That is, state administrators have some discretion within the law. Given this discretion, administrators are charged to help resolve conflict. In some states, however,

this ability is constrained. Administrators may attempt to identify what beneficial uses are, unless they are clearly limited in statute; they may attempt to manage for the "best use," or they may protect some uses in the public interest. In short, administrators are constrained by statute, but they have a responsibility to satisfy the public interest. This responsibility entails paying attention to the various publics, and to the intensity of interest with which those publics express their desires.

Third, if the states do not act, responsibility is left to the federal agencies or the Congress. Occasionally federal agencies feel a responsibility because of the mandates they have received. Federal agencies may continue to advocate protection for instream uses of water; but most options put forward deal with only an incremental change in the way in which water is managed. This means that most suggestions for federal action will result in only an incremental difference in the way projects are operated, or land is managed.

In summary, the struggle for certainty has led to rigidity which has excluded some beneficial uses, this should be recognized. For example, in some states, instream uses are not recognized as beneficial. But, in order to ensure justice for all of the public, these new uses should be protected. Of course, there are other new interests, such as rapid energy development. When these new interests seek water, they seem to attack the quest for certainty. In fact, these pressures will cause some changes in the way that water is administered in the West. This change should be made incrementally by the states for their various purposes and should include instream protection.

Incremental Change

There are two kinds of change which might come about. First, incremental change includes action which may be deemed to be in the public interest, or action which may be deemed to be a re-definition of beneficial use. Second, radical change refers to challenges to current water rights or action which reallocates water from one use to another.

Nine possible types of incremental change are discussed below. First, water may be appropriated for instream purposes in some states. This means that the states have allowed for entities of the state to obtain a water right for an instream purpose for delivery from point A to point B. The water right for this use falls in priority of use with other water rights. In 1973 Colorado Senate Bill 97 allowed the State Water Conservation Board to appropriate water for instream purposes. This grants a junior water right, but also grants the right to protest transfers of use which might obstruct the instream interests on the stream. This is allowed because an injured water right holder has the right to protest a transfer or change of use. The same situation prevails in Idaho. The Idaho Water Administration Board is allowed to appropriate water for instream purposes. In Idaho, the state legislature has an opportunity to veto each of those appropriations it thinks may not be in the public interest.

Second, water may be protected through a "reservation system." This system currently causes the most confusion among water users because it falsely gives the appearance that the state is taking water outside of the

appropriation system. This system to protect instream uses is employed in Montana, Washington, and Oregon. In these cases, the state has established a minimum level below which water will not be appropriated on certain streams. This minimum flow level falls in the time of priority such that a senior appropriator could take water even though there has been a reservation established (even if he is junior to the reservation) so long as there is enough water in the stream. The reservation does not take away anybody's water rights. In this respect, a reservation is like an appropriation. In Montana, at least, there is the provision that every 10 years the state can re-think its protection of instream flows. If it has decided not to use water for instream purposes but to use it for coal gasification or a coal slurry pipeline to Arkansas, it could do that. Use of water originating in Montana for coal slurry outside of the state is now considered beneficial under Montana law.

The reservation system is quite logical. It is very difficult to understand why the state which either owns the water, or manages the water in trust for the people, should have to appropriate the water from itself to get a water right. It seems more logical that the state should reserve the water from appropriation. But there is little difference between the two techniques of appropriation or reservation.

Third, many states wish to adopt a preference list for water uses. Such a list establishes which water uses are preferred, often including instream flows for fish, wildlife, and recreation. Usually these instream uses are not first on the list. The states which have such a list are Idaho and Colorado. Recently the legislature considered establishing such a list in Montana. There are a number of reasons for such a list. (1) The list can be used for the purpose of telling which use can exercise the power of eminent domain over another use. In Colorado, for example, municipal use has eminent domain power over agricultural use. An agricultural use can exercise eminent domain power over an industrial use (if one can find a farmer with enough money to buy water rights from an industrialist). (2) A preference list can also be used as a guide in granting permits where there is conflict among uses. If two persons submit applications for different types of uses at the same time, the State Engineer could use a preference list to decide between the two. (3) A preference list could be used to amend the priority system. No state now uses this interpretation. (4) A preference list could be used as an exhaustive list of beneficial uses. Recent court decisions have stated that current lists of beneficial uses, specifically in Idaho, are not exhaustive lists. That ruling surprised a lot of people in Idaho who thought there were only four uses of water in that state.

Instream flow needs can be protected under all of these listing arrangements because they bring instream uses into the beneficial use picture. Specifically, if there is no provision for the state to apply for an instream flow water right, but such a use is on a preference list, it allows the state engineer to at least consider instream flows under the public interest rubric.

Fourth, the public interest concept for protecting instream uses is one of the most striking possibilities and it is the most difficult to implement. It provides an opportunity for protection in almost all western states, except Colorado. There are a number of ways in which instream

flows can be protected by using the public interest process. In some states there may be a moratorium on further appropriations until a state water plan is developed, or for some other purpose. Of course, any moratorium that allows water to flow protects instream uses. Any state could establish statutory criteria designed to allow consideration of the public interest. For example, rules and regulations might require consideration of the public interest in granting water rights. Where statutory provisions exist which say that in considering an application for permit, the state engineer must consider the public interest, it is possible to put conditions on exchanges, transfers, or the permits themselves.

This approach is rarely taken, however, and there are many reasons for this reluctance. One is that public interest protection can cut both ways. What is in the public interest today may not be in the public interest tomorrow. Another reason is that the process leaves the decision in the hands of only a few persons, possibly creating problems of accountability. However, several steps have been taken in this regard which seem reasonable. In the public interest South Dakota and Washington both put time limits on the permits they now issue. In Washington, the time limit for use is 50 years. After that period the state can reconsider whether it wants the water used in the same way.

Fifth, there is the water management approach. There has been a great deal of success in several western states in negotiating water management practices on various stream systems. One might negotiate with the Corps of Engineers, or with the Bureau of Reclamation for release schedules that fit the purposes of a project, but allow for instream uses.

Sixth, there are financial and contractual arrangements. Obviously, if one wants to protect stream flows, it might be necessary to purchase or lease space in a reservoir conservation pool. One would then be able to have some control over the release schedule. Another variation is to purchase and resell direct flow rights. Funds have been appropriated to the Division of Wildlife and the Water Conservation Board for this purpose in Colorado. This appropriation enables those agencies to buy some water rights, resell them downstream, put restrictions on their further transfer, and, by that technique, protect instream flows. Another related technique may be to lease water and deliver it to some user on a schedule that protects instream flows in the conveyance. These techniques are costly but a portion of the investment can be recovered for future use.

Seventh, there are interstate and federal opportunities to protect stream flows under current arrangements. One opportunity may be found in interstate compacts. Although there are a number of such compacts, none of them address the stream flow issue. Statewide water plans, however, may actually address the stream flow issue, especially in the context of interstate obligations. Furthermore, one might look at 208 plans. In its 208 plan the Northwest Colorado Council of Governments has provided for the protection of stream flows in order to do two things: (1) The COG hopes to protect the low salinity levels in their streams; and (2) they want to protect their investment in water treatment plants, which, without adequate protection of stream flow, would have to be redesigned at great cost.

Eighth, there are opportunities for federal funding. Dingle-Johnson funds, or grants from the Heritage Conservation and Recreation Service might be used for the purchase of water for instream purposes.

Finally, there is the "public trust," encompassing the concept of navigability. If a stream is navigable, it is possible to require that water remain in the stream so the river will continue to be navigable. Maintaining navigability is done in the exercise of the public trust. There is some difficulty in this because the definition of public trust responsibility may change because of the personalities involved. The basic notion is that all water management is carried on in trust for the public. Such an idea may allow public figures to be sued for violations of that trust if they do not protect instream uses.

Radical Change

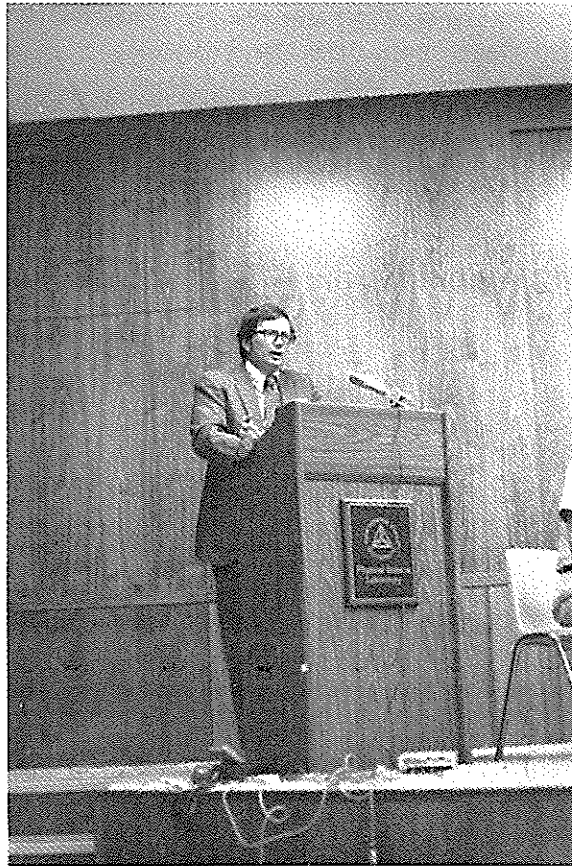
There are a number of activities which could cause radical change in water administration. Some of these changes may prove to be useful elements in water management. First, there are some obvious processes that the federal government can and does use. (1) The government owns property, and, subsequent to the property clause of the Constitution, there is latitude in managing federal property. The Supreme Court case of U.S. vs. New Mexico (No. 77-510 July 3, 1978) suggests that federal reserved rights may be more restricted than previously thought. However, a recent Department of the Interior Solicitor's opinion suggests that federal land managing agencies may have water rights pursuant to their management of land according to Congressional purposes. (2) The commerce clause regulates actions that affect interstate commerce. Of course, this means the federal government can regulate navigable streams to some extent. (3) There are also treaty powers. The United States has treaties with several countries which require that we maintain habitat for various species--such as whooping cranes. The Department of State comes into play in enforcing treaties; and the treaties have the force of the Constitution. (4) Finally the federal government has spending powers. This is the basis on which the Fish and Wildlife Service interacts with the construction agencies. Of these activities, reserved rights, the commerce clause, and treaties provide a possibility for significant changes.

Second, with regard to the states, opportunities may be more surprising. It may be possible in some states to (1) condemn water rights and put the water to instream purposes; (2) tax water rights as real property; and (3) use the state's own spending powers. The approach that might be most interesting is condemnation under the exercise of the police power. Loss of property which occurs after such action generally is non-compensatory because it doesn't constitute a "taking of private property." For example, some counties in Colorado have considered the zoning of water rights. Just as they zone away junkyards and feed lots, counties could zone water use.

