

NEW MEXICO RESIDENTS' ATTITUDES TOWARD  
WATER USE AND MONETARY TRADEOFFS

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## ABSTRACT

### NEW MEXICO RESIDENTS' ATTITUDES TOWARD WATER USE AND MONETARY TRADEOFFS

The research had two specific aims as follows: 1) to provide information that will be useful to New Mexico Water Resource planners in solving problems concerned with water resources and related issues; 2) to demonstrate how a mail survey of the general public can be a useful supplement to traditional methods of obtaining public participation in water resources planning and management.

The research procedure utilized in this study consisted of contacting by telephone a random sample of New Mexico residents and asking them if they would be willing to participate in a mail questionnaire survey. The respondents who agreed to participate received a questionnaire in the mail. The respondents completed the questionnaire and returned it free of charge. A total of 310 questionnaires were returned in usable form.

The major findings of the survey are as follows: 1) the respondents feel that the New Mexico government needs to be involved in water resources problems; 2) a large percentage of the respondents believed that all forms of recreation should be made available to everyone; 3) the respondents do not appear to know to what extent water pollution is a problem in New Mexico; 4) the respondents do not believe that the public is kept well informed about the government's role in water pollution control; 5) a large percentage of respondents agree than disagree that nuclear energy should be encouraged in New Mexico; 6) the majority of respondents believe that New Mexico's water pollution problems should be handled by the state government, and not the local, county, or federal government; 7) the respondents are not well aware of New Mexico's state water pollution programs; 8) only a small percentage of the respondents indicated that they would be willing to pay additional taxes to reduce water pollution; 9) many of the respondents were attempting to conserve water in some manner; and 10) industrial water pollution is believed to be a more serious problem than home or agricultural water pollution.

The results of this study show that the use of a survey can be an important method of acquiring public input for the planning of water resources programs.

NEW MEXICO RESIDENTS' ATTITUDES TOWARD  
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INTRODUCTION

Meaningful public involvement is a difficult proposition for most water resources agencies. The difficulty is not whether citizens have a right to a voice in plans affecting their lives, but rather, how can citizens be more directly involved in the planning process.

To a state water planner, one of the main objectives of involving the public in the planning process is to increase public acceptance of state projects. For this reason, state agencies are now attempting to monitor residents' attitudes and actions toward various issues and encourage participation in the planning of state projects. This participation by the public provides feedback for planning, and may suggest new directions in planning that officials may have overlooked or did not have the expertise to evaluate. This feedback will help to ensure positive attitudes and acceptance for projects, and also allow the people of a state to have a say in plans that affect their lives.

Normally, state planning agencies are not really involved in the process of shifting through all possible alternatives, rather they must react to proposed developments brought to their attention for review. In considering water resources development, the general public must be included along with key management personnel in the public sector because such a great number of water resources development proposals originally develop outside the governmental agencies.

The key management and planning personnel in both government and industry need to be acquainted with the nature of public participation

programs. All too frequently the typical "public participation" programs involve governmental planning agencies, technical consulting firms, and possibly industrial concerns, but not members of the general public. Missing from the typical public participation efforts is an early and continuing meaningful involvement of private citizens.

Any water resources development should have as a goal the provision of measures and facilities which are responsive to the needs and desires of the public at large. Only through effective public participation in water resources planning and management can this goal be meaningfully achieved.

The research reported herein addresses specifically the problem of acquiring public participation information in water resources development in the state of New Mexico. This report will provide information that is not limited to water related issues, but the results of this report should also prove valuable for the development of most plans which deal with the improvement of the quality of the environment.

#### RELATED RESEARCH

Several studies have been conducted dealing with water resources development and public participation. This section will briefly look at some of the more general studies, and then analyze a number of studies dealing with New Mexico's water resources development situation.

##### Social and Cultural Input vs. Economic Input

Today, attitudes, opinions, suggestions, and cultural insights of different publics are an invaluable and unique data source, to state water planners. This sociological input adds a special third dimension to planning besides the traditional economic and technical considerations. In the past, however, planning was developed on the basis of a project's

technical and economic feasibility alone. Planners usually explored two main areas. First, the project had to be physically feasible, and second, the benefits to the users had to outweigh the costs of the project. If a project passed these two tests, it was automatically considered also to be politically and socially feasible.<sup>1</sup>

Current methods of planning are more thorough. "It is now recognized that sociological considerations are equally important aspects of the planning process..."<sup>2</sup> and therefore are included when planning and implementing water research projects. For instance, Carlson suggests a balance between cultural, ecological, and economic concerns. He pictured the ideal situation as being one in which all three elements are in harmony. That is "where the culturally approved and most economically fruitful activities were also the ecologically optimum activities."<sup>3</sup> Since all three are rarely in harmony, he asserts each should at least be represented in the planning.

Objectives in water planning today reflect the need to encourage public participation as a way to receive social or cultural contributions to balance with economics and technology. Dysart made this clear during a panel symposium on water development planning in 1978. He states, "The basic objective of any planning effort is to be responsive to legitimate public needs. This basic objective becomes the charge of those involved in planning, whether they are engineers, planners, or social scientists."<sup>4</sup> Bishop lists three top objectives of water resource planning as: 1) to provide for information, education, and liaison with citizenry; 2) to solicit reaction and feedback on proposals; and 3) to identify problems, needs, issues, and concerns.<sup>5</sup>

#### Legal Aspects of Participation

There are also various requirements and recommendations from the

federal government that encourage state water planners to provide for and encourage public input on all projects that have federal funding or licensing, or involve interstate water. Beginning in the late 1960s, a series of federal laws came into existence that required participation in the planning phase of any project of this type. The two most important federal laws are the 1969 National Environmental Policy Act and the Water Pollution Control Act Amendments of 1972 (amended by the Federal Clean Water Act of 1977). Both provide for public disclosure of information, public hearings, and solicitation of feedback for management and planning decisions.<sup>6</sup>

The National Environmental Policy Act of 1969 was the first major departure from purely economic and technical considerations. This Act requires that agencies of the federal government or any project with federal monies include in their proposals "a detailed statement... [on] the environmental impact of the proposed action."<sup>7</sup>

In 1972, the Amendments to the Water Pollution Control Act were passed. Section 101 of this act sets an interim goal of water quality which "provides for the protection and propagation of fish, shellfish, wildlife, and water based recreation by 1983, wherever attainable."<sup>8</sup> This act requires all state waters to be fishable and swimmable by 1983. But "fishable" and "swimmable" are open to interpretation and cannot be accurately quantified without obtaining public views on these subjects.

The Environmental Protection Agency (EPA) also has participation guidelines for state projects involving federal monies. These guidelines are as follows:

- 1) The public should have continued access to informational materials that should be available at the earliest opportunity, conveniently located, and available on evenings and weekends.



- 2) Assistance in understanding and participation in the planning process should be available to the public.
- 3) Citizens should be consulted on all important planning decisions while their views can still affect the decision.
- 4) Agencies should provide adequate funds for public participation.<sup>9</sup>

The Executive Order #12113, dated January 4, 1979, is one of the most recent calls for participation. This order directed the Water Resources Council (WRC) to ensure that an impartial 'technical review' be performed on all federally assisted water and related land resources projects and programs. The WRC will look at the extent of involvement of federal, state, and local officials and the public in the plan formulation process. The WRC provides certain recommendations that will help in the review process, these include such suggestions as adequate documentation of participation, identification of various publics, and increased effort to provide the public with relevant information.<sup>10</sup>

Because of the extent of this federal governmental backing, it is now necessary for any state water planning agency to take public participation very seriously. Public participation is a necessary means of providing measures and facilities which are responsive to the legitimate long run needs and desires of the public.

#### Other Support for Participation

Additional support can be found in the literature in defense of public input into state planning. Davis points out that these arguments can be divided into two kinds. There is the 'democratic' argument that says participation is the proper procedure to follow in a democratic society, and there is the 'expedient' argument that says citizens participation is a necessary means to the success of any agency program.<sup>11</sup>

The 'democratic' argument is a noble value that is subject to individual opinion. It is the second, 'expedient' line of reasoning that

is discussed below because it so clearly supports citizen involvement.

The 'expedient' argument states that without public participation, it is quite possible that the public could lose confidence, and desire that public funds be allocated to other areas, which could jeopardize the success of any water program. In addition, nonparticipation through formal channels during planning often erupts in undesirable participation at the time of implementation. The public can be of significant size and are often able to organize so that a project that is thought to be well planned meets stiff opposition at the time of implementation.<sup>12</sup> This can mean delays, contract cancellation, and an increase in the cost of the project.

#### Problems Encountered with Public Participation

There are three main areas where problems are usually encountered when an agency begins to include more public participation in its decision making: 1) the attitudes of planners are not always favorable to the move, 2) the agency setting or structure poses barriers for participation, and 3) characteristics of the publics to be involved are not always conducive to efficient input and planning.

In a survey of water resource planners and managers, Dysart et al. found that there was frequent mention of inadequacies in the areas of communication skills, willingness to accept or consider the ideas or inputs of 'nonprofessionals', sensitivity to changing preferences of society, and attitudinal matters in general. The study states that an attitude of genuine responsiveness on the part of the agency can mean the difference between a program which produces even greater polarization and one which produces a better water resources project.<sup>13</sup>

Bultena asserts that part of this resistance comes from the fear that general public opinion may run counter to official agency announcements

of public support for projects, and therefore could be used by opposition groups to block agency efforts.<sup>14</sup>

Planners may also discount public input as being irrational because it does not always conform to the values the planners hold. For instance, Willeke compares the efficiency values of planners and engineers to the equity values of the public. Many planners and engineers traditionally consider efficiency (most benefits for the least cost) as an important criterion in planning. However, this is not always the highest order objective of the public. The different publics have a mixture of values that do not always lead to the most efficient action. A more frequent concern of the public, for instance, is equity. They are interested in whether they are paying more for a project (or receiving less) than the next person.<sup>15</sup>

The second problem area centers around the setting or structure of the state agency. Cost of participation is a strong deterrent to any agency. Limited funds and limited manpower hinder an agency's ability to carry out such actions as completing workplans and responsiveness summaries, meeting public hearing requirements, and disseminating information. So, even if an agency decides to include public input, the decision of how much participation must also be made.