Summary

Which of these approaches to protecting instream uses is chosen depends to a large extent on ideology. Ideology, or belief in what is correct, determines which approach one will favor and which approach one will oppose. Because there are many diverse interests involved, there are many situations when proposed activities will clash.

The clashes will be less severe if the states are taking affirmative steps toward protecting instream uses. It is my belief that the states are the most appropriate entity to manage for these instream uses. If the states act, the best opportunity to serve a wide range of the public is preserved.



Paul R. Turner, Assistant Professor
Department of Fishery and Wildlife Sciences
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RESPONSE TO BERTON L. LAMB'S PRESENTATION ENTITLED
INSTREAM USES AND RECREATIONAL VALUE OF WATER

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I appreciate the opportunity to speak to you this afternoon. Dr. Lamb left me the opportunity to speak particularly from the standpoint of a biologist.

Maybe some of you anticipate that I will attempt to contradict what Dr. Lamb had to say. I don't intend to do that. From a biologist's standpoint, there are some very desirable aspects of instream flows. In New Mexico, some of you probably realize that instream flows are not always recognized as a beneficial use as they benefit fish and wildlife resources.

It may or may not be necessary to change the legal definition of beneficial use, but I think that fish and wildlife resources are an important subject to consider in New Mexico. Recent data for New Mexico indicate that fishermen and hunters, not including hikers and other non-consumptive users, spend \$150-\$160 million a year in the state. Expenditures for fishing and hunting at the national level have been doubling approximately every five years, so the economic growth of fish and wildlife values is quite substantial. Also, non-consumptive users, such as hikers, bird watchers, canoeists, etc., often would consider instream flows desirable when these flows benefit their activities.

At the present time, opportunities to do something in New Mexico to enhance instream flows are not particularly good. Part of the problem is that surface waters in the state are either already fully appropriated, or in some instances, over appropriated. Unallocated flows are not available to be used for instream flows. There does not seem to be much potential for enhancing instream flows in the next few years by water conservation measures such as the use of evaporation retardants, improving irrigation efficiency, etc. If we are to develop instream flows for fish and wildlife resources in the next decade, we must either divert water from some other beneficial use or modify the prevailing manner and timing of water transfers within the state's river systems.

Some critics of maintaining instream flow feel that diverting water for fish and wildlife purposes will substantially reduce water available for more worthwhile uses. I would like to speak to that concern quickly by asking some questions about exactly how fish use water. Do fish use water up? Is the water destroyed? Is it made less usable downstream? In what way is the water used? In fact, fish are essentially non-consumptive water users. If water of appropriate quality is made available in the proper amounts and at the right time to maintain instream flows, it doesn't make any difference what that same water is used for later. Depending on the eventual consumptive use, water used to maintain or

enhance aquatic habitats can even benefit from that use. For example, water used to grow channel catfish becomes more desirable for irrigation of rice because of the nutrients added by the fish. At the opposite end of the spectrum, fish species called tilapia can improve the quality of water coming from sewage settling ponds by removing excess nutrients from the waters being released back into river systems.

Other benefits of instream flows relate to the use and enjoyment of rivers by the general public; in this case, you and I, people that use rivers for canoeing and swimming, obviously benefit. But additional aesthetic values are derived by hikers and picnickers who recreate or persons who live near rivers. As a biologist who makes a living from teaching and researching fish and wildlife resources, I am interested in endangered species like the snail darter and the Gila trout as well as populations of sport fish species that fishermen would be more interested in enhancing by improving instream flows. My upbringing in the Missouri Ozarks makes me more aware of the aesthetic desirability of rivers with permanent flows. Thus, my professional and personal background increases my interest in fish and wildlife resources and my concern for preserving instream flows. I am interested in acceptable ways to temporarily divert water for non-consumptive uses made possible by instream flows.

I think there are several possibilities for providing instream flows in New Mexico in future years. If you read the report that Lee provided on strategies for preserving instream flows in New Mexico, you will find that the authors are somewhat pessimistic about the effectiveness of several of the different strategies that were listed. I think that pessimism was generally related to the prevailing attitudes about reserving instream flows in New Mexico when the report was written. However, I see on the horizon in New Mexico, as well as in the rest of the United States, the potential for changes in public attitudes concerning the uses of water. I think it's a foregone conclusion that uses of water in New Mexico are going to change. Those changes are going to be, in many cases, influenced by economic issues. Although it may not be readily apparent to many of you in the audience, fish and wildlife resources are a major economic force that eventually will be fully recognized.

People like to go hunting and fishing. The likelihood for greater consideration being given to fisheries and water-based recreation in the future will be mandated by public pressures for enhancing these forms of outdoor recreation. How this increased consideration is handled from either a legal standpoint or a consultation standpoint is yet to be seen. But the rapidly increasing public demand for water-based recreation in the Southwest will become obvious to decision makers.

I'd like to predict a few areas in which changes are likely to occur in the near future, five or ten years from now. Lee talked about the possibility of purchase of water rights. Who is going to purchase water rights for fisheries or for other instream flow uses such as canoeing and rafting? There are actually several sources that could be utilized. One of them is in the form of an excise tax that is automatically paid by fishermen on the fishing tackle they use. There is a potential for this revenue source being increased three or fourfold in the near future,

which would amount to a substantial annual allocation to New Mexico for the eventual benefit of the fishing public. The potential for using these funds, which are referred to as Dingell-Johnson or D-J funds, for direct purchase of water for instream flow uses is a distinct possibility. In many instances, the amount of water which needs to be purchased is not large. If fairly low minimum flows were guaranteed for several state rivers, fisheries managers could either develop or enhance a sport fishery; whereas without that water, there would be no fishery or one much below its potential. So, with increased funds and the ability to predict the outcome of enhancing instream flows, the likelihood for purchasing water rights to benefit fisheries will grow in the next five years.

The possibility exists for obtaining water that could be used, let's say, in the Cimarron River Canyon for maintaining or improving the trout fishery, in a fishery that obviously has a high economic value. The New Mexico Department of Game and Fish, Cimarron Chamber of Commerce, or maybe even a public interest group like Trout Unlimited could decide to purchase a water right that would permit more effective management of that fishery. I think the potential for that happening in the future is quite good.

Fish and wildlife resources, specifically fisheries resources, may well be in a position to compete for the use of water in the future. Now before my comments raise any red flags to the farmers in the audience, those of you in the Mesilla Valley that are irrigating crops right now are actually fairly dear to my heart. I irrigate ten pecan trees myself, and I would just as soon see water continue to come down the Rio Grande. Think about that, though, in the context of additional values that irrigation water might have before it reaches your fields. In other words, would that water have any other beneficial uses before it reached this area to be used for irrigation? I would have some rather significant uses for water-based recreation which would not reduce water for agriculture in any way. If Elephant Butte Reservoir is considered from a recreation and fishing standpoint, millions of dollars are spent each year by New Mexicans and non-residents, especially from Texas. This reservoir has obvious economic value to the state in addition to its designed purposes of power generation and irrigation. The development of tailrace fisheries below Cochiti and Elephant Butte reservoirs, which might maintain salmonoid or other fisheries, is possible. A potential beneficial use of that water has not been realized simply because it has not been attempted.

Another major strategy for reserving instream flows in the future is through consultation between state and federal agencies. Colonel Roth mentioned that the Corps of Engineers are not necessarily the bad guys any more. Although there are some people and environmental groups that might disagree on specific water development projects, I have a number of biologist friends that presently work for the Corps of Engineers. I know their credentials; I know that they are very honestly considering alternatives which conserve aquatic and fisheries resources. I think that good potential exists for reserving instream flows by consulting with various state and federal agencies. I think this strategy will become more and more effective as the public becomes aware

of the fact that instream flows are in many respects desirable for them. Favorable public opinion for maintaining instream flows will facilitate new approaches to water use by resource managers.

Another strategy that I feel has a rather good potential is water management. Lee mentioned this option towards the end of his talk. I think there exists methods of managing water so that it can be used for many beneficial purposes, including maintenance of instream flows. Water management for the highest economic gain should not exclude instream flows which are essentially non-consumptive uses of water. Think in terms of what would be needed, for example, to maintain a year-round fishery in the Rio Grande between Elephant Butte and Caballo reservoirs. A fairly small amount of water released from Elephant Butte Dam during the non-irrigation season would maintain a year-round fishery. Of course, the water released would not be lost, but stored in Caballo Reservoir for use during the next irrigation season. This storage might cause some minor losses that would not be obvious; primarily in the form of greater evaporation from a shallower reservoir. The water lost because of increased evaporation would be the water consumed and paid for to maintain the instream flow needed for the fishery; not the water that is stored and eventually released from Caballo for other downstream uses such as irrigation.

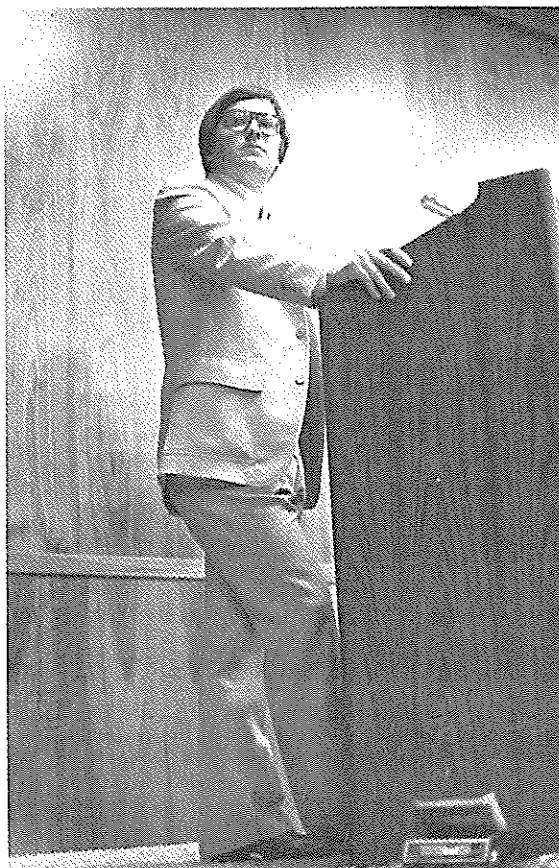
In summary, the main point is that I am not only a biologist interested in fisheries, but also a citizen concerned about the most beneficial use of water to benefit both the state's economy and quality of life. I am not out to take the water away from somebody without proper reimbursement. From a recreation viewpoint, I would prefer some water staying in the stream and being used consumptively farther downstream. The longer water stays in the stream the greater potential it has for being used by more people for more beneficial uses.

Presently, an interdisciplinary group of researchers at NMSU, including myself, are examining the many beneficial uses of water in the Rio Grande drainage. What is it presently used for? What is it likely to be used for in the future? What is the potential for maintaining instream flows or minimum pools in reservoirs for recreational purposes? I think many of these questions need to be considered. Although some water uses may not be very likely in the next five years, eventually public pressure or increased federal/state interaction, combined with knowing specifically what is needed to maintain a fishery of "x" economic value, should enhance the likelihood of water management oriented towards maintaining instream flows.

I'm sure there will be some questions asked later that I will try to answer. Lee will be able to give you the broader national perspective. I look at instream flows from the standpoint of New Mexico, flavored by my Missouri and Oklahoma background. I think that water is very valuable in New Mexico; probably its most precious commodity. It is a resource that is likely to become the state's most seriously limiting commodity at some point in the future. The possibility of saline waters - who knows? At the present time our surface waters are a most precious commodity.

I will end by again saying that recreational fisheries should be considered a valuable part of our water resource and managed accordingly. Remember, fish and wildlife are basically non-consumptive users of water.

Thank you.



Thomas Lera
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UPDATE ON SECTION 208

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I'm going to talk about the 208 program. 208 is a section in the Clean Water Act. The Clean Water Act was originally called the Federal Water Pollution Control Act, and it was adopted by Congress in 1972. Initially, President Nixon vetoed the act and sent it back to Congress. Congress overruled the veto and enacted the law.

There are several sections in the act that lead up to 208. There is Section 106 which is the State Water Pollution Control Program. There is Section 201 which is the Construction Grant Program that provides funds for building sewage treatment plants. Approximately \$11 billion have been spent in the nation today building sewage treatment plants. It's the largest national public works program in the history of the United States. There is Section 303 which allows the states to set water quality standards to obtain those uses. Then there is Section 208.

Section 208 is the umbrella section. It's an area-wide or state-wide water quality management program. As a comparison, Section 201, the Construction of Wastewater Treatment Plants, deals only with issues of municipalities, a single-point source. When you have several point sources within a watershed, you have an area-wide problem.

Back in 1976, the state of New Mexico made a commitment to enter into the 208 program and was awarded a grant from EPA for approximately \$1.14 million. They completed the plan, except for four portions which will be completed this month. The plan has several significant accomplishments. One of them was a study on silviculture with determination of best or current management practices to control water pollution problems resulting from silviculture practices. New Mexico also completed a state-wide rural sewage management study, specifically, several state-wide recommendations to alleviate the pollutional effect of septic tanks. They've initiated a very strong groundwater monitoring program in the Grants mineral belt area. The state approved the plan, certified it to EPA, and EPA approved it conditionally. The reason we approved it conditionally was that we felt that there were additional issues within the study areas that needed additional research. This further substantiates Professor Carruthers' point that we need additional research; we need additional data, in order to determine whether or not we have a significant problem. If it is found that we have a significant problem, then we have to come up with a sound course of action in order to make a decision to resolve that problem.

Nationally, there are about two hundred twenty five 208 programs on-going; that includes state-wide and area-wide programs. An area-wide program, for instance, may be a council of governments; it may be one county. Madison County in Wisconsin is an area-wide; the Dallas-Fort Worth region is an area-wide. So there are about 225 of these around the nation. To date, 155 have been completed. Out of those, there have been 87 certified by the states; and EPA has approved 49 of them.

Although these are some good figures, OMB (the Office of Management and Budget) is asking us some very serious questions. So far we've obligated approximately \$200 million for 208 plans nation-wide, including Alaska, Hawaii, and the trust territories. What have we gotten for this \$200 million? We've developed a lot of very valuable information to determine whether or not we have problems and if we have problems, how to reach a solution. OMB is asking us, "Well, now that you've identified the problems, what are you going to do? How are you going to solve them? Why do you need more money to do it?"

We need more money to keep the program going. The 208 program is not a static program; it's a very dynamic program. Technology is continually changing. With changes in technology, the political situation is continually changing. Ongoing planning is needed in order to make policy and decisions. The 208 program is supposed to address water quality problems of the states. The bottom line objective is to achieve an acceptable level of water quality and this acceptable level is fishable/swimable. That is defined by the states in their water quality standards - what they feel fishable and swimable waters are. If an acceptable water quality is not achieved, the consequences are fairly obvious: there may be increased health hazards; there may be a reduction in the economic growth; and there may be an overall decline in the quality of life in an area. If we achieve water quality goals, ongoing planning is needed because it is a dynamic world that we live in. Technological changes and shifts in resource availability are happening every day. The ongoing planning process is an effective means of integrating activities such as design and construction of wastewater treatment plants, monitoring of stream water qualities, and performing assessments. The 208 program isn't going to be a one-shot program. It's here to stay. The results can be used in other areas.

Recently there was the court case of Gonzales versus the United States Government and ABAG (Association of Bay Area Governments in San Francisco), No. C-76-2039 (N. D. CAL., Oct. 26, 1978). Mr. Gonzales challenged the government saying that some of the 208 funds were used to support other programs, for instance, air quality activities. The court stated that the problems of air, solid waste, and water pollution are enormous and that only a coordinated attack on these and other problems have a possibility of success. As planning in these programs continues, the 208 plans must be revised and reviewed in order to mount a coordinated attack on these inter-related problems. The 208 program can be used and will be used to address other issues besides water.

The key to the 208 program is implementation. We have spent over \$200 million on the 208 program and we do not want the 208 plans to result in unimplemented plans. The 208 plans are not going to be put on the shelf and collect dust.

In order to make the 208 plans work, various management agencies, whether they be state or local, have to implement the portions that they have direct responsibility for. The state or local agencies have to be accountable to insure that these plans and responsibilities are carried out. In light of this, EPA has targeted to the state of New Mexico about another \$1.3 million over the next two years for ongoing planning studies. We feel, and I think the state also feels, that these funds may only be the tip of the iceberg in the amount of funds that are needed to solve and determine whether or not we have problems.

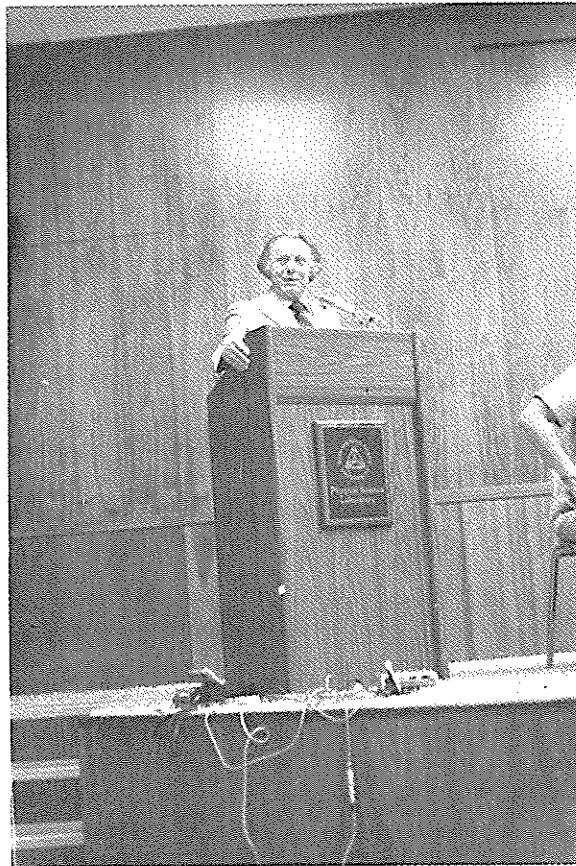
Some of the areas that we are going to address in the ongoing program are going to be: Is the irrigated agriculture a problem? If so, how do we resolve it? Are the toxic wastes in the middle Rio Grande a problem? If so, how do we solve those? What are we going to do with the groundwater problems in the Grants mineral belt area? Or is there a problem?

The 208 program, along with the other Clean Water Act programs, the Clean Air Act programs, the Safe Drinking Water Act programs, and the Resource Conservation and Recovery Act programs (which cover solid waste and hazardous materials) are only a few of EPA responsibilities. EPA is divided into a division of functions. We have a water division; we have an air and hazardous materials division; we have an enforcement division; we have a surveillance and analysis division. We try to coordinate activities between divisions, but sometimes we are not successful.

What we have developed as an outgrowth of the 208 program is an internal control mechanism; it's an internal control mechanism that's used both at the state and federal level. This control mechanism has resulted in a very carefully balanced scale of shared functional responsibilities at the state and federal level. The title of this shared responsibility document is "The State-EPA Agreement." It is something brand new that has come out in the past three years. The document is basically a management tool that the state and the federal government can use jointly; it's a bilateral agreement. It's also a communications document. The agreement highlights specific environmental, health, or institutional issues at the state level and how they want to address them and resolve them. It is a document where commitments are addressed, both on the state level and the federal level. There are some activities in it where the federal government will take the lead and the states will assist us and at the same time there are other activities that the states will take the initiative with federal assistance. Hopefully, through this agreement, we can provide a linkage among the various programs: solid waste, drinking water, clean water - and we can resolve some of the problems that the state of New Mexico faces. EPA can provide some

financial and technical assistance to the state to address these issues and to solve them. In order for this system to work effectively, however, the lines of responsibility need to be very clearly defined for both the state and federal agencies.

To close, I'd like to recall what one of my college professors in graduate school told me. His name was Richard Murphy. He said, "When left to themselves, things always go from bad to worse," and I hope that we don't reach that situation in New Mexico.



William P. Stephens
Director
New Mexico Department of Agriculture

RESPONSE TO THOMAS LERA's PRESENTATION
ENTITLED "UPDATE ON SECTION 208"

William P. Stephens
Director
New Mexico Department of Agriculture

I would like to begin with a little background, going directly to the agricultural area rather than all of Section 208. As Tom Lera mentioned, the Federal Water Pollution Control Act has as a part of it the "Declaration of Goals and Policies." As amended, Section 101 states,

"The objective of this act is to restore and maintain the chemical, physical, and biological integrity of the nation's water."

And under that it says,

"It is the national policy that area-wide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each state."

Following on down under that planning process, "Area-wide Treatment Management," and that's your Section 208,

"For the purpose of developing and facilitating the development and implementation of area-wide waste treatment management plans, be, not later than one year after the date of designation of any organization under Subsection A of this Section, such organization shall have in operation and continuing, area-wide waste treatment management process,"

and that, New Mexico did do,

"and any plan prepared under such process shall include, but not be limited to,"

and here is where it comes to agriculture,

"a process to (1) identify, if appropriate,"

and there is some question sometimes as to the appropriateness of some of our actions,

"agriculturally and silviculturally related non-point sources of pollution, including return flows from irrigated agriculture and their cumulative effects, runoff from manure disposal areas and from land used for livestock and crop production; (2) set forth procedures and methods including land use requirements to control to the extent feasible such sources."