The political setting is often a deterrent to public input. There may be a reluctance to ask for public opinion because of ties to special interest groups. Support of particular groups or political parties is often vital to an agency's survival and growth.

The third problem area involves certain characteristics of the general public that present potential barriers to effective participation in decision making. These characteristics include the instability of public opinion, the lack of knowledge of the public on specific water resources

problems, and the general complexity of American society. These barriers must be contended with if public participation is to become effective.<sup>16</sup>

The largest, most recent effort to include public participation in water resource planning in New Mexico is the New Mexico Public Participation Program. This program is an important element in the Section 208 planning effort called for by the Federal Water Pollution Control Act Amendments of 1972. The program is an effort by the Environmental Improvement Division (EID) and other states agencies to involve New Mexico residents in planning for future water quality.

According to Lucy Fox, New Mexico public participation coordinator for this program, there are several philosophical concepts stressed in obtaining public participation in water quality planning. First, information and involvement must take place from beginning to end of the planning. Second, there must be an attempt to reach out to everyone affected by the water quality plans. Finally, participation opportunities must cover the entire state of New Mexico. She went on to emphasize that, "the process of informing and involving is not just desirable, it is also essential in the Section 208 planning program if the EID is to produce a plan that has any chance of being successfully put to work."<sup>17</sup>

Policy Advisory Committee. The 1979-1980 PAC of New Mexico consists of a citizens' advisory group that represent a wide variety of public interests in the state. The purpose of this citizens' advisory group is to obtain information from those citizens who may well have particular concern and knowledge about the issues at hand, but whose participation is not a part of their professional duties.<sup>18</sup>

Ertel, in a mail questionnaire survey of citizen advisory groups, concluded that these groups consist of individuals who are affluent, well educated, and professionally and organizationally active. Therefore,

they may not be representative of the public at large or even all affected interests. She concludes by stating that the planning staff must avoid the temptation to equate advisory group views with the public interest and therefore neglect the need for other forms of public participation that will involve a broader segment of the public.<sup>19</sup>

Public Hearings. Participation in public hearings held by a water planning agency is a second area of New Mexico citizen involvement. These hearings are typically advertised and open to the general public. Informational presentations are made by agency personnel and are followed by an invitation to persons in the audience to make statements and/or ask questions. Transcripts of the proceedings are made and reviewed by state and federal agencies who have the authority to approve or reject the plans. Hearings provide an opportunity for any agency, group, or individual to be on permanent record as having put forth a certain view. Public hearings are by far the most frequently used method for involving the public in the decision-making process.<sup>20</sup>

The major advantage to public hearings as a means of providing public input is its legitimacy in the public's mind. In addition, public hearings are low in cost and are simple to develop.<sup>21</sup>

Unfortunately, though, this method is plagued with problems. First of all, public hearings usually attract a select segment of the general population, so they may tend to overemphasize the views of organized interest groups. Bultena et al. found in their study of citizens' views and action on the proposed Ames Reservoir in Iowa that those who attended a public hearing on this subject tended to be in higher education and income brackets than the public at large.<sup>22</sup>

Public hearings also provide a high potential for bias depending upon who is sponsoring the meeting, and meetings often result in open-ended

statements that are difficult to interpret. Additionally, the individuals testifying may not get enough information prior to the hearing or do not completely understand the issue.

Probably the greatest problem at public hearings, though, is lack of attendance. This is a universal problem, found in other states as well as New Mexico. Davis et al. concluded from their experience and research in North Carolina that public hearings "usually involve only a relatively small proportion of relevant publics and then only superficially."<sup>23</sup>

Attendance at public hearings in connection with Section 208 planning in New Mexico seems to have suffered a similar fate. Attendance at the public hearings connected with Section 208 was limited. Of nine public hearings conducted between April 1977 and June 1979, average attendance was 21 people. Average attendance at general town meetings on Section 208 was 18 people.<sup>24</sup>

Many of these problems can be dealt with simply by combining the public hearing method with other participation techniques. For instance, a concerned citizen unable to come to a public hearing in another town may find a questionnaire mailed to his home a more convenient way to participate in the decision making on current water issues.

Citizen Outreach Program. A variety of other techniques have been used in New Mexico to increase awareness, knowledge, and participation in the planning of the Section 208 program. A cost-free telephone number for further information was established, a mailing list was developed (by June 1978, over 1200 addresses were receiving EID newsletters and other information), a newsletter was published called Focus On Clean Water, and frequent presentations and roundtable discussions were held around the state.<sup>25</sup>

The effort to include citizens' views in New Mexico's water resources

decision making has been extensive and continuing. The present study provides information from a mail survey of the general population of New Mexico. This survey will aid decision makers by providing one more means of obtaining public participation.

#### RESEARCH PROCEDURE

The research procedure utilized in this study consisted of contacting by telephone a statistically random sample of New Mexico households and offering them the opportunity to participate in a mail questionnaire survey. The respondents who agreed received a small booklet containing a cover letter and the questionnaire, which they returned free of charge.

##### Sample Design

The researchers drew the sample by a judgmentally stratified random procedure. First the state was divided into twenty geographic areas, then households were randomly picked within each area to be included in the survey. The percent of the sample from each area is approximately proportional to the population from that area divided by the state population. The sample frame included households in over 65 cities and towns and 27 counties.

Each area sample came from the telephone book of that area. A random selection procedure determined the page, column number, and individual residence in the telephone book.

##### Data Collection Instrument

The data collection instrument was a self-administered mail questionnaire and cover letter in English or Spanish (see Appendix I). Since surveys of this type are rare in New Mexico, this study sought to explore a wide variety of attitudes and opinions about water. The questions asked were nontechnical and covered a broad area.

The cover letter stressed anonymity and confidentiality and addressed the respondent as citizen. Telephone precontact had attempted to establish an earlier personal, we-care, relationship with the respondents.

Junior and Senior college students filled out the questionnaire as a pretest during the summer of 1979. The questionnaire was strengthened and improved by eliminating or altering misleading instructions and questions according to the suggestions and reactions of students during the pretest. It took the students between twenty and thirty minutes, on the average, to complete the questionnaire.

#### Telephone Precontact

Strict rules for telephoning insured that each household in the sample had an ample opportunity to participate if it chose to do so (see Appendix II). Four women students made all calls. Calling times were chosen carefully with the respondent in mind. Researchers selected evening hours of 6:15 p.m. to 9:00 p.m. Monday through Thursday, and 9:00 a.m. to 12:00 a.m. on Saturday to avoid the pitfalls of weekly daytime calling. Ralph Stone and Company found, in its 1974 telephone survey on wastewater reclamation, that daytime calls produced higher refusal rates, a disproportionately higher percentage of women and retirees and a higher number of unanswered calls.<sup>26</sup>

The telephoning precontact procedure did turn out to be satisfactory; the number of male and female responses were proportional to the state population and only 15 percent of the calls made were unanswered. Callers dialed 987 household numbers to reach 590 households, about a 60 percent contact rate. On the average, about eight calls (includes cooperating and noncooperating households) were completed per hour. 'No answer,' 'not at this number,' and 'out of order' numbers (see Appendix III), were eliminated from the sample and replaced according to survey decision rules.



Callers contacted all of the 590 households in the final sample and presented the adult who answered with a set speech that explained and discussed the survey and asked for a commitment to participate (see Appendix III). This discussion was in English or Spanish where appropriate. The speech asked for the current address of those consenting (an important detail) and presented them with a tactful discussion on nonreturned questionnaires.

Callers assured those who refused to participate that it was quite alright and did not press them for reasons. Reasons for refusal (when given) are summarized in Appendix IV. The most common reason was "not interested" followed by "too busy." "Not knowledgeable" was third even though the callers assured these people that the questionnaire was non-technical.

#### Follow-Up by Mail

All respondents (194) who, according to their identification code numbers, had failed to return the first questionnaire received a follow-up mailing. The mailing contained a questionnaire identical to the first and a new cover letter explaining tactfully that this mailing was an added convenience in case something had happened to the original questionnaire (see Appendix V). Five weeks later the researchers closed down the survey and began analysis.

### ANALYSIS OF SAMPLE

#### Response Rate

The total sample consisted of 590 households from twenty geographic areas of the state of New Mexico. As a result of the telephone precalls, 453 households (77 percent) agreed to return the mail questionnaire. A total of 314 questionnaires were returned, 310 of which were in usable form.

The usable response rate was 69 percent if only mailed questionnaires are considered and 53 percent of the total sample.

#### Characteristics of the Respondents

Respondents were evenly distributed between male and female (51 percent male, 49 percent female). The researchers of this study feel this is largely due to the timing of the precalls so that males and females would be equally as likely to answer the telephone.

The mean age of the respondents is 45, and age ranges from 20 to 89 years. The most frequently marked education category was 'some college'; over 90 percent have at least a high school education. The people in the sample have lived in the state of New Mexico an average of 26.5 years and within their county over twenty years. Respondents' income ranged from under \$3000 to over \$25,000. Median income was in the range between \$15,000 and \$19,999. Over 40 percent of the sample households reported annual incomes above \$20,000.

Most respondents (76 percent) own their own home, and 65 percent of the respondents live in a city with a population of at least 15,000. A wide variety of occupational groups participated in the survey, and the sample was composed of 16 percent retired people. Just as many professionals as homemakers responded. The age and sex of the sample are very close to that of New Mexico residents in general. Only the 20-24 age group was under-represented. Those responding from predominately rural counties as well as those from mostly urban counties, plus those in between, are representative. This was expected because the sample design designated area samples according to population of that area. Occupations fairly represented in the sample include farmers and ranchers, blue collar workers, and sales people.

People in professional-technical fields were over-represented and white

collar jobs were under-represented. This coincides with the fact that respondents tended to have a higher income than New Mexican workers in general. Education level is also higher for sample respondents compared to the population in general. Those with less than a high school education were under-represented in about the same proportions as the overrepresentation of those with at least four years of college.

Finally, in spite of every effort to include those of a Hispanic background, the sample turned out to be predominately white (European other than Spanish). Approximately 80 percent of the respondents are white; those with a Spanish ethnic background make up about 17 of the remaining 20 percent of the sample.

## SURVEY RESULTS

The next several sections will present a discussion of the actual findings of the survey. The results will be broken into sections because of the wide variety of topics covered in the survey. Each section will deal with a specific aspect, of the questionnaire. The section headings will show the specific Part (Part I, Part II, or Part III) of the questionnaire and the topic being discussed.

### Part I - Government Involvement

Part I of the questionnaire asked the respondents to agree or disagree with a number of statements concerning New Mexico's water resources. Table 1 presents a summary of the mean scores for all respondents on each of the statements.

Although the results presented in Table 1 are varied, several specific generalizations can be made. Statements 2, 3, 4, 5, 12, 18, 28, and 29 all deal with governmental involvement with water resources. In each statement concerning governmental involvement, the responses are either neutral (neither agree or disagree) or progovernmental involvement. The

TABLE 1  
Mean Scores on Responses To Part I of Questionnaire

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
1. All forms of recreation should be made easily accessible to everyone.	1	2	3	(3.67)	5
2. The New Mexico State government should have complete control and policing power for all New Mexico lakes and streams.	1	2	3	(3.19)	5
3. Government regulations concerned with pollution control are for the general good of everyone involved.	1	2	3	(3.59)	5
4. The government should prohibit swimming in areas where the water is heavily polluted.	1	2	3	(4.18)	5
5. New Mexico State government agencies should play an important role in providing water recreation in New Mexico	1	2	3	(3.91)	5
6. A stream or lake that is free of offensive taste, color, or odor is safe for all forms of recreation.	1	2	(2.56)	4	5
7. The users of New Mexico's lakes, rivers, and streams should bear the bulk of the cost for operating these facilities.	1	2	3	(3.43)	5
8. A person should have the right to use his or her own water in any way they wish.	1	2	3	(3.09)	5
9. The use of rivers to provide electricity should be considered very important.	1	2	3	(4.09)	5
10. The use of rivers to provide irrigation should be considered very important.	1	2	3	(4.28)	5
11. The use of rivers to provide water for household use should be considered very important.	1	2	3	(3.91)	5
12. The New Mexico State government should have the power to regulate standards at privately owned water facilities in New Mexico.	1	2	3	(3.06)	5
13. A little water pollution in New Mexico's lakes and rivers doesn't really bother me.	1	(1.98)	3	4	5
14. Water pollution in New Mexico is a major problem at the present time.	1	2	3	(3.11)	5
15. Water pollution in New Mexico is about the same as in other areas of the United States.	1	2	(2.59)	4	5
16. Nuclear energy production should be encouraged in New Mexico.	1	2	3	(3.11)	5
17. Enough of New Mexico's streams, rivers and lakes has been set aside for wildlife protection and recreational use.	1	2	3	(3.23)	5
18. The New Mexico State government should use a larger portion of current tax monies to correct water pollution problems in New Mexico.	1	2	3	(3.43)	5
19. We should continue to increase economic growth in spite of environmental damage.	1	2	(2.47)	4	5
20. New Mexico's water supply is very abundant.	1	2	(2.21)	4	5

	<u>Strongly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Neither</u> <u>Agree nor</u> <u>Disagree</u>	<u>Agree</u>	<u>Strongly</u> <u>Agree</u>
21. There is more water in New Mexico's lakes, streams and other reservoirs than there is underground water in New Mexico.	1	2	(2.64)	3	4 5
22. The waste water from my home does not cause any pollution problems.	1	2	(3.00)	3	4 5
23. Households using large amounts of water should be charged a higher rate for water usage than those households using small amounts of water.	1	2	(3.35)	3	4 5
24. The quality of water I use at home is excellent.	1	2	(3.31)	3	4 5
25. Commercial water users should be charged higher rates for water usage than home owners.	1	2	(3.48)	3	4 5
26. Geothermal energy production should be encouraged in New Mexico even if that would lead to some pollution of the surface and ground waters in New Mexico.	1	2	(2.78)	3	4 5
27. Water Pollution control creates jobs in New Mexico.	1	2	(3.46)	3	4 5
28. The New Mexico State government is spending too much money on water pollution control.	1	2	(2.60)	3	4 5
29. The New Mexico State government puts too many water pollution restrictions on business.	1	2	(2.50)	3	4 5
30. The lakes, rivers, and streams in my community are very polluted.	1	2	(2.57)	3	4 5
31. I use bottled water for drinking in my home quite often.	1	(1.88)	2	3	4 5
32. The general public is adequately informed on the New Mexico State government's role in water pollution control.	1	(2.05)	2	3	4 5
33. The New Mexico news media provide adequate news about water pollution to keep the public informed.	1	(2.24)	2	3	4 5

results of responses to statement 4 indicate that New Mexico residents "agree" that the government should prohibit swimming in areas where the water is heavily polluted, while at the same time statement 5 indicates that the respondents "agree" that the New Mexico state government should play an important role in providing water recreation in New Mexico. The conclusion is that the residents of New Mexico believe that the government (state and otherwise) must play an important role in making water recreation available and safe.

Another interesting aspect of the respondents' beliefs about government involvement is shown by the responses to statement 28. The people responding to this survey do not feel that the New Mexico State government is spending too much for water pollution control. In addition, the respondents also do not feel that too many water pollution restrictions are being placed upon business (statement 29). The people of New Mexico (according to the responses to this survey) believe that the state government needs to be involved in water resources problems.

#### Part I - Recreation

Statements number 1, 6, and 17 deal with water recreation. Statement number 1 concerns the accessibility of recreation. Respondents to this question agree (mean = 3.67) that all forms of recreation should be made accessible to everyone. Only 21.5% (n=65) of the respondents disagree or strongly disagree with the statement, while 67.6% (n=205) of the respondents agree or strongly agree with the statement. This is an indication that a large percentage of the respondents feel that all forms of recreation (including water recreation) should be made available to everyone.

Statement number 6 considers the problem of obvious water pollution and recreational use of water. The majority of the respondents disagree or strongly disagree (n=170) with the statement "A stream or lake that is free of offensive taste, color, or odor is safe for all forms of recreation." Although there can be a number of reasons why the respondents answered in

the manner reported, it is possible they are aware that simply because a stream or lake is free of offensive, taste, color, or odor that certain types of pollution are still possible. In order for all forms of recreation to be safe, more extensive investigation is necessary.

The respondents were not clear on whether enough of New Mexico's streams, rivers and lakes have been set aside for wildlife protection and recreational use (statement number 17). These results indicate that the state water resource planners are going to have a different time pleasing all residents when determining if more or less of New Mexico's streams, lakes, and rivers should be set aside for recreation and wildlife protection.

#### Part I - Pollution Control

Several of the statements dealt with the problems of pollution and pollution control (statement numbers 6, 13, 14, 15, 19, 22, 26, 27, 29, and 30).

The respondents disagreed (mean = 1.98) with the statement that "A little water pollution in New Mexico's lakes and rivers doesn't bother me" (statement 13). In fact only 9.6% of the respondents (n=29) agreed or strongly agreed to the statement. At the same time, the respondents are not sure if water pollution in New Mexico is a problem (statement 14) or if it is about the same as in other areas of the United States (statement 15). It can be seen that respondents to the survey are concerned about water pollution in New Mexico, but they do not appear to know to what extent water pollution is a problem in New Mexico.

The remaining statements dealing with water pollution in New Mexico also indicate that the respondents are not sure of what impact water pollution and water pollution control is having on the state of New Mexico. In fact when asked about waste water from their own home, the respondents could not say whether this household waste water causes any pollution problems (statement 22).

The results of this study indicate that the respondents are concerned about water pollution in New Mexico, but they do not have the information or knowledge to make definitive statements concerning New Mexico's water pollution problem.

#### Part I - Alternative Uses of New Mexico's Water Resources

A large number of statements concern how New Mexico's water resources should be utilized and controlled. The responses to these statements must be considered in relation to the fact that the respondents do not believe that New Mexico's water is very abundant (statement 20).

Alternative uses of New Mexico's water resource are in the electricity, irrigation, and household areas. When responding to statements on these alternatives, the respondents agreed that all three should be considered important (statement numbers 9, 10, and 11). This is an indication that there is no simple solution to what New Mexico residents believe is the single most important use of New Mexico's water resources. (This problem is analyzed in more depth in Part III of the questionnaire).

In a related statement the subjects were asked if "Nuclear energy production should be encouraged in New Mexico" (statement 16). The responses to this statement are well divided. Table 2 presents the breakdown of responses to statement 16.

#### Part I - Information About Water Pollution Control

Two statements (numbers 32 and 33) asked the subjects to respond to how well informed the public is about water pollution problems.

Statement 32 asks the respondents if they feel the general public is kept adequately informed about the New Mexico state government's role in water pollution control. A large majority of the respondents (76.6%; n = 233) disagreed or strongly disagreed that the general public is kept well informed.



TABLE 2

Responses to "Nuclear energy production should be encouraged in New Mexico."

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<u>Response</u>	<u>Absolute*</u> <u>frequency</u>	<u>%</u>
Strongly Agree	53	17.4
Agree	89	29.2
Neutral	56	18.4
Disagree	52	17.0
Strongly Disagree	55	18.0
Total	305	100%

---

\*Five subjects did not respond to this statement.

Statement 33 concerns the amount of news coverage water pollution problems receive from the New Mexico news media. Again, a large percentage of the respondents (66.9%; n = 202) do not believe that the New Mexico news media provide adequate news coverage about water pollution to keep the public informed.

These answers to statement 32 and 33 are most surprising, considering this survey took place near the end of 1979, after almost three years of an intensive education program by water pollution agencies in the state. An agency receiving such feedback would do well to examine its educational program for areas of improvement, especially in the area of media communication.