This brings you through the law up to the Section 208 as it applies to agriculture. The Water Quality Control Commission is the state agency designated as the planning agency. Under the Water Quality Control Commission, the Environmental Improvement Division is designated to implement and follow through on the plans. That's where we are as far as getting down to the plan.

The state plan was submitted in October, 1978, by Governor Apodaca. On March 1, 1979, we received a letter from the Regional Administrator, as Tom indicated, giving tentative approval, or approval with certain conditions. There are several comments that I will get to in a minute relative to our plan, but I have a note here from a commissioner that I will read. Not everyone feels that our state plan was as strong as it should have been. Not all of the commission members completely agreed with that.

In the commissioner's note, for example, "I do not believe that the plan goes far enough in carrying the state in the direction of greater control over its non-point water quality problems. The plan, which is more a program than a plan, calls in most cases for continuing studies. Any effort to initiate implementation is deferred. Data collection and studies have been underway for years. The danger we face is that, in the name of data collection, corrective action can be postponed indefinitely." Another point, "I do not believe that we have addressed the central issue of 208, the establishment of a regulatory program." So that is an opinion of our plan.

Some of the comments that came back from the region on non-point source pollution, and this is directed to irrigated agriculture, "Non-point source pollution problems from irrigated agriculture have not been quantitatively identified. A description of the seriousness of the effects of these waters has also not been identified. The state must complete the analysis of the severity of non-point source pollution problems from irrigated agriculture and make a relationship to the water quality standards. Additional data and analysis must be provided to support the conclusions of problems or no problems. Best management practices should be developed for those non-point source problem areas identified."

Another area that they point to is again the regulatory programs. "This element is not addressed in the initial plan, however should needs be established, the state must take necessary steps to address the problem."

So, those are some of the comments on just two areas of the proposed state plan. In the irrigated agriculture section of the plan as submitted by the state, we did not mention best management practices (BMP's). I think there was good reason for that. I did not feel that we had hard data upon which to establish these BMP's. If we go on identifying BMP's to try to solve problems, when we don't know what the problems are, I fear we might get into difficulty. Once best management practices are identified, they could well get established as regulations. Knowing irrigation farmers, I think they need more freedom than the best management practices that the staff first recommended would allow. Again, in my opinion, the data were not there to identify the problem areas in irrigated agriculture before we could go to a best management practice recommendation.

There are two things; one is that we could not identify a problem, the other that we could not have a regulatory part until we knew the problem we were trying to solve.

The sedimentation area was not addressed at all in our first submitted plan. Irrigated agriculture was addressed, but the rest of the agricultural sector was not. That sedimentation study has been completed, and we have a March 22nd preliminary draft. There were public hearings on the 18th of April in Santa Fe, and if my dates are correct, on the 22nd of May the Water Quality Control Commission will address this issue and make some kind of decision on it. It will not be a public hearing, it will simply be the Commission examining and passing judgement. As I look at that study, most of the information contained in the report is not based upon what I call hard data or research facts. Mostly, estimates were made on sedimentation. The estimates were based on soil types, slope, vegetative cover, and similar functions. Now that isn't to say that it's all bad, because I think the people that put this together are knowledgeable in this area. They did go to the county level and get a lot of input on this, but I guess what I'm saying is that they did not have the hard data that say, "This is what is going on out there." In the draft copy there are a number of best management practices recommended. In general, I would say the practices recommended are good. In fact, most of those recommended which came from the Soil Conservation Service, have been implemented by ranchers for a number of years. I even contend that, as a result of some of those practices, we might even be better off on sedimentation than if this thing had been turned loose for Mother Nature to handle. I think our ranchers have done a good job in many instances in implementing these best management practices that are being recommended now in the program. Some of those management practices are not always economical for an individual farmer or rancher. Society may have to move in and carry some of this burden. As Tom mentioned earlier, some of those 208 funds will be available for implementation of these plans.

When reflecting back to the Environmental Protection Agency and the cooperation between the federal agency and the state, I feel that it has improved in the last three or four years. I think the closer we get to New Mexico in the decision-making process, the better cooperation we have. We've found, in our pesticide work as well as in our water quality work, that some of the people back in Washington who make the decisions are not familiar with the West. Conditions back on the East Coast are extremely

different from what they are here, so previously there was an educational problem. The decisions being made now, however, are more by technical type people that are knowledgeable in the area and are working with us, not by the attorneys; so I am encouraged that we have had better cooperation in recent years with EPA than in the past.

Thank you.

AFTERNOON SESSION
WATER CONFERENCE PANEL DISCUSSION

May 3, 1979

Panel Members:

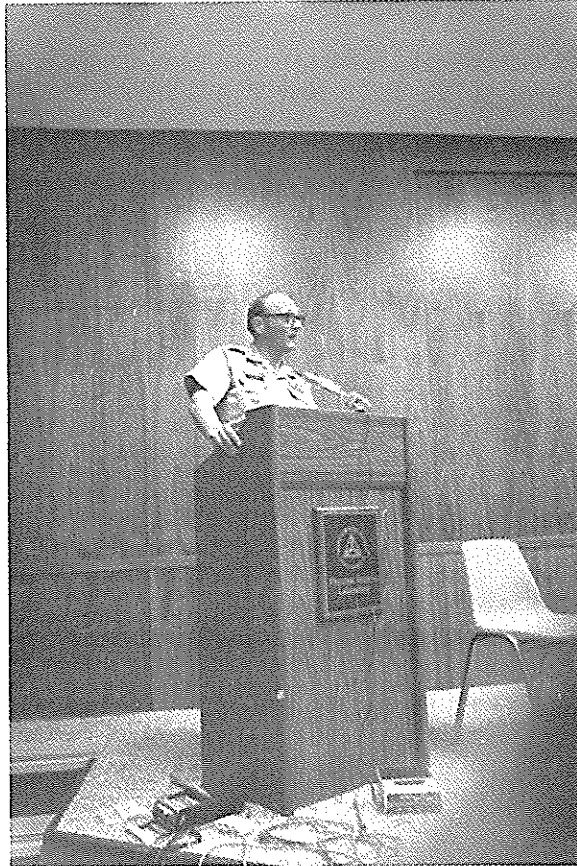
Dr. Berton L. Lamb
Cooperative Instream Flow Service Group
U.S. Fish and Wildlife Service

Dr. Paul R. Turner, Assistant Professor
Department of Fishery and Wildlife Sciences
New Mexico State University

Mr. Thomas Lera, Section Chief
(Oklahoma and New Mexico)
Water Programs Branch
U.S. Environmental Protection Agency

Dr. William P. Stephens, Director
New Mexico Department of Agriculture

Moderator: Colonel Bernard J. Roth
District Engineer
Albuquerque District
U.S. Army Corps of Engineers



Session Moderator
Colonel Bernard J. Roth
District Engineer
Albuquerque District
U.S. Army Corps of Engineers

PANEL DISCUSSION - AFTERNOON SESSION

Colonel Roth: It's time for us to get started - and I'd like to remind you about the four splendid-looking fellows sitting in front of you: you've got Lee Lamb from the Fish and Wildlife Service, and Tom Lera from EPA; and our two resident non-federalists, Paul Turner, biologist-zoologist from the Department of Fishery and Wildlife Sciences here at New Mexico State, and our resident farmer, Bill Stephens, Director of the New Mexico Department of Agriculture. They will try to answer any questions you have or respond to any comments you would like to make on instream flows or clean water or just about any subject you want. We still have some of the panel left from this morning, and this is the last formal session, so if you still have something on your mind this is your chance to get it taken care of. Questions or comments? Al?

Al Utton: On the legal aspects, in spite of all the jokes, we have to respond a little bit, it seems to me, on the question of instream flows in New Mexico and the legal situation. In New Mexico, to appropriate water, you have to divert it with the intention to appropriate it for a beneficial use. So, from an instream flows point of view, in New Mexico, the use of water for fishing and recreational purposes is recognized judicially as a beneficial use. So we are OK on that prong of the two prong requirement. The difficulty that we hang up on is the question of diversion, a man-made diversion. Frequently water flowing down a stream has not been diverted from that stream and therefore cannot qualify as an appropriation under New Mexico law. For example, in the Miranda case, you had a farmer that was grazing his cattle on grass that was grown from a diversion which was a natural diversion. The court held that that did not constitute an appropriation under New Mexico law because the diversion was not a man-made diversion. So, under New Mexico law it is a beneficial use for recreation or fishing, but that's only one of two requirements that you have to satisfy to appropriate, and the other one is a man-made diversion. That law could be changed, probably judicially, and certainly legislatively.

Colonel Roth: Comments, Paul?

Paul Turner: There are many cases where you might want to divert water to develop a fishery. For example, a large channel capable of handling thousands of cubic feet per second might be very difficult to manage from the standpoint of fishing, whereas if you could divert a smaller amount of water down a narrower side channel with pool-type habitats, you might, in fact, fulfill both prongs of the requirement.

Al Utton: I think that's certainly true under Red River Valley Company case, which involved the Conchas Dam. That is where the court said that fishing and recreational uses are a beneficial use. There you did have a diversion; it was a reservoir situation. In that kind of impoundment situation you wouldn't have a problem in New Mexico. It's in the flowing stream type of fishing where you would not have a diversion and legally you would have a problem. There are lots of other lawyers, so we might get another opinion. Tillotson?

Voice from : You are doing OK, Al.
back of
auditorium

Colonel Roth: There's no question if there's another lawyer here we'll get another opinion! There's another lawyer, the State Engineer.

Steve Reynolds: I might just add the Engineer's view. Of course, I agree with everything Professor Utton has said, but I think that the important thing is that while there is no such thing as an instream water right in New Mexico, it doesn't mean at all that there are not benefits from water in the stream. It's simply not a beneficial use and could not be made such a beneficial use in my opinion without amending our constitution. The very important thing about the doctrine of prior appropriation is, in New Mexico's case, use of water in New Mexico is governed by international treaty, interstate compacts, Federal District Court decrees, Supreme Court decrees, and water rights granted under state law. All of those elements have the effect of providing some very important instream values to New Mexico's water. The other very important thing is that the geography and land ownership pattern in New Mexico does a great deal to protect instream values. Our mountain streams don't offer many good storage sites. They are still there; there's still good fishing. I think it was Paul that touched on a very important way that you can manage instream values under the appropriation doctrine, if you have money. If you can rearrange the stream so that the

senior rights are at the end of the stream, you can maintain some values. So there's nothing about the doctrine of prior appropriation which is antithetical to instream values. I think most New Mexicans agree that we still have some pretty important instream values in New Mexico and I expect we are going to keep them.

Lee Lamb: I don't want to disagree with anything that either Professor Utton or the State Engineer said, but I'd like to say two things. Generally, political scientists have three things, but I couldn't think of three things here.