#### Part II - New Mexico's Governmental Water Pollution Programs

The subjects were asked "At what governmental level do you believe most water pollution problems in New Mexico should be handled?" Table 3 shows the distribution of responses to this question. Table 3 shows that the majority of the respondents believe that New Mexico's water pollution problems should be handled by the state government, and not at the local, county, or even federal level.

Since the majority of respondents felt that the New Mexico State government should have primary responsibility in handling New Mexico's water pollution problems, it is interesting to see that the majority of the respondents do not even know if New Mexico has a program to combat water pollution. Almost 70% (n = 210) of the respondents indicated that they did not know if New Mexico has a program to combat water pollution. When asked "How effective is the present program in New Mexico in controlling water pollution?" the majority of respondents again indicated they did not know (n = 200; 65.6%).

TABLE 3

"At what governmental level do you believe most water pollution problems in New Mexico should be handled?"

Response	Frequency*	Percentage
Local government	20	6.5
County government	25	8.2
State government	190	62.1
Federal government	43	13.9
Private citizens	13	4.2
No opinion	15	4.8
Total	306	100.9

\*4 subjects did not respond to this question.

Over 67% (n = 207) of those responding indicated that they don't know to whom water pollution problems in their area should be reported. In addition, only 9% (n = 28) of the respondents reported having attended a public hearing held by any state agency in the last two years. These responses support the indication that the citizens of New Mexico are not well educated on water pollution programs in the state.

A communication problem appears to exist between the individuals operating New Mexico's water pollution control programs and the citizens of the state. It is clear that the respondents to this survey believe water pollution control should be handled at the state level, but they are not aware of any New Mexico state programs, or how effective these programs may be.

Part II - Payment For Water Pollution Control

Subjects were asked to respond to the following question, "Would you be willing to pay additional taxes to reduce water pollution?" Table 4 gives the distribution of responses to this question.

TABLE 4

"Would you be willing to pay additional taxes to reduce water pollution?"

Response	Frequency*	Percentage
Yes	86	28.3
No	103	33.9
Can't Decide	115	37.8
Total	304	100%

\*6 subjects did not answer this question.

From Table 4 it can be seen that the majority of respondents to this survey are not certain they want to pay additional taxes for water pollution control. Of those respondents that indicated a dollar amount of additional taxes they would be willing to pay for water pollution control, the majority of responses were less than \$50.00 a year.

The subjects were asked to respond to the following question:

"If your local government had \$1,000 of your taxes to split between cleaner water and creating more jobs, how much of that \$1,000 should be given to cleaner water and how much to more jobs?"

The responses were relatively evenly split between the dollar amounts allocated for more jobs and the dollar amounts allocated to cleaner water. A split of \$500.00 to each was the most common answer (n = 101). Fifteen respondents allocated the total dollar amount to more jobs, while 55 responses allocated the total dollar amount to clean water.

Another question asked the subjects to respond to a more specific water pollution problem by responding to the following question:

"Assume a project is proposed to make the water cleaner in a lake you use for recreation in New Mexico. How much would you personally be willing to pay (per year) for this result?"

Table 5 provides the distribution of responses to this question.

TABLE 5

"How much would you personally be willing to pay (per year) to make the water cleaner in a lake you use for recreation in New Mexico?"

Response	Frequency*	Percentage
\$1 - \$4	77	26.5
\$5 - \$10	83	28.5
Over \$10	43	14.8
Nothing	88	28.4
Total	291	100%

\*19 subjects did not respond to this question.

Table 6 shows how what method of collection the respondents recommend for the above project.

TABLE 6

"What method of payment would you recommend for a project to make water cleaner in a lake you use for recreation in New Mexico?"

Response	Frequency*	Percentage
Raise State Income Taxes	16	5.5
Sales Tax Increases in Lake Area	12	4.1
Daily Fee to Users of Lake	160	55.0
Yearly User Permit for Lake	79	27.1
Other	24	8.3
Total	291	100%

\*19 subjects did not respond to this question.

From Tables 5 and 6 it is obvious that the majority of respondents are willing to pay a small amount to clean the water in a lake they use for recreation. It is also clear that they believe this payment should be some type of user fee (either daily or annual).

The respondents also believe that those individuals and organizations that pollute the water should pay for the pollution they create. This is shown in responses to the following question, "Do you feel that industries, municipalities, and others who discharge wastes into New Mexico's streams, lakes, and rivers should be taxed according to the amounts they discharge?" A full 98% of those responding to this question (n = 289) said they felt that those discharging waste should be taxed according to the amount they discharged. Those who pollute more should be taxed more.

## Part II - Recreational Participation

Table 7 shows how often the respondents participated in selected water-related activities in New Mexico. The table shows that the respondents to the survey were, for the most part, active in recreational activities in and around New Mexico's rivers, lakes, and streams. Picnicking, sightseeing, and camping were the most commonly mentioned activities.

TABLE 7

Number of times per year respondents participated in selected recreational activities in New Mexico.

Activity	Responses			Never	Total
	1-10 times	10-20 times	1 or more times		
Sightseeing near water	180	26	22	82	310
Swimming	71	11	8	220	310
Fishing	112	32	20	146	310
Pleasure Boating	73	8	4	225	310
Water Skiing	46	7	4	253	310
Camping Near Water	134	22	14	140	310
Hiking Near Water	118	24	8	160	310
Waterfoul Hunting	26	5	3	276	310
Picnicking Near Water	194	21	11	84	310

## Part II - Water Usage

The majority of the respondents (n = 204; 65.8%) obtained their home drinking water from wells. It is not possible to tell from the responses what portion of the respondents have a private well, and how many are using well water from a municipal system.

Only 20% (n = 62) of the respondents utilized a septic tank system

for home waste water. The majority (n = 238) belonged to public sewage systems for the elimination of waste water.

Most respondents (n = 173) to the survey did not know how many gallons of waste water they were producing in their home per day. This is another indication that New Mexico residents are not certain about their particular role in water resource problems.

Part II - Conservation Techniques

Table 8 provides the responses to a question asking the subject to identify the measures they have taken to conserve water.

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TABLE 8  
Measures Taken To Conserve Water

Measure Taken	Number of Responses*	% of Subjects Mentioning
Shorter Showers	58	18.7
Water Lawn Less	143	46.1
More Efficient Dishwashing	58	18.7
Flush Toilet Less	27	8.7
Fix Leaks	45	14.5
More Efficient Clothes Washing	65	21.0
Run Water Less	24	7.7
Wash Car Less	11	3.5
Other	43	13.9

---

\* Multiple answers were allowed.

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Table 8 indicates that many of the respondents were attempting to do something to conserve water in New Mexico. The question (Part II, Number 13) was "open-ended," therefore, the responses were not aided by the questionnaire.



In a question related to conservation measures, the subjects were asked to respond to the following questions, "How do you feel about the growth of population in the area where you live?" The responses were split with 39.9% (n = 127) of these responding in favor of increased population growth in their area and 47.0% (n = 144) opposing population growth in their area. Forty (13.1%) of the respondents stated that they did not know whether population should increase or decrease.

Part II - Responsibility for Environmental Planning

A final question in Part II asked the respondents to answer the following question, "Do you think it is more important for the public to be involved in developing environmental plans or is it better to leave planning to those who have had special training?" Table 9 shows the distribution of responses to this question.

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TABLE 9

"Do you think it is more important for the public to be involved in developing environmental plans or is it better to leave planning to those who have had special training?"

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Response	Number*	% of Total*
Involve The Public	191	62.8
Leave It To Specialists	96	31.6
Don't Know	17	5.6
Total	304	100%

---

\*6 subjects did not respond to this question.

---

By almost a two to one margin, the respondents to the survey said that the public should be involved in environmental planning. This is an important indication that New Mexico's water resource planners must find a way to

involve not only experts, but the general public as well, in any environmental plans.

### Part III - Water Use Tradeoffs

Part III of the questionnaire asks the respondent to rank, in order of importance, several water use and pollution tradeoffs. The first question deals with water supply alternatives. The results of the responses are given in Table 10 below.

From Table 10 it is clear that New Mexico residents are more concerned with having a good quality of unrestricted drinking water in their home than they are with attractive resort areas, or even attractive looking and smelling lakes and rivers. The only use of water that was ranked high and did not involve home use was water for irrigation.

A second ranking question asked the subjects to rank seven items that might cause pollution in New Mexico. The items were ranked according to how serious the respondents felt the water pollution problem was. Table 11 provides the distribution of responses. The responses indicate that industrial water pollution is more serious than home or agricultural pollution. Mining operations and factory discharges were most often ranked as serious water pollution problems in this survey.

A final ranking question asked the subjects to indicate what they believe are the most important use of water in terms of the benefit to the people of New Mexico. Table 12 provides the distribution of responses to this question.

Home and agricultural use are again shown to be the most important uses of New Mexico's water supply. Industrial, water use, flood control projects, and recreational use were ranked lower. In fact, the respondents to this survey considered recreational use of New Mexico's water supply to be of a low importance.

TABLE 10  
 Respondents' Rank of Water Supply Alternative

Alternative	Number Ranking Most Important	Number Ranking 2nd in Importance	Number Ranking 3rd in Importance	Number Ranking 4th in Importance	Number Ranking 5th in Importance	Number Ranking 6th in Importance	Number Ranking Last in Importance
Good Fishing in New Mexico	3	7	19	75	67	47	61
Good Quality Drinking Water	219	48	8	2	2	1	0
Unrestricted Supply of Water to My Home	25	113	72	23	10	16	21
Water for Irrigation in New Mexico	26	93	115	24	7	8	6
Clean Lakes and Rivers for Swimming	2	9	31	69	69	54	45
Attractive Looking and Smelling Lakes and Rivers in New Mexico	4	7	16	55	90	86	21
Attractive Resort Areas Around New Mexico Lakes, Streams, and Rivers	1	3	18	31	34	67	124

TABLE 11  
 Respondents' Rank of Water Pollution

Water Pollution Problem	Number Ranking Most Serious		Number Ranking 2nd Most Serious		Number Ranking 3rd Most Serious		Number Ranking 4th Most Serious		Number Ranking 5th Most Serious		Number Ranking 6th Most Serious		Number Ranking Least Serious	
	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking
Run-Off From Farms	5	11	23	30	52	60	89							
City Sewage Systems	69	62	52	33	25	22	8							
Factory Discharges	98	78	36	29	10	11	11							
Home Septic Tank Problems	13	29	38	50	48	45	47							
Erosion From Logging Mining Operations	58	53	53	46	37	14	11							
Littering Near Water	28	33	44	41	37	40	48							

TABLE 12

Ranking of Water Uses Believed To Be Most Important  
In Terms Of Benefit To The People Of New Mexico

Benefit	Number Ranking Most Important		Number Ranking 2nd Most Important		Number Ranking 3rd Most Important		Number Ranking 4th Most Important		Number Ranking 5th Most Important		Number Ranking 6th Most Important		Number Ranking Least Important	
	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking	Number	Ranking
Projects That Keep Rivers and Streams from Flooding	16	28	44	49	59	50	30							
Hydroelectric Power Generation	16	22	50	61	52	50	25							
To Dispose of Sewage and Industrial Wastes	15	21	35	23	42	57	82							
For Industrial Water Supply	1	16	53	59	54	55	37							
Maintain Streams, Rivers, and Lakes for Recreation Use	6	14	29	42	46	45	93							
For Farm Irrigation	39	118	46	35	17	15	5							
For Home and City Water Supply	182	57	18	7	5	3	3							

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this section is to summarize the study, state the general conclusions that may be drawn from the results of the data analysis, and present recommendations for future research.

### Summary

This research has dealt with how to acquire citizens' input into the planning of the allocation water resources in the state of New Mexico. The purpose of this study was to identify and examine, through the use of a mail survey, the attitudes of New Mexico residents toward the use of New Mexico's water resources.

The study is important because state water planners must find more methods of involving the public in the planning process. If the public does not become involved in the planning process, the acceptance of the final project may increase.

The research procedure utilized in this study consisted of contacting by telephone a random sample of New Mexico residents and asking them if they would be willing to participate in a mail questionnaire survey. The respondents who agreed to participate received the questionnaire in the mail. The respondents completed the questionnaire and returned it free of charge.

The total sample consisted of 590 households from the state of New Mexico. A total of 310 questionnaires were returned in usable form, for a response rate of 53 percent.

All responses were analyzed by using simple summary statistics. The major findings of the survey are as follows:

1. The respondents feel that the New Mexico state government needs to be involved in water resources problems.

2. A large percentage of the respondents believed that all forms of recreation should be made available to everyone. But the responses were evenly split on whether enough of New Mexico's streams, rivers, and lakes have been set aside for recreational use.
3. Even though the respondents are concerned about pollution control, they do not appear to know to what extent water pollution is a problem in New Mexico.
4. A large majority of the respondents do not feel that the general public is kept well informed about the state government's role in water pollution control. In addition, the respondents do not believe that the news media provide adequate news coverage about water pollution.
5. A larger percentage of respondents agree than disagree that nuclear energy should be encouraged in New Mexico.
6. The majority of respondents believe that New Mexico's water pollution problems should be handled by the state government, and not the local, county, or federal government.
7. The respondents are not well aware of New Mexico's state water pollution programs, or how effective these programs are.
8. Less than 30 percent of the respondents indicated they would be willing to pay additional taxes to reduce water pollution.
9. It is believed by the respondents that those individuals and organizations that pollute the water should pay for the pollution they create.
10. The respondents to the survey were, for the most part, active in recreational activities in and around New Mexico's streams, lakes, and rivers. Picknicking, sightseeing, and camping were the

activities most commonly mentioned.

11. Many of the respondents were attempting to conserve water in some manner.
12. The respondents felt strongly that the general public should be involved in environmental planning, and not leave planning to those who have had special training.
13. The responses indicate that New Mexico residents are more concerned with having a good quality of unrestricted drinking water than they are with attractive resort areas, or even attractive looking and smelling lakes and rivers.
14. Industrial water pollution is believed to be a more serious problem than home or agricultural water pollution.

#### Conclusions

The results of this study show that the use of a survey can be an important method of acquiring public input for the planning of water resources programs. The survey should not be the only method of obtaining public participation, but should be a supplement to the traditional methods of obtaining public participation.

Since the results of this survey indicate a substantial interest in water resources planning on the part of New Mexico residents, every effort must be made to generate greater public participation. At the present time it appears that the general population is relatively ignorant about the state government's role in the control of water pollution in New Mexico. The public does not feel they are kept adequately informed. Greater information and greater participation could conceivably bring about greater acceptance of the programs that are finally implemented.

The fact that home and agricultural use were shown to be the most important use of New Mexico's water supply, programs that will utilize



water for other purposes are more likely coming under pressure from the general public. This is an additional indication that the public must be allowed to participate in any water use program.

#### Recommendations for Future Research

The present study does not provide an unequivocal answer to how a survey can be utilized to aid in public participation. In fact, this survey covered very generally attitudes about water uses and tradeoffs. Much additional research is needed to determine clearly exactly what attitudes do exist, and how state water planners can use them. The use of surveying is still rare in New Mexico as an aid to increase public participation, therefore, future research is needed to improve the techniques.

Research is also needed to test the survey method on a smaller scale for a specific issue or plan. As this survey was done outside the agency setting, future research conducted and utilized by state water agencies or their contractors will shed more light on the effectiveness of this particular method of public participation.

Planners, or those with whom they contract who wish to use the mail questionnaire survey method in future public studies on water resource issues in New Mexico, will benefit from following these suggestions:

1. Explore the situation and take note of all limitations including time, money, personnel. This will help in the decision on whether the survey should be done in-house or contracted out.
2. Write down the objectives of the study, what information is needed, exactly, and speculations on expected outcome. This gives the study direction and purpose.
3. If the sample is to be chosen from telephone books, use only the most current books. This saves time during the precall by

minimizing 'not at this number' and 'disconnected number' calls.

4. Driver's license lists, voting lists, or other current information lists may be used to draw the sample, but it is important that they are representative of the population of interest. They may only contain the most motivated and active citizenry in the area, and may not represent at all the opinions of those likely to oppose a project in their area.
5. Design the survey within the framework of techniques found to increase response rate. It is very difficult to accurately predict outcomes or project to the total population from a survey with a low response rate.

The researchers especially recommend telephone precalling and the questionnaire booklet form. Although controls for those two techniques were not used it is felt that they were the two deciding factors in the high response rate obtained in the current survey. More than one follow-up is suggested if time and money allow.

6. Pretest the questionnaire. Much time and money will be saved by catching a critical error before the mailing goes out.
7. In New Mexico, offer the questionnaire in English or Spanish, to help motivate those of Hispanic background to respond.
8. Document the study well, especially techniques used to increase response, so that others may replicate what works well in previous studies.
9. Plan ahead and pay attention to detail. Each small technique adds to increased response and reliable end results.

This chapter has summarized the study, drawn conclusions from survey results, discussed implications for state planners and managers, and offered suggestions for future improvement of public participation programs.

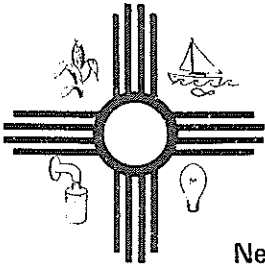
It is the hope of the researchers that this report facilitates planning and management by providing both current attitude information on water issues in New Mexico and guidelines for future research in the water resources area.

#### FOOTNOTES

1. Robert W. Snodgrass and Duane W. Hill, Achieving Urban Water Conservation: Testing Community Acceptance (Ft. Collins, Colo.: Colorado Environmental Resources Center, 1977), p. 1.
2. John A. Ballweg, Measuring Attitudes Toward Water Use Priorities (Blacksburg, Va.: Virginia Polytechnic Institute and State University Water Resources Research Center, 1972), p. 4.
3. John E. Carlson, Attitudes of Idaho Residents Toward Free Flowing Rivers as a Water Use in Idaho (Moscow, Idaho: University of Idaho Water Resources Research Institute, 1974), p. 2.
4. Education of Water Resource Planners and Managers for Effective Public Participation (Clemson, S.C.: Clemson University Water Resources Research Institute, 1978), p. 23.
5. A. Bruce Bishop, Structuring Communications Programs for Public Participation in Water Resources Planning (Fort Bevoir, Va.: U. S. Army Engineer Institute for Water Resources, 1975), p. 20.
6. Ibid., p. 1.
7. Edwin C. Hoyt, "Environmental Politics," New Mexico Government (Albuquerque, N.M.: University of New Mexico Press, 1976), p. 254.
8. New Mexico Statewide Water Quality Management Plan (Santa Fe, N.M.: Water Quality Control Commission, 1979), p. 3.
9. Section 208 Handbook, p. 19.
10. Leo M. Eisel, "Water Projects Review Function Within the Water Resources Council," Federal Register 44 (February 16, 1979), p. 10318.
11. Adam Clark Davis, Public Participation in Water Pollution Control Policy and Decision Making (Raleigh, N.C.: University of North Carolina Water Resources Research Institute, 1973), p. 3.
12. Gerald J. Thueson, A Study of Public Attitudes and Multiple Objective Decision Criteria for Water Pollution Control Projects (Atlanta, Georgia: Georgia Institute of Technology Environmental Resources Center, 1971), p. 3.
13. Benjamin C. Dysart, J. J. Fletcher, S. T. Sutterfield, and Charles H. Langton, Attitudes, Characteristics, and Education of Water Resource Planners and Managers Relative to Effective Public Participation (Clemson, S.C.: Clemson University Water Resources Research Institute, 1977), p. 3.