There are two different kinds of arguments. If you talk to the classic environmentalist, he will say to you that what we need to do here in New Mexico or anywhere else is change the law. "If we could just change the law we could protect stream flows." Well, my view is that if you could change the law you wouldn't have to change the law. If you could change the law, then people would already be doing things the way you wanted them done anyway. I think changing the law is a very difficult problem. Now if you could change the law, you would want to write in specifically that instream flows were beneficial use and that you could have an appropriation or at least that the state could have an appropriation (I somehow don't think it's appropriate for an individual to appropriate for instream flows) for instream values. If you do that, you are allowing the body which represents the public to protect the instream value, and you would therefore assure yourself that if you didn't like what they were doing there you could throw the rascals out.

That's on the one side. On the other side is sort of the situation which Mr. Reynolds has indicated. It seems to me that what we are looking at in New Mexico are the ways in which we could manage the resource to provide for multiple benefits. We are very interested in that approach to the protection of stream flows, particularly where there isn't the kind of clear statutory language which would allow for the other kind of protection.

There are a number of states which have analogous situations to the one that you are talking about with regard to instream flows. One of them is California to some extent. They also have a provision which says that you can't have a water right unless you have something akin to possession of the water. Diversion is one way to get possession, impoundment is another way, and they have also allowed some kind of a measuring device as one way to get possession of the water.

There have been two cases in California which we have been following rather closely. One is the Fullerton case and the other is the California Trout case. In one case a private party tried to appropriate water for instream purposes without any kind of diversion or control and in the other case the State Department of Fish and Game tried to do so. One was upheld in a Superior Court, which is a low court, and one was not, and they were two different courts. They were then brought up on appeal, and both appeals courts said that what was lacking was the "akin to possession" test. That is, nobody had possession of the water. The court didn't even say that Cal Trout had no standing to bring the action. They said that if Cal Trout had some kind of control over that water, the club could have a water right to protect fish and wildlife.

The courts felt that the State of California has the ability on specific rivers to refuse to appropriate below a certain level. They can do this stream-by-stream, although the state doesn't do it in a very comprehensive way. So the court was saying that California already has a way to protect stream flows.

In our booklet entitled Instream Flow Strategies for New Mexico, we argue that New Mexico has similar potential for protecting instream uses to California. I think I know what Steve would say about the strategy which our booklet identifies. We argue that there is some potential under the State Engineer's authority to consider the public welfare, and in doing so, if he finds that an application would be detrimental to the public welfare, he could reject a water right permit.* It's an interesting thing for discussion and that's essentially what the situation in California is. The State Engineer may have discretion within his consideration of the public welfare, and within that consideration may set a flow level that he won't appropriate below. That doesn't mean that you can't transfer or sell your water rights, except that you would have a base flow level there.

Apparently in New Mexico, the State Engineer, and you can speak to this, I wish you would, too, has some ability to do this, but it is severely constrained, it seems to me, in the statutes. This is one thing that people bring up to me all the time.

*The booklet Instream Flow Strategies for New Mexico has been amended regarding this point. After careful analysis and review, corrections and further qualifications are made.

Steve Reynolds: You said you knew what I would say; let's see if I can surprise you. As I recall, it says the Engineer may consider the public interest. That's a little different from the public welfare. I have sought advice on that, and some of you may remember that Judge Irwin S. Moise, who was then a Supreme Court Justice, presented a very scholarly paper on just that point some years ago, and while he was my legal advisor he convinced me that that was, as you have said, very limited. I clearly could not, under that clause of the statute, allow, or if you like, prohibit diversion to preserve instream rights, fundamentally because of the constitution itself. It says the water belongs to the public, and is subject to appropriation in accordance with law. Beneficial use is the basis, the measure, and the limit. The court has already, as Professor Utton has said, said that appropriation for beneficial use, requires a man-made diversion. So I think that there is virtually no latitude for the Engineer under that public interest clause of our statutes. Judge Moise said, as I recall, that the Engineer could act to deny an application or grant one instead of the other where there is reason to believe that there is some kind of fraud involved. That was the one case in New Mexico where they thought that someone was trying to sell acreage for farming with simply not enough water in the river at any time to support the promotion that they were making, and the Engineer was proper in denying the application for that reason, but that was about the limit of this public interest provision.

Lee Lamb: I think that this leads to another, and a very important consideration with regard to the new Malomes decision in California and the prerogatives of the State Engineer in that regard. It seems to me that the State Engineer could condition the kind of permits which the Bureau of Reclamation or the Corps of Engineers may come to have to obtain in terms of the projects which they are building. That kind of condition, while under the constraints you have just talked about, might not talk to instream flows themselves, but might speak to the beneficial uses which the Corps or the Bureau plans to put the water to. If the State Engineer determined that inefficient use was going to result from the project, he could deny the permit. Now this doesn't mean that we would get instream flows from the state, but it does mean that the Fish and Wildlife Service would jump on that like a chicken on a Junebug. We would argue with the Bureau or the Corps that what they would have to do, since they already have authorization for the project, is to get the Congress in a reauthorization to speak directly to the instream flow values.

Of course, if the Congress authorizes a project which is to provide those values and says so in specific terms then the project would have to operate according to the Congressional mandate. We'd then go back and talk to those agencies and say that what they need to do would be to manage the project in such a way that it would provide the instream uses and perhaps deliver water downstream to beneficial uses.

Colonel Roth: I think we had a comment back there. Go ahead, sir.

Mark Burrough: I was wondering if a transfer from one reservoir to another reservoir, say from an irrigation reservoir to a flood control reservoir, would that qualify as that type of diversion? Like the Rio Chama between El Vado and Abiquiu Dams, supplying instream flow in that stretch of river, would that be a beneficial use? You wouldn't actually have a loss of water, you would just be transferring water.

(Department of
Fishery and
Wildlife
Sciences,
NMSU)

Colonel Roth: Steve, do you want to address that?

Steve Reynolds: I think the example with Abiquiu, with a flood control reservoir, is probably misleading. But let's assume an irrigation company had an upstream reservoir and one downstream, they can release from the upstream reservoir, prohibit any diversion of their water - let's assume the stream is dry except when they are making releases - they can prevent diversions of their water released from the upstream reservoir down to their downstream reservoir. I think maybe I can help with the point if I sort of volunteer a little bit. There is, in New Mexico, precedent for federal legislation authorizing a federal project, requiring a certain minimum release from that reservoir. That gives you some instream benefit. Now, that's no instream right. That is, the State Engineer cannot prohibit somebody from diverting and using that water bypassed through the reservoir, but in those instances that exist, as a practical matter nobody is going to do that. They can't. So you do have, under federal law, a created instream value that otherwise would not have been there. Now let me give you the outstanding one, which is not based on a requirement of federal law; that's Navajo Dam and Reservoir. Prior to the construction of Navajo Dam, authorized in 1956, that stream furnished marginal warm water fishery. Under the present operation of that dam and any reasonable operation that anybody can see, we have some seven or eight miles of what has been characterized as the finest trout fishery in the West. That goes to your point, Lee, of coordinating the conservation of water and realizing the maximum instream values. That, to me, is a beautiful example.

Lee Lamb: As we look at more and more projects we are going to be talking about more of what I guess the Colonel would say were "clever means" to protect stream flows. Something like negotiating transfers and exchanges so we can have a flow through a certain area. While you would do it with the expressed purpose of protecting stream flows, all the transfers and exchanges would be to other beneficial uses. The State Engineer's office is bound to protect all those transfers and exchanges which are done legally, and thereby you'd be protecting the stream when you wanted it.

The technique in Colorado where they intend to buy an upstream senior right and sell it downstream, but in the sale prohibit the resale at a later time upstream, is the kind of business that goes on all the time anyway. It is a way that the state can take its money and roll it over several times to protect more and more stream flows. It does get diminished each time because you have to absorb some transportation costs, but it's another technique. We think there are a number of opportunities to do that, and look forward to working with state water resource administrators in the future to work those things out. The outfit that I work for is very much into that kind of ball game, at the same time advising fish and wildlife service people on how to get the Corps to do what we want. It's not always easy, but we try.

Colonel Roth: I'm just the moderator, guys. Don't pick on the moderator. Yes, sir?

Adrian Ogaz: I would like to know whether something has been established as to priorities of beneficial use. Which use has priority over which other use, because we had a problem here in the valley several years ago. Elephant Butte Dam was made by man for irrigation. Then somebody at Truth or Consequences got a court order and they closed the gates up there and wouldn't let us use the water for irrigation, so I was wondering if it had ever been established which use has priority over what - like fishing and recreation over irrigation or farming. Has that ever been established in any court of law?

(Mesilla Valley Farmer)

Colonel Roth: Steve, that's in your area. Would you answer it, please?

Steve Reynolds: That's clear, I think, in our constitution and statutes. All beneficial uses are on equal footing. They are all the same, except that municipalities, counties, and the state have the power to condemn water rights for public purposes. Other than that, every beneficial use is as good as the next. Priority of appropriation is what

controls. In the incident you mentioned, as I recall, the court order didn't hold up. As a practical matter, though, the limit on pulling down a reservoir operated by the United States, at least, is public health. The last time we left water in Elephant Butte was when it fell to about 35,000 acre-feet and the district and/or the bureau decided they should not take more because of the threat to public health from dead fish and things of that nature. But the right to drain that reservoir, except for the adverse effects on the public health, is clear.

Adrian Ogaz: Then public health has priority over everything else?

Steve Reynolds: Not as a water use, but as a part of the police power of the state and the federal government.

Colonel Roth: That's part of operational control of water impoundments. Public health and safety take first priority in everybody's book. Lee, did you want to comment on this from your point of view?

Lee Lamb: Yes, it's not really priority in the sense of my date against your date. It's preference in that respect. It's also the police power, as you brought up. I think it's very interesting, and we should understand that under the police power the government can act in a number of ways, and can take property without compensating. The fact that they withheld water for public health purposes is not terribly surprising, and the fact that they did not have to compensate anybody for it is pretty well understood and established. The same thing they would do, for example, if there was a break in the sewer main. They might ask you to leave your property for the time being. They don't have to pay you for the time that you would be out of business.

Colonel Roth: We have a question here.

Jim Hughes: Regarding the Section 208 program. What happens in, let's assume, three or four years using the data that Dr. Stephens talked about and the conditional approval, they determine that best management practices are necessary in regard to irrigated agriculture. Who will determine the best management practices; will this go back to a public input session? I guess what I'm getting at is that, if it ever comes to best management practices, farmers would like to have the input to determine whether these best management practices are economically feasible given the price they receive for their products.

(New Mexico
Farm and
Livestock
Bureau)

William Stephens: I might try to answer that. We do have an expert in the audience here in the person of Cathy Callahan in case I bog down. If I understood your question, Jim, I would say that the public will have an opportunity for input as we establish best management practices. I think first of all, we will have to determine that there is a problem to solve. I would assume, Cathy, that as we go down the pike, any changes that are made, the public will be allowed to have input. She says that is correct, so I would say yes, that at every point of change the public will be allowed it's say.

Steve Reynolds: I have a question. Is it clear that economic feasibility would be a controlling factor in the adoption of best management practices?

William Stephens: Gentlemen, to my knowledge it is not clear that that would be necessary before this is adopted. I think that has some real implications. As I indicated earlier, it may not be to the benefit of the general public that you do some of these things, but it may not be economically feasible to the farmer or the rancher to do these things.

Colonel Roth: Tom. do you want a federal input to that?

Thomas Lera: Yes, I'd like to agree with Dr. Stephens here, and go one step further. Public involvement is a two-way program. It stresses public participation, public involvement. Secondly, the plan is a very flexible document. It's a 20-year plan, with an annual update. Third, as I stated in my remarks, we have to determine whether or not there is a problem. Once there is a problem, we have to come up with some solutions, whether they be current management practices or best management practices. The decision rests upon the Water Quality Control Commission. They are the body that determine the practices, whether or not they are the best or current, whether or not there is an economic benefit or an economic loss. The state then certifies it to the EPA and we either agree or disagree. The most important thing is that it's a voluntary program, and I think that's the key to the whole issue, the bottom line. Best management practices should be voluntary. I don't think that there should be a regulatory control mandating farmers or foresters to do certain things. I think if the problem is recognized, the benefits are shown, the management practices will be adopted.

Colonel Roth: Another question. Yes, go ahead please.

Jim Goodrich: I'm wondering whether Adrian Ogaz' remarks may have referred also to the request of Truth or Consequences for a 50,000 acre-foot recreation pooling to be maintained in Elephant Butte Reservoir at all times. That point came up several years ago. I don't know what the present situation is on it, but after some consideration, the Bureau of Reclamation, Jim Kirby, authorized that in that particular year. I don't know for how long. I'd like to have someone comment on that.

(Private Feasibility Consultant)

Steve Reynolds: As a matter of fact the Congress authorized the Secretary of the Interior to store 50,000 acre-feet of water in the Elephant Butte Reservoir, imported San Juan-Chama Project water, and to maintain that pool against evaporation for a period of ten years. That authority expires in 1985. The State Legislature has considered, made some provision which I'll not go into, but not yet adequate, to acquire water rights or purchase imported water to continue the offsetting of evaporation from that 50,000 acre-foot pool past 1985. I project that the legislature will give further consideration to that question in years to come.

Colonel Roth: Questions or comments? Way in the back.

Audi Miranda: Mr. Lera, I'm kind of concerned about a comment you made earlier when you said that in some 208 activities that the federal government will take the initiative, and in others that the state government will take the initiative. I would like you to be more specific. The reason is that we just finished doing a 208 sediment control study and one of the things that we have been stressing and emphasizing to the people involved is that it will be a voluntary program. This is what we are going to recommend to the governor. Now, I'm sort of concerned about what the EPA will decide if they don't particularly agree with what the people provided as input into this program.

(Soil Conservation Division)

Thomas Lera: I think my comments may not have come across very clearly. When I was talking about the federal government taking the lead or the state government taking the lead, I was talking about the state-EPA agreement. There may be a portion in the agreement where we may decide to provide technical assistance to the state for training, for operation and maintenance of wastewater treatment plants. We may think we agree that the voluntary approach to regulate agricultural problems is the way to go, but if the voluntary approach doesn't work, I think, and I guess Mr. Reynolds can correct me on this if I'm wrong, if there is a problem that has been shown, a water quality violation that exists, I

believe that the Water Quality Control Commission has the authority to institute a regulatory action to correct that. Right now, EPA is stressing voluntary programs. We are not talking regulatory programs.

William Stephens: I think he has interpreted it correctly. The important thing is that we know what these best management practices are, that they do make sense and this type of thing, before we even get there. Again, the responsible society may have, and in many instances does have, a stake in this. As I commented earlier, many of these range management practices have been supported and recommended by the Soil Conservation Service for a number of years, so what is man-caused and what is nature-caused? It would be reasonable, as we establish these best management practices, if society owes something here, if they will carry that load, then you will have very little problem getting the farmers and ranchers to implement these.

Charles Youberg: I would like to address a question to Mr. Lera. The 1977 amendments to the Clean Water Act, particularly Section 208-J, directed the Secretary of Agriculture to initiate a program for addressing non-point sources of pollution, in particular those associated with agriculture. The Secretary of Agriculture has developed the rules and regulations for a program known as the Rural Clean Water Program. This program will address, and be available to, those farmers and ranchers in problem areas. Now there are several things these regulations say that the state 208 plan must have in it before a rural clean water plan can be offered. First of all, there must be an approved agricultural portion in the 208 plan, and secondly, there must be a problem that is recognized; thirdly, there must be designated problem areas within the state in order to offer a program; fourth, there must be best management practices; and fifth, there must be a management agency in order to carry out the program. So my question may boil down to one or three. First of all, does New Mexico's plan as it now stands allow us to offer a Rural Clean Water Program in New Mexico?

Thomas Lera: To answer your question, Chuck, no. Very simply, the portions of the plan do not identify the critical areas, the problem areas. There are no best management practices outlined in the agricultural portion. The plan is lacking in several respects.

Charles Youberg: Then this leads to a second question. Providing New Mexico wants a Rural Clean Water Program to address non-point sources of pollution, when might we expect the plan to shape up so that it could be offered?

Thomas Lera: That's a difficult question to answer. It can be handled in the continuing planning process, the ongoing process. I think that the plan has the components there, but the direction hasn't been achieved yet. There's a portion of it here and a portion there, but they haven't been tied together yet to identify the critical areas and to come to some definite conclusion that these current or best management practices can be adopted. The plan, as I said before, is a flexible plan. The state can amend the plan whenever they see fit. They can certify the amendments to the EPA and the EPA has a statutory time frame to act to approve the amendments or not. So actually, the ball is in the state's lap, not in EPA's lap. We are willing to fund continuing studies to determine whether or not there are critical areas or problems. We are willing to work toward the goals that address the Rural Clean Water Program, should it even become funded. I don't believe it is funded right now. I know that in the President's budget they are talking about \$40 million or so to it, but also the Rural Clean Water Program is at a minimum a 50-50 cost sharing program.

Colonel Roth: I want to give Bill Stephens a chance to comment on that.

William Stephens: When we go the sedimentation plan, I can see there, more quickly, best management practices being accepted by the state, and perhaps implemented, than I can in irrigated agriculture at this point in time. Because, as I indicated, even though much of the data that went into this is not research data, most of the stuff looks sound to me, and the practices are sound. They've already been implemented in many instances, but in irrigated agriculture, I just don't feel at this point in time that we have the data necessary to say that we have a problem. I think we are going to have to identify problems before we can get to this program of helping people implement a best management practice, when we really don't know that that is.

Thomas Lera: Let me set a little time frame for people who may be confused here. As I said in my opening remarks, the state has certified and the EPA has conditionally approved various portions of the plan, except for four parts. One of the parts was Mr. Miranda's sediment study, which would relate to the agricultural problems of the state. They have gone through public hearings and the Water Quality Control Commission will be, at their next meeting on May 22nd, reviewing that

portion of the plan and sending it to the Governor for certification. Then it will come to EPA. So should rural clean water funds become available and the critical agricultural areas are identified in the sediment plan, and best management practices are outlined, and a management agency is designated, I believe we'll be ready to act rather fast to try and get some of those rural clean water funds.

Colonel Roth: Was there another question in the back? Up front here, please.

Adrian Ogaz: I have a question for Mr. Lera. Maybe I've been dealing with government regulations too long, but I'm getting a little suspicious here. Maybe I'm wrong, but it looks to me like the government wants us to find problems where there aren't any, especially in irrigated agriculture. Up to now it has been proven that there's no problem, but if I understand what you have been saying, you won't approve anything unless there are problems. You want us to find problems, even if they are not there, is that right?

William Stephens: Tom, do you want me to respond to that? I don't really think that's what Tom said, of course he can speak for himself, but I think what he said is that if there are problems, and we identify them, and there are pollutants, for example, then we have to do something about it.

Adrian Ogaz: I haven't found any problems. I've been farming for forty years, and it's ...

William Stephens: You don't have any problems and you've been farming for forty years?

Adrian Ogaz: Problems, but not pollution problems.

Colonel Roth: I think Steve had a comment.

Steve Reynolds: As you well know, Colonel, I'm never completely satisfied with the performance of any of the federals, and I think you didn't do an adequate job in introducing Tom Lera. I've been working with Tom for a year or two as a member of the Water Quality Control Commission, and he's a bureaucrat, in the sense that he works for the EPA, and he tries to implement their objectives. He is not a bureaucrat in the pejorative sense, in that he has been just as forthcoming, as reasonable, as productive as a man can be within the limits of the statutes and regulations that he is employed to administer. And while I'm about it, I want to congratulate you, sir, on the performance of your district

in repairing flood damage from the floods of last fall, and in the carrying out of advance measures to prevent or minimize damage that we might have expected from this spring runoff.

Colonel Roth: Well, I wasn't going to bring this up, but I'm about to put you in the bureaucrat's thing. I noticed earlier that you found a subtle but necessary distinction between public welfare and public interest. I think someday in a different forum you need to explain to a bunch of folks here what that subtle difference is. Be that as it may, any other questions or comments? Yes, in the back please.

David Abeebe: I would like Mr. Reynolds to comment on the likelihood and the desirability of mine dewatering being declared a beneficial use in the state of New Mexico.
(Los Alamos Scientific Laboratory)

Steve Reynolds: I don't quite like the way the question is worded, whether mine dewatering would be declared a beneficial use, but that's close enough. The question really is whether the legislature will require that the miner apply for and receive a permit from the Engineer before undertaking to dewater a mine. The Legislature has considered that in the last two sessions, has created an interim committee to study that question, and I've been around long enough that I never predict what the courts or the Legislature will do. I work for the Executive Branch.

Colonel Roth: Any other questions or comments?

Paul Turner: I might just say a couple of things. From what I have seen with the federal and state agency people within this state, I think there are many opportunities for innovative uses of water, saline waters as well as existing surface waters. I think that, given the direction that may well come out of the New Mexico Water Resources Research Institute, there is a capability within this state of doing some things that are rather interesting. We haven't talked about uses of saline waters in great detail. Particularly, I, coming from the Department of Fishery and Wildlife Sciences, like the idea of aquaculture and potential culture of fish and invertebrates. I think this is something that has good potential, and it ties in with your question of dewatering mines. The potential for using water pumped from mines for an additional beneficial use such as growing fish and invertebrates would be an interesting add-on water use which would

be compatible with mining. Perhaps we could create a temporary reservoir for fishing purposes. There are many innovative ways of using water if we don't let current legal and technological problems limit our planning for research and development.