14. Gordon Bultena, David Rogers, and Vince Webb, Public Response to Planned Environmental Change (Ames, Iowa: Iowa State University, 1973), p. 84.
15. Gene E. Willeke, Education of Water Resources Planners and Managers for Effective Public Participation (Clemson, S.C.: Clemson University Water Resources Research Institute, 1978), p. 86.
16. Edward R. Kaynor, Historical, Political, and Social Factors Affecting Public Policy on River Diversion (Amherst, Mass.: University of Massachusetts Water Resources Research Center, 1972), p. 50
17. Lucy Fox, Proceedings of the Twenty-Second Annual New Mexico Water Conference, Garrey E. Carruthers, director (Las Cruces, N.M.: New Mexico State University Water Resources Research Institute, 1977), pp. 41-42.
18. Madge O. Ertel, The Participatory Role of Citizen Advisory Groups in New England Water Resources Planning: A Preliminary Study (Amherst, Mass.: University of Massachusetts Water Resources Research Center, 1972), p. 6.
19. Madge O. Ertel, The Role of Citizen Advisory Groups in Water Resources Planning (Amherst, Mass.: University of Massachusetts Water Resources Research Center, 1974), p. 40.
20. Adam Davis, Jill Anderson, and Richard Gough, Alternative Information and Interaction Approach to Public Participation in Water Resources Decision Making (Raleigh, N.C.: University of North Carolina Water Resources Research Institute, 1975), p. 4.
21. Davis et. al., Alternative Information, p. 3.
22. Bultena, Public Response, p. 94.; Bultena et. al., Community Values, p. 27.
23. Davis et. al., Alternative Information, p. 13.
24. Summarized from "Public Participation," Section 208 Quarterly Milestone Reports, Tables 4-7, 10 (Santa Fe, N.M.: Environmental Improvement Division, April 1977-June 1979).
25. "Public Meeting Notice," Section 208 News (Santa Fe, N.M.: New Mexico Environmental Improvement Division, 1976), p. 1. Telephone number is 505-827-5271 ext. 372.
26. Ralph Stone and Company, Waste Water Reclamation: Socio-Economics, Technology, and Public Acceptance (Los Angeles, Cal.: Ralph Stone and Company, 1974), p. AV-1.

APPENDIX I  
QUESTIONNAIRE BOOKLET  
ENGLISH AND SPANISH



**New Mexico Water Resources Research Institute**

New Mexico State University • Telephone (505) ~~646-4337~~ • Box 3167, Las Cruces, New Mexico 88003  
(505)646-3341

Dear Citizen:

This is the questionnaire on New Mexico Water issues that we discussed over the telephone recently. Again let us express our sincere appreciation for your agreement to complete the questionnaire and return it to us.


As we discussed, this study is being conducted to determine public opinions and attitudes toward water in New Mexico. As a citizen, your input is very important because the water issues being decided around the state this year will definitely affect the quality and quantity of water available for your use.

You can be assured that all replies to this survey will be handled in a completely anonymous and confidential manner - absolutely no individual responses will be revealed to parties outside the research team.

If you wish additional information on the results of this study, please feel free to contact me at your convenience. Turn to page one and begin. You will come away with the satisfaction that you have given your opinions to someone who cares.

If you have any questions, please feel free to call me.

Sincerely,

  
Eric R. Pratt  
(505)646-3341

PART I

For each of the following statements indicate your response by circling the most appropriate answer. Each question will be answered in the following way:

- a. If you strongly disagree with the statement circle the number "1".
- b. If you disagree with the statement circle number "2".
- c. If you neither agree or disagree with the statement circle the number "3".
- d. If you agree with the statement circle the number "4".
- e. If you strongly agree with the statement circle the number "5".

	<u>Strongly</u> <u>Disagree</u>	<u>Dis-</u> <u>agree</u>	<u>Neither</u> <u>Agree nor</u> <u>Disagree</u>	<u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1. All forms of recreation should be made easily accessible to everyone.	1	2	3	4	5
2. The New Mexico State government should have complete control and policing powers for all New Mexico lakes and streams.	1	2	3	4	5
3. Government regulations concerned with pollution control are for the general good of everyone involved.	1	2	3	4	5
4. The government should prohibit swimming in areas where the water is heavily polluted.	1	2	3	4	5
5. New Mexico State government agencies should play an important role in providing water recreation in New Mexico	1	2	3	4	5
6. A stream or lake that is free of offensive taste, color, or odor is safe for all forms of recreation.	1	2	3	4	5
7. The users of New Mexico's lakes, rivers, and streams should bear the bulk of the cost for operating these facilities.	1	2	3	4	5
8. A person should have the right to use his or her own water in any way they wish.	1	2	3	4	5
9. The use of rivers to provide electricity should be considered very important.	1	2	3	4	5
10. The use of rivers to provide irrigation should be considered very important.	1	2	3	4	5
11. The use of rivers to provide water for household use should be considered very important.	1	2	3	4	5



	<u>Strongly</u> <u>Disagree</u>	<u>Dis-</u> <u>agree</u>	<u>Neither</u> <u>Agree nor</u> <u>Disagree</u>	<u>Agree</u>	<u>Strongly</u> <u>Agree</u>
12. The New Mexico State government should have the power to regulate standards at privately owned water facilities in New Mexico.	1	2	3	4	5
13. A little water pollution in New Mexico's lakes and rivers doesn't really bother me.	1	2	3	4	5
14. Water pollution in New Mexico is a major problem at the present time.	1	2	3	4	5
15. Water pollution in New Mexico is about the same as in other areas of the United States.	1	2	3	4	5
16. Nuclear energy production should be encouraged in New Mexico.	1	2	3	4	5
17. Enough of New Mexico's streams, rivers and lakes has been set aside for wildlife protection and recreational use.	1	2	3	4	5
18. The New Mexico State government should use a larger portion of current tax monies to correct water pollution problems in New Mexico.	1	2	3	4	5
19. We should continue to increase economic growth in spite of environmental damage.	1	2	3	4	5
20. New Mexico's water supply is very abundant.	1	2	3	4	5
21. There is more water in New Mexico's lakes, streams and other reservoirs than there is underground water in New Mexico.	1	2	3	4	5
22. The waste water from my home does not cause any pollution problems.	1	2	3	4	5
23. Households using large amounts of water should be charged a higher rate for water usage than those households using small amounts of water.	1	2	3	4	5
24. The quality of water I use at home is excellent.	1	2	3	4	5
25. Commercial water users should be charged higher rates for water usage than home owners.	1	2	3	4	5

	Strongly Disagree	Dis- agree	Neither Agree nor Disagree	Agree	Strongly Agree
26. Geothermal energy production should be encouraged in New Mexico even if that would lead to some pollution of the surface and ground waters in New Mexico.	1	2	3	4	5
27. Water pollution control creates jobs in New Mexico.	1	2	3	4	5
28. The New Mexico State government is spending too much money on water pollution control.	1	2	3	4	5
29. The New Mexico State government puts too many water pollution restrictions on business.	1	2	3	4	5
30. The lakes, rivers, and streams in my community are very polluted.	1	2	3	4	5
31. I use bottled water for drinking in my home quite often.	1	2	3	4	5
32. The general public is adequately informed on the New Mexico State government's role in water pollution control.	1	2	3	4	5
33. The New Mexico news media provide adequate news about water pollution to keep the public informed.	1	2	3	4	5

PART II

Please answer each of the following questions by placing an "X" or a check mark in the space which most appropriately indicates your ideas about some of the problems facing New Mexicans today.

1. Many water pollution problems in New Mexico are not limited to a single county or city, or even to the state of New Mexico. At what governmental level do you believe most water pollution problems in New Mexico should be handled? (Mark Only One Answer)
  - a. \_\_\_\_\_ Local Government
  - b. \_\_\_\_\_ County Government
  - c. \_\_\_\_\_ State Government
  - d. \_\_\_\_\_ Federal Government
  - e. \_\_\_\_\_ Private Citizens and not the government should be responsible
  - f. \_\_\_\_\_ No opinion

2. Does the State of New Mexico have a program to combat water pollution?
- a.  Yes
- b.  No
- c.  Don't know
3. How effective is the present program in New Mexico in controlling water pollution?
- a.  Very effective
- b.  Effective
- c.  Not very effective
- d.  Ineffective
- e.  Very ineffective
- f.  Don't know
4. If your local government had \$1,000 of your taxes to split between cleaner water and creating more jobs, how much of that \$1,000 should be given to cleaner water and how much to more jobs? Please indicate the dollar amount you would recommend for each.
- a. To more jobs      \$ \_\_\_\_\_
- b. To cleaner water \$ \_\_\_\_\_
- TOTAL    \$ 1,000.00
5. Do you know to whom you would report water pollution in your area?
- a.  Yes: to whom? \_\_\_\_\_
- b.  Don't Know
- c.  Would not report it
6. Would you be willing to pay additional taxes to reduce water pollution?
- a.  Yes; How many additional dollars would you pay per year? \$ \_\_\_\_\_
- b.  No
- c.  Can't decide
7. Do you feel that industries, municipalities, and others who discharge wastes into New Mexico's streams, lakes and rivers should be taxed according to the amounts they discharge?
- a.  Yes
- b.  No
8. Have you ever attended a public hearing held by any state agency in the last two years?
- a.  Yes
- b.  No
- If your answer is yes, what agency held it? \_\_\_\_\_
-

9. How many times per year have you participated in each of the following recreational activities in New Mexico's lakes, streams and rivers? Check each appropriate answer.

<u>Activity</u>	<u>Never</u>	<u>1-10</u>	<u>10-20</u>	<u>21 or more</u>	<u>Main Location</u>
Sightseeing near water	_____	_____	_____	_____	_____
Swimming	_____	_____	_____	_____	_____
Fishing	_____	_____	_____	_____	_____
Pleasure Boating	_____	_____	_____	_____	_____
Water Skiing	_____	_____	_____	_____	_____
Camping near water	_____	_____	_____	_____	_____
Hiking near water	_____	_____	_____	_____	_____
Waterfowl hunting	_____	_____	_____	_____	_____
Picnicking near water	_____	_____	_____	_____	_____

10. Where does your home's drinking water come from?

a. well \_\_\_\_\_ b. lake or river (reservoir) \_\_\_\_\_ c. don't know \_\_\_\_\_

11. Where does your home's waste water go?

a. septic tank \_\_\_\_\_ b. public sewage system \_\_\_\_\_ c. other \_\_\_\_\_

12. About how many gallons of water does your home use per day?

a. approximately \_\_\_\_\_ gallons b. don't know \_\_\_\_\_

13. What measures if any have you taken to conserve water?

a. I have taken the following measures to conserve water.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. I have taken no measures to conserve water \_\_\_\_\_

14. Assume a project is proposed to make the water cleaner in a lake you use for recreation in New Mexico. How much would you personally be willing to pay (per year) for this result?
- a.  Nothing
  - b.  \$1 to \$4
  - c.  \$5 to \$10
  - d.  Over \$10
15. What method of payment collection would you recommend for the above project? (Mark Only One Answer)
- a.  Raise State income taxes
  - b.  Sales tax increase in lake areas
  - c.  Daily fee to users of lake resorts
  - d.  Yearly user permit for the lake
  - e.  Other (explain) \_\_\_\_\_  
\_\_\_\_\_
16. How do you feel about the growth of population in the area where you live?
- a.  I favor increased population in my area
  - b.  I oppose an increase in the population of my area
  - c.  I don't know
17. Do you think it is more important for the public to be involved in developing environmental plans or is it better to leave planning to those who have had special training? (Check only the One answer you believe is more important)
- a.  Involve the public
  - b.  Leave it to specialists
  - c.  Don't know

PART III

In each of the following three questions, you will be asked to rank items in accordance to how important you believe them to be. Rank an item with a "1" if you believe it is the most important, a "2" if you believe it is the second most important, continuing until you have ranked all seven items for each question.

1. Rank the following items from 1 to 7. (Put a "1" by the item that is most important to you, a "2" by the one that is next most important, etc.)
  - a. \_\_\_\_\_ Good fishing in New Mexico
  - b. \_\_\_\_\_ Good quality drinking water in New Mexico
  - c. \_\_\_\_\_ Unrestricted supply of water to my home
  - d. \_\_\_\_\_ Water for irrigation in New Mexico
  - e. \_\_\_\_\_ Clean lakes and rivers for swimming in New Mexico
  - f. \_\_\_\_\_ Attractive looking and smelling lakes and rivers in New Mexico
  - g. \_\_\_\_\_ Attractive resort areas around New Mexico lakes, streams and rivers
  
2. Please rank the following seven items that might cause water pollution in New Mexico. Rank the item you believe is the most serious water pollution problem with a "1", the next serious problem with a "2", etc.
  - a. \_\_\_\_\_ Run-off from farms
  - b. \_\_\_\_\_ City sewage systems
  - c. \_\_\_\_\_ Factory discharges
  - d. \_\_\_\_\_ Home septic tank problems
  - e. \_\_\_\_\_ Erosion from logging
  - f. \_\_\_\_\_ Mining operation
  - g. \_\_\_\_\_ Littering near water
  
3. Please rank the following uses of water you believe are most important in terms of the benefit to the people of New Mexico (1 for the most important use, 2 for the next important use, continuing until you have ranked all seven items).

AGAIN, BE SURE TO RANK EACH OF THE SEVEN ITEMS BELOW IN TERMS OF THEIR IMPORTANCE.

<u>Rank</u>	<u>Use of New Mexico's water resources</u>
_____	Projects that keep rivers and streams from flooding
_____	Hydroelectric power generation
_____	To dispose of sewage and industrial wastes
_____	For industrial water supply
_____	Maintain streams, rivers and lakes for recreation use
_____	For farm irrigation
_____	For home and city water supply

PART IV

Please answer each of the following questions about yourself.

Personal Data

1. Male  Female
2. Age
3. What is your highest level of education? (Check One)
  - a.  some high school
  - b.  finished high school
  - c.  some college
  - d.  4 year college degree
  - e.  advanced college degree
4. What is your ethnic background? (Check One)
  - a.  White (European other than Spanish)
  - b.  Hispanic (of Spanish speaking background)
  - c.  Black
  - d.  Oriental (Asian or Pacific Island)
  - e.  Native American (Indian)
5. How long have you lived in New Mexico?
6. How long have you lived in the county where you now live?
7. What is your family income in thousands of dollars per year? (Check One)
  - a.  Under \$3,000
  - b.  \$ 3,000 - \$ 9,999
  - c.  \$10,000 - \$14,999
  - d.  \$15,000 - \$19,999
  - e.  \$20,000 - \$24,999
  - f.  Over 25,000
8. Is your current home
  - a.  A house you own
  - b.  A house you rent
  - c.  An apartment you rent
  - d.  A house trailer
  - e. Other (specify)
9. What is your present occupation?
10. What is the population of the town you live in? (Check One)
  - a.  Less than 1,000
  - b.  1,000 - 10,000
  - c.  10,000 - 25,000
  - d.  Over 25,000
11. What is your zip code?

PART V

What do you believe can be done in the State of New Mexico to deal with the problems developed by water and water pollution control?

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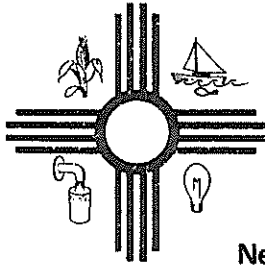
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**New Mexico Water Resources Research Institute**

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

Estimado Ciudadano:

Este es el cuestionario, el cual discutimos por teléfono recientemente, sobre asuntos del agua en el estado de Nuevo México. Quiero expresar de nuevo mi agradecimiento por su cooperación en consentir a llenar y regresarnos este cuestionario.

Como discutimos por teléfono, estamos haciendo este estudio para determinar opiniones y actitudes del público hacia asuntos del agua en Nuevo México. Su opinión, como ciudadano de este estado, es muy importante porque las decisiones que se están haciendo en Nuevo México este año en asuntos del agua van a afectar la cantidad y calidad de su agua.

Si gustará más información sobre los resultados de este estudio no deje de hacerme saber. Abra su cuestionario en página número uno y empiese. Va a terminar el cuestionario con la satisfacción que ha dado sus opiniones a alguien que los estima.

Si tiene preguntas, por favor llámeme.

Sin más por el momento, queda de Ud.

Atentamente,

Eric R. Pratt  
(505) 646-3341

PARTE I

En los siguientes relatos indique su repuesta con una marca circular en la contestación más apropiada. Cada pregunta se contestará del siguiente modo:

- a. Si fuertemente se opone con el relato marque con marca circular el número "1".
- b. Si se opone con el relato marque el número "2".
- c. Si es neutral con el relato marque el número "3".
- d. Si está de acuerdo con el relato marque el número "4".
- e. Si fuertemente está de acuerdo con el relato marque el número "5".

	<u>Fuertemente</u> <u>Me Opongo</u>	<u>Me Opongo</u>	<u>Estoy</u> <u>Neutral</u>	<u>Estoy de</u> <u>Acuerdo</u>	<u>Fuertemente</u> <u>Estoy de</u> <u>Acuerdo</u>
1. Toda forma de recreación debería ser fácilmente accesible a todos.	1	2	3	4	5
2. El gobierno del estado de Nuevo México debería tener control completo y poder judicial sobre los lagos y corrientes localizados en este estado.	1	2	3	4	5
3. Reglamentos del gobierno sobre el control de la contaminación son para el bien del público.	1	2	3	4	5
4. El gobierno debe de prohibir la natación en áreas donde el agua está muy contaminada.	1	2	3	4	5
5. El gobierno del estado de Nuevo México debe de tomar un papel importante promoviendo recreación acuática en Nuevo México.	1	2	3	4	5
6. Un lago o corriente que está libre de sabor, color y olor ofensivo es bueno para todas formas de recreación.	1	2	3	4	5
7. Las personas que usan los lagos, ríos y corrientes de Nuevo México deben de tomar la mayor parte del costo de operación de estas facilidades.	1	2	3	4	5

	<u>Fuertemente</u> <u>Me Opongo</u>	<u>Me Opongo</u>	<u>Estoy</u> <u>Neutral</u>	<u>Estoy de</u> <u>Acuerdo</u>	<u>Fuertemente</u> <u>Estoy de</u> <u>Acuerdo</u>
8. Una persona debe de tener el derecho de usar su agua como él o ella desee usarla.	1	2	3	4	5
9. El uso de ríos para proveer electricidad debe de ser considerado muy importante.	1	2	3	4	5
10. El uso de ríos para el riego debe de ser considerado muy importante.	1	2	3	4	5
11. El uso de ríos para proveer agua que se usa en el hogar debe de ser considerado muy importante.	1	2	3	4	5
12. El gobierno del estado de Nuevo México debe de tener el poder de regular las facilidades privadas de agua localizadas en Nuevo México.	1	2	3	4	5
13. Un poco de contaminación en los lagos y ríos de Nuevo México no me preocupa.	1	2	3	4	5
14. Actualmente, la contaminación del agua no es un problema en el estado de Nuevo México.	1	2	3	4	5
15. La contaminación del agua en Nuevo México es igual en cantidad que la contaminación en otras partes de los Estados Unidos.	1	2	3	4	5
16. La producción de energía nuclear debería de ser promovida en Nuevo México.	1	2	3	4	5
17. Ya hay bastantes corrientes, ríos y lagos seleccionados para la protección de vida silvestre y uso recreacional en Nuevo México.	1	2	3	4	5
18. El gobierno de Nuevo México debería usar una porción más grande del dinero que recaudan hoy por medio de impuestos para corregir los problemas de la contaminación del agua en este estado.	1	2	3	4	5

	<u>Fuertemente</u> <u>Me Opongo</u>	<u>Me Opongo</u>	<u>Estoy</u> <u>Neutral</u>	<u>Estoy de</u> <u>Acuerdo</u>	<u>Fuertemente</u> <u>Estoy de</u> <u>Acuerdo</u>
19. Deberíamos de continuar con el aumento de crecimiento económico a pesar del daño que ocurre en el medio ambiente.	1	2	3	4	5
20. La cantidad del agua en Nuevo México es muy abundante.	1	2	3	4	5
21. En Nuevo México la cantidad de agua que hay en lagos, corrientes y otros depositos es mayor que la cantidad que hay en corrientes subterranas.	1	2	3	4	5
22. Los desperdicios del agua de mi casa no causan ningún problema de contaminación.	1	2	3	4	5
23. Hogares que usan grandes cantidades de agua deberían de tener una tasa de precio más alta por su uso del agua que los hogares que usan cantidades pequeñas.	1	2	3	4	5
24. La calidad del agua que uso en mi casa es excelente.	1	2	3	4	5
25. Uso de agua en un comercio debería costar más que el uso de agua en un hogar.	1	2	3	4	5
26. Producción de energía geotérmica debería ser promovida en Nuevo México a pesar de que dicha energía causaría alguna contaminación en aguas que se encuentran en la superficie y subterranas.	1	2	3	4	5
27. El control de la contaminación del agua en Nuevo México crea nuevos empleos en el estado.	1	2	3	4	5
28. El gobierno del estado de Nuevo México está gastando mucho dinero en el control de la contaminación del agua.	1	2	3	4	5