Unidentified Voice: That would be a beneficial use, though. That would require a permit.

Paul Turner: Might be able to get it, maybe. I would hope so.

Colonel Roth: Any other comments from the panel or anyone else? Well, I'm not going to delay closing. I want to thank the panel on behalf of both you and I, and this morning's panel for just an outstanding day. It has been a long day. I certainly am not going to summarize. That's not in my charter anyway. The question for the day was, "Will the new national water policy work in New Mexico?" I'm not sure we have even defined what the new national water policy is. I suspect we may have to do this yet again after the new national water policy is finally resolved by the Congress and the Executive Branch, Gerry, and maybe that's an open invitation to come back and do this again some time. I would like to thank you all personally for allowing me to moderate. Steve's kind remarks notwithstanding, I would hope, representing the federal people that have been up here that the feds aren't viewed as a bunch of "bad guys." They represent a government which you have created. By and large I would say that the folks in the federal government don't find bureaucrat as bad a word as many would make it. Now, did you have a comment, sir?

Jim Goodrich: Yes, Colonel Roth, I would like, following your comment on the national water policy, to see the word "conservation" defined, spelled out. You can get as many definitions of conservation almost as the number of people you talk to. It begins with those who say conservation means don't use any more, to those that say use all you want but use it most efficiently.

Colonel Roth: I appreciate that. I will remind you that there is a banquet this evening and we are going to innovatively use water with various other things starting at 6:00. I thank you all for your patience.

BANQUET ADDRESS

Millard W. Hall, Chairman
Missouri River Basin Commission

Introduction

My message to you tonight was stimulated by the discussion earlier today about national water policy and how New Mexico might relate to that policy. That message is: we live in a time of great change as regards the management of our natural resources, a time of great conflict over the values that should be attached to these resources, a time of great debate over who should make the decisions about resource management, a time when concepts thought to be tried and true seem to be inadequate to the task, and a time when new concepts of resource management are being created and tested.

I want to say at the outset that being an employee of the Federal Government puts one at a disadvantage in a discussion of these matters. I've learned since receiving my Federal appointment that, although members of State government are often introduced as statesmen, those in Federal service are invariably regarded as bureaucrats. The corollary to this is that your views as a "statesman" are regarded highly, whereas your views as a "bureaucrat" are perceived with great suspicion, regardless of what they are. To those outside the Federal service, this can be an enjoyable game--one at which, incidently, I once excelled--but it can have unfortunate ramifications when it prevents candid dialogue on such important subjects as water policy.

It is unlikely that those who have switched from being members of State government to being members of the Federal Government have really changed their philosophy on resource management. We're confronted with the same issues, problems, and questions after the switch as we were before. However, in the latter case, we're confronted with a much larger perspective of an issue and with a much larger breadth of interest. So, although the question hasn't changed, the scope of its consideration must change, and with this, often comes a different answer.

I have long had a concern about the way we manage water in this country. I'm not especially critical of it as I recognize many of the triumphs produced by the Nation's water management. I must say, however, that I agree with the President in believing that the system we've been using for a number of years needs revision. I'm sure that many of you agree. Such a statement need not reflect criticism on the States or on the Federal Government, or on the agencies that implement water policy. It is an admission that there can be considerable improvement in the manner in which we establish and implement water policy.

I took the position of Chairman of the Missouri River Basin Commission because of such concerns and because in general I was, and continue to be, in agreement with the Administration's basic approach to this problem. I frankly admit to having a number of professional problems with this Administration's concepts of National water policy, particularly its "fit" at the regional and State level. However, I am not surprised by this, regarding it as the logical product of an incomplete but ongoing process. I feel that it's part of my duty to make the Administration aware of such problems and to help in finding solutions to them. Hopefully this process will lead to the development of a policy that can be beneficial to us all - something in all the other states in this country.

Historical Perspective

A brief history lesson on water development in this nation using the Missouri River Basin as one example, may provide insight to current policy. Early efforts in water resources management centered around the taming and development of our rivers, streams, and coastal waters for a variety of purposes, mostly to meet the need for economic growth: water power, transportation, and commerce. Many people have forgotten about such needs today.

A piece of literature that was printed in 1867 brings this era to mind. The writer you all know as Sam Clemmons, talked about a journey that he had made from St. Louis to St. Joseph, Missouri, by steamer, up the Missouri River in the middle of the nineteenth century.

We were six days going from St. Louis to St. Joe. No record is left in my mind now concerning it but a confused jumble of savage-looking snags which we deliberately walked over with one wheel or the other, and of reefs which we butted and butted and then retired from and climbed over in some softer place, and of sand bars which we roosted on occasionally and rested. In fact, the boat might almost as well have gone to St. Joe by land 'cause she was walking most of the time anyhow.¹

That's a pretty accurate description of life on the Missouri in those days, when the Missouri could at one time of the year be twenty miles wide, and at another time, narrow enough and shallow enough that one could literally walk across. The same kind of experiences were probably true of rivers elsewhere in this country. But many people have forgotten those times and the difficulties that attended them, precisely because we've been so successful in developing and managing these waters.

Urbanization of this country and the westward movement of people led to slightly different concerns. The literature of this period is replete with references to completely uncontrolled and apparently uncontrollable rivers which at certain times of the year completely blocked westward

¹Twain, Mark (1886): *Roughing It*, p. 21, American Publishing Co., Hartford. (Quoted in "Shingling the Frog and Other Plains Lies," Rogert Welsch, Swallow Press, Chicago, 1972, p. 54).

movement, and periodically wrought havoc upon any settlement that was attempted along their banks. Listen to one observer's view of the Missouri River from a publication issued in 1907:

It's the hungriest river ever created. It's eating all the time, eating yellow clay banks and cornfields, eating acres at a mouthful. It's yearly menu is ten thousand acres of good rich farming land, several miles of railroad, a few hundred houses, a forest or two, and uncounted miles of sand bars.²

And another example that I like from the same period:

It's a perpetual dissatisfaction with it's bed, that is the greatest peculiarity of the Missouri. It is harder to suit in the matter of beds than a traveling man.²

From these examples, you see it was simply imperative--if we were going to settle this country, if we were going to move westward, if we were going to utilize the lands that we'd gained west of the Mississippi--that we devise means for dealing with such natural phenomena. So the need was recognized early for flood control structures, for dams, levees, bridges, and channelization projects to bend those waters to the will of man.

A little later in our history, though, we recognized that the waters of our western states could be used for other purposes, in fact for the attainment of an improved national economy. In the early part of this century the Congress passed the Reclamation Act, making it national policy to develop and utilize the waters of our western states for agriculture, and for power production, to promote industry, commerce, and the settlement of this region.

The institutions created to meet these concerns and implement these policies--the Corps of Engineers, the Bureau of Reclamation, the Soil Conservation Service and others--have, for the most part, done their jobs quite well.

By comparison with most others, this nation has excelled in the management of its waters. We have miles and miles of navigable inland waterways. We have untold amounts of power production. We have irrigation. We have good urban water supplies; and we have basically controlled flooding.

For example, I am told that in what are the mostly arid states of the Missouri Basin there are now some twelve million acres of irrigated farms. Together with the dryland farms of that area, which again are helped by such agencies as the Soil Conservation Service, these acres produce one-third of the U.S. wheat crop, one-fourth of the U.S. sorghum and cane, more than a fifth of its corn, and a fifth of all poultry and livestock

²Fitch, George (April, 1907): The Missouri River, Its Habits and Eccentricities Described by a Personal Friend, pp. 637-638, The American Magazine.

produced in this country. This same region annually adds some twenty-one billion kilowatt hours of electricity to the nation's power grids. And all of this in the land once described as the "Great American Desert." The institutions we created to deal with those kinds of problems have done their jobs well.

As the country matured, however, we began to recognize other important uses for water and the public began to discuss these uses in terms of what have come to be known as "amenity" values, recreational uses, fish and wildlife uses, scenic and water quality uses and values, for example.

New Values, New Institutions

We created new institutions to deal with these "new" concerns and values. The National Environmental Policy Act created the Environmental Protection Agency and the Council on Environmental Quality. The older Fish and Wildlife Service was given a new mission in the implementation of the Endangered Species Act. The Heritage and Conservation-Recreational Service was created to assist in the articulation of these new values. All of these agencies were given the mission of not only defining these values but helping to balance them against the older values--more often expressed in economic terms--that we had been using as the basis for making national water resources decisions.

The legitimization of these new values in this way has created a most perplexing dilemma in resource management--for the new values often conflict directly with the older ones. And, we've yet to produce any adequate means short of expensive, time consuming litigation for melding these values together, for achieving compromise and an acceptable solution to these conflicts.

These same conflicts, however, have produced a total reexamination of the nation's concepts of sound water management policies in this country in the past few years. While this was happening, it began to occur to many that there was an equally serious problem. That is, we were trying to resolve conflicting values in the absence of a well-defined national policy, in the absence of any sort of guidelines for the resolution of these conflicts.

National Policy

A national water policy has been the concern of almost every national administration for the past 100 years. You can go back through time and do a little digging and you'll find that almost every President since the Civil War has been concerned with this problem. Each has appointed some sort of a commission, or asked for some sort of joint committee of Congress, or some special study groups to work on this problem and try to do something about it.

When President Carter came to office, his approach was slightly different. Rather than appointing a study committee to bring forth a document describing what water policy might be, he had the temerity to bring forth a statement on what water policy is going to be. Now that

statement was couched in terms of a proposal but it sprang in a surprising fashion from Washington. It caught a lot of people off guard and off balance, and it angered many of those so affected. They didn't take it as a proposal, but as a statement of how things were going to be.

That's unfortunate, in a way, as it has hardened positions on all sides, and probably made more difficult the compromises that are going to be necessary to achieve a truly integrated national water policy. On the other hand, that action generated the most serious, the most in-depth, ongoing, and complete national debate over water and water policy that this country has ever seen.

As a professional, I view current water policy proposals as an adequate, sincere, thoughtful, and useful attempt to do something about this country's problems in water management. As a new member of the Federal Government and as a person who has spent a lot of time in his professional career attacking Federal bureaucrats, I say candidly to you that I would rather defend the other side. It's easier and it's a lot more fun.

But that approach ignores some very real and serious problems with the system. For the past two hundred years water management in this country--which is supposed to be primarily a function of State government--has been increasingly a function of Federal Government. The Federal presence in water management increased dramatically throughout that period. The dollars from the Federal budget going into that activity have been increasing during all of that time. And, we are almost to the point where we can't tolerate either of those.