	<u>Fuertemente</u> <u>Me Opongo</u>	<u>Me Opongo</u>	<u>Estoy</u> <u>Neutral</u>	<u>Estoy de</u> <u>Acuerdo</u>	<u>Fuertemente</u> <u>Estoy de</u> <u>Acuerdo</u>
29. El gobierno del estado de Nuevo México impone muchas restricciones a las industrias sobre la contaminación del agua.	1	2	3	4	5
30. Los lagos, ríos y corrientes en mi comunidad están muy contaminados.	1	2	3	4	5
31. Para beber, yo muchas veces uso agua enbotellada en mi casa.	1	2	3	4	5
32. El público en general, está suficientemente informado sobre el papel que el estado de Nuevo México toma en el control de la contaminación del agua.	1	2	3	4	5
33. La prensa en el estado de Nuevo México provee noticias adecuadas para tener al público informado sobre el tema de la contaminación del agua.	1	2	3	4	5

## PARTE II

Por favor conteste las siguientes preguntas con una "X" o una marca "✓" en el espacio que más apropiadamente indica sus ideas sobre algunos de los problemas que los ciudadanos de Nuevo México tienen hoy.

1. Muchos de los problemas de la contaminación del agua en Nuevo México no se limitan a un sólo condado o ciudad, ni aun se limitan al estado de Nuevo México. ¿A cuál nivel gubernamental cree usted que corresponden los problemas de la contaminación del agua en Nuevo México?
  - a. \_\_\_\_\_ El Gobierno Local
  - b. \_\_\_\_\_ El Gobierno del Condado
  - c. \_\_\_\_\_ El Gobierno Estatal
  - d. \_\_\_\_\_ El Gobierno Federal
  - e. \_\_\_\_\_ Ciudadanos Privados y no el gobierno deberían ser responsables
  - f. \_\_\_\_\_ No tengo opinión

2. ¿Tiene el estado de Nuevo México un programa para combatir la contaminación del agua?
- a. \_\_\_\_\_ Sí
- b. \_\_\_\_\_ No
- c. \_\_\_\_\_ No sé
3. ¿Qué tal eficaz es el programa que tiene, actualmente, el estado de Nuevo México para controlar la contaminación del agua?
- a. \_\_\_\_\_ Muy eficaz
- b. \_\_\_\_\_ Eficaz
- c. \_\_\_\_\_ No muy eficaz
- d. \_\_\_\_\_ Ineficaz
- e. \_\_\_\_\_ Muy ineficaz
- f. \_\_\_\_\_ No sé
4. Si su gobierno local tuviera \$1,000 (mil dólares) de sus impuestos para repartir entre purificación del agua y creación de más empleos, ¿cuanto de estos \$1,000 debería ser dado para la purificación del agua y cuánto a la creación de empleos? Por favor indique la cantidad en dólares que usted recomendará para cada uno.
- a. Para más empleo \$ \_\_\_\_\_
- b. Para agua purificada \$ \_\_\_\_\_
- TOTAL \$ 1,000.00
5. ¿Sabe usted a quién debe de reportarle si acaso hay agua contaminada en su área?
- a. Sí: ¿a quién? \_\_\_\_\_
- b. No sé
- c. No lo reportaría
6. ¿Estuviera usted dispuesto a pagar más impuestos para reducir la contaminación del agua?
- a. Sí: ¿Cuánto más pagaría usted por año? \$ \_\_\_\_\_
- b. No
- c. No puedo decidir
7. ¿Cree usted que industrias, municipios y otros que descargan desperdicios en los lagos, ríos y corrientes de Nuevo México deberían cobrarseles impuestos según la cantidad de contaminación que descargen?
- a. \_\_\_\_\_ Sí
- b. \_\_\_\_\_ No

8. ¿Ha atendido usted una junta que haya tenido una agencia estatal en los últimos dos años?

a.  Sí

b.  No

Si contesto sí, ¿cuál agencia tuvo la junta? \_\_\_\_\_

9. ¿Cuántas veces por año ha participado usted en las siguientes actividades recreacionales en los lagos, ríos y corrientes de Nuevo México? Marque el más apropiado.

<u>Actividad</u>	<u>Nunca</u>	<u>1-10</u>	<u>10-20</u>	<u>21 o más</u>	<u>¿En cuál lugar?</u>
Visitar puntos de interés que están localizados junto al agua.	_____	_____	_____	_____	_____
Natación	_____	_____	_____	_____	_____
Pescar	_____	_____	_____	_____	_____
Salir en lancha (bote) para divertirse.	_____	_____	_____	_____	_____
Esquí acuático	_____	_____	_____	_____	_____
Acampar junto del agua	_____	_____	_____	_____	_____
Dar una caminata junto del agua.	_____	_____	_____	_____	_____
Cazar aves acuáticas	_____	_____	_____	_____	_____
Tener fiesta compestre junto al agua.	_____	_____	_____	_____	_____

10. ¿De dónde viene el agua que toma usted en su hogar?

a. de pozo \_\_\_\_\_ b. de un lago o río (deposito de agua) \_\_\_\_\_ c. no sé \_\_\_\_\_

11. ¿A dónde se va el agua que lleva el desperdicio de su hogar?

a. tanque séptico \_\_\_\_\_ b. sistema público de aguas negras \_\_\_\_\_ c. otro \_\_\_\_\_

12. ¿Cuántos galones de agua usa por día en su casa?

a. aproximadamente \_\_\_\_\_ galones b. no sé \_\_\_\_\_

13. ¿Cuáles medidas ha tomado usted para conservar el agua en su hogar?
- a. He tomado las siguientes medidas para conservar el agua.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- b. No he tomado ninguna medida para conservar el agua \_\_\_\_\_
14. Suponga que un proyecto se propone para purificar el agua en el lago que usted más frecuenta para su recreación en Nuevo México. ¿Cuánto dinero estuviera dispuesto a pagar usted (por año) para este resultado?
- a. \_\_\_\_\_ No pagaría nada
- b. \_\_\_\_\_ \$1 - \$4
- c. \_\_\_\_\_ \$5 - \$10
- d. \_\_\_\_\_ Más de \$10
15. ¿Cual método de colección de pagos recomendaría usted para dicho proyecto en pregunta #14. (Marque una respuesta solamente)
- a. \_\_\_\_\_ Subir los impuestos estatales sobre las entradas económicas
- b. \_\_\_\_\_ Subir los impuestos de venta en áreas con lagos
- c. \_\_\_\_\_ Cobrar pago diario a personas que frecuentan los lagos
- d. \_\_\_\_\_ Tener permiso anual para usar el lago.
- e. \_\_\_\_\_ Otro método (explíquelo) \_\_\_\_\_
- \_\_\_\_\_
16. ¿Que piensa usted del crecimiento de población en el área donde usted vive?
- a. \_\_\_\_\_ Estoy en favor del aumento de población en mi área
- b. \_\_\_\_\_ Estoy opuesto al aumento de población en mi área.
- c. \_\_\_\_\_ No sé
17. ¿Piensa usted que es más importante que se incluya al público en el desarrollo de planes para el medio ambiente o que es mejor que se dejen estos planes a personas que tienen entrenamiento especial? (Marque solamente una respuesta; la que usted piensa que es más importante).
- a. \_\_\_\_\_ Incluir al público
- b. \_\_\_\_\_ Dejar los planes a especialistas
- c. \_\_\_\_\_ No sé



PARTE III

En cada una de las siguientes tres preguntas se le pide que ponga cada ítem en grado de importancia. Póngale el grado "1" al ítem que cree usted que es más importante, el grado "2" al segundo más importante, continúe hasta que le ha puesto grado a todas las siete partes en cada pregunta.

1. Ponga en grado de importancia de 1 a 7 las siguientes partes. (Ponga un "1" en la línea con el ítem que es más importante para usted, ponga un "2" en la línea con el ítem que es el segundo más importante, etc.)
  - a. \_\_\_\_\_ Buena pesca en el estado de Nuevo México
  - b. \_\_\_\_\_ Agua de buena calidad en el estado de Nuevo México
  - c. \_\_\_\_\_ Provisión de agua sin límite para mi hogar
  - d. \_\_\_\_\_ Agua para riego en Nuevo México
  - e. \_\_\_\_\_ Lagos y ríos limpios para la natación en Nuevo México
  - f. \_\_\_\_\_ Lagos y ríos en Nuevo México que son atractivos y huelen bien
  - g. \_\_\_\_\_ Que sean atractivos los lagos, ríos y corrientes más frecuentados en el estado de Nuevo México.
  
2. Por favor ponga en orden las siguientes siete partes que podrían causar contaminación del agua en el estado de Nuevo México. Póngale el grado "1" al ítem que cree usted que causaría el problema más serio de contaminación, póngale el grado "2" al que causaría el segundo problema más serio, etc.
  - a. \_\_\_\_\_ El agua de desagüe de ranchos
  - b. \_\_\_\_\_ Sistemas públicos de aguas negras
  - c. \_\_\_\_\_ Descargos de desperdicios en fábricas
  - e. \_\_\_\_\_ Erosión causada por la extracción de maderas
  - f. \_\_\_\_\_ La operación de minas
  - g. \_\_\_\_\_ Basura junto al agua
  
3. Por favor ponga en orden los siguientes usos del agua que usted cree que son más importantes para el beneficio de la gente de Nuevo México. ("1" por el más importante, "2" por