We just can't accept, I think, very much more Federal presence in the water policies of this country. The states have to do it. Now, they have to do it with the help of other entities, but the states have to do it. Nor can our budget stand many more of these increasingly expensive and increasingly diminishing return kinds of projects.

The facts are that we have used up most of the really good sites for water development in this country. I'm sorry if that angers you; I don't mean it to, but we're nearing the end of the road in this respect. We're not at the end of the road--that's evidenced again by the new starts I expect to be authorized by the Congress for water projects this year--but we're getting in sight of it. It's time then that we start shaping our national water policy to be a little more reflective of some of these realities.

Policy Implications

The general policy that's proposed by the Administration is in fact a step back from this Federal presence in water management in this country. It's a step back from the large scale resource allocation for supply site water development activities that we've known in the past.

It makes the implementation agencies--I think to their advantage--more responsive to the Administration, to the states, to the people of this country, and to those newer values that I mentioned earlier. It

makes them less responsive to the Congress, and therein is a real problem. It gets professional water planners and managers more into the game, and that's threatening to some people. It insists on a consistent, rational approach to decision-making in water development.

The President has proposed an independent review function. He has issued an Executive Order on that. The Water Resources Council has produced--at the urging of the Administration--a policy statement on consistency of planning efforts, on consistency for decision making. All of these things will lead to greater involvement of professionals in decision making, better use of the information, and a more consistent approach across the country for making decisions on water management activities.

The policy does, in my opinion have several important features which I think require a great deal more study, a great deal more thought. I believe they will also require considerable compromise before they can finally become acceptable to the states and to the Congress. For example, Garrey Carruthers mentioned one such important point this morning when he talked about the need for inclusion in that policy of a greater emphasis on research and education.

It's very difficult to sell research and educational efforts. We're trying to sell a package right now of twenty-five million dollars for conservation efforts in this country. It will be through the State grant program (Title III of the Water Resources Planning Act of 1969). Twenty-five million dollars is being proposed by the Administration. Congress apparently wants to give us five.

Coca Cola is spending fifty-five million dollars next year to teach people to drink Coca Cola. Now I like Coca Cola, but there's something wrong with our values when we Americans can spend that much money on an educational effort for soda pop and we can't spend even half of that for an educational effort on a subject--on a resource--that touches every one of our lives in a most intimate way.

There is a great deal wrong, I think, with a policy that mitigates against regional differences, state differences, regional perspectives, regional needs, state needs. I am very much afraid that this policy is inadvertently doing that. I think this policy mitigates against agriculture, for example, in states wherein water is scarce--New Mexico, Colorado, Wyoming, and other states we can name in that category--wherein water has been used largely for the stimulation of agriculture and the economy that follows agricultural development. I don't think we want that. I don't think the Administration wants that. I don't think they want it because if you mitigate against agriculture then what are you going to replace it with? In some of these states, what you're likely to replace it with is industrial development, which might shift water development from a public activity to a private activity.

You see, if you have a very limited resource and it's very valuable, it's going to be developed; it's going to be used. This development can be controlled through a system of public decision making, or it will

happen anyway, and it will happen randomly within the private sector, in an uncontrolled--and uncontrollable--fashion. I don't think the Administration wants that, and I'm sure that there will be more discussion on that point.

There is also great confusion over the definition of conservation. The definition now in the policy statement that seems to limit itself to only nonstructural approaches will never be acceptable. It's not rational to expect that we would limit ourselves in that way. It is rational to point out, and to insist upon, consideration of all alternatives and procedures for achieving water conservation. But it's not rational to tie one hand behind your back as you try to achieve a goal. I'm sure the Administration does not intend that the current interpretation of this statement--against all structural development--continue.

Summary

Those are examples of the kinds of problems that I find with the Administration's proposal. Those are examples of areas wherein I see potential for compromise, areas where I see room for improvement. I want most of all to urge you, don't respond intensely in the negative. We all need to be willing to look at all sides of the question and to be willing to look for those fair and considerate compromises that are going to be necessary as we go ahead with this decision.

This country doesn't really have a problem of water supply. We are blessed with water. The recent National Assessment compiled by the Water Resources Council with the assistance of many of the states points this out quite effectively. We do have some problems with maldistribution of water.

We have droughts. We have floods. We have some regionalized problems with supply and demand. We've an abundance of water, but our problem is in how to manage and how to allocate that water among the many conflicting demands that are being placed on the resource. The problem of allocation--of allocation in time and in space--is going to stay with us.

And, in fact, it's going to become worse in the years ahead. This country's energy concerns, its growing agricultural concerns, its growing urban areas with demands for municipal and industrial waters, the continuing emphasis on and demand for water for recreational purposes and other instream needs, the demand for adjudication of Federal reserved rights including Indian rights--all of these--are placing more and more of a demand on the water resource.

The conflicts are becoming greater and greater. This problem of allocation simply has to be faced and it has to be solved, and it can't be done on a state-by-state basis. It's got to involve then, not only the states, but the Federal Government as well.

I feel that because of the vast regional differences in this country, effective resolution of this problem is going to require some sort of an agency in between the states and the Federal Government. There is going

to have to be some agency in there to help referee the tug-of-war between state interests on one hand and Federal interests on the other. There are regional interests. There are interstate and intrastate interests that have to be dealt with. It's not just a state or Federal issue and these problems won't be solved if they are oversimplified in this way. And, I feel that the sort of agency needed is the kind that I now head.

I believe this was the intent of the Water Resources Planning Act of 1975 which authorized river basin commissions as the principal agency for coordinating region-wide planning for water and related land resources.

The Missouri River Basin Commission, like other river basin commissions, include member states and appropriate, related federal agencies as members. This includes the states of Colorado, Nebraska, North Dakota, South Dakota, and Wyoming; and the following federal agencies: Departments of Agriculture, the Army, Commerce, Energy, HEW, HUD, the Interior, and Transportation, as well as the Environmental Protection and Federal Energy Management Agencies. In addition, two interstate water compacts are members, and Canada has observer status.

This commission, since its origin in 1972, has established a comprehensive, coordinated plan for the entire basin incorporating the planning efforts of federal, state, regional and local planners. This plan is updated biennially. Plan elements which required federal funding are endorsed by the commission through a priorities-setting function which gives all members an opportunity to submit projects for consideration. The commission meets quarterly.

When these commissions first began, the structure dictated that they implement water policy coming out of Washington. I think we have found that water policy designed for one region of the country is not likely to fit every other region. Because of this, I believe basin commissions are playing an increasing and appropriate role in policy development as well as implementation.

Closing

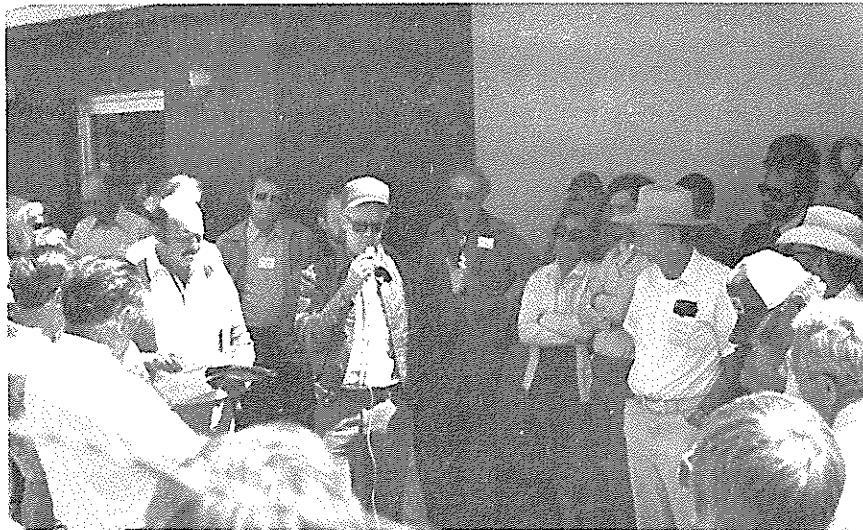
I'd like to close by noting again that, as a nation, we've managed during the past 100 years to solve to a great extent many of our water resources problems. We now have navigable rivers. We have effective flood control programs. We have large cities with adequate water supplies and adequate wastewater disposal. We have large-scale irrigation for the production of food and fiber. But in solving these problems we've encountered a whole new set of values which we're now--only now--learning to respond to.

The old and the new values have been on a collision course for some time. In fact, if you examine the law courts right now you'll see that that collision has already begun to occur. It's a collision that we can't afford to allow. I believe a day is coming when we can successfully accommodate both the old and new values in our approach to resource management.

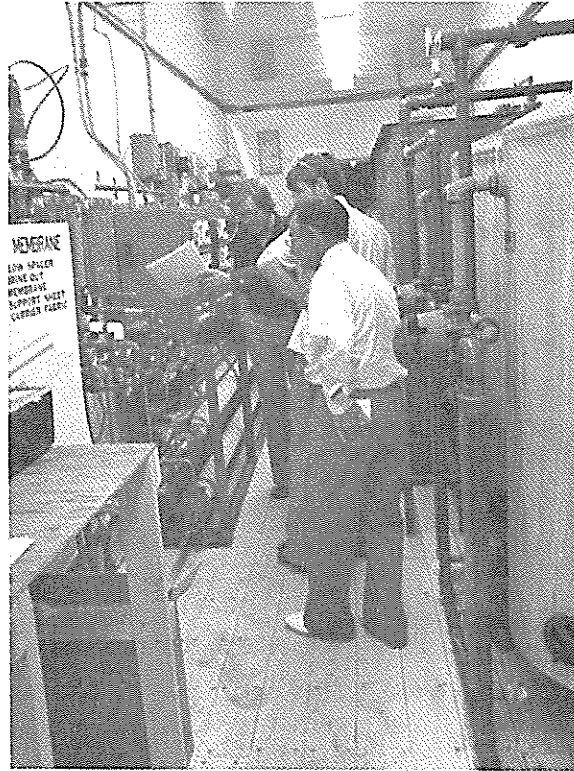
To do this, we're going to have to learn to work together--as representatives of state interests, as representatives of regional interests, as representatives of Federal interests--in a positive, conciliatory, fair fashion. We must resist the impulse to be provincial, resist the impulse to consider only our own needs, and look out beyond the borders of our particular state or region to the greater needs of our entire Nation.



New initiates to the International Connoisseurs of Red and Green Chile:
(From left) Thomas Lera, Steve E. Reynolds, Colonel Bernard J. Roth,
Gerald Seinwill, and Hal Brayman.



Local pecan grower, Bill Stahman, speaks to field trip participants
about his computerized irrigation system.



Mobile desalting van provided an opportunity for Conference participants to see the latest in brackish water desalinization techniques.



Pete Wierenga describes trickle irrigation of chile peppers to field trip participants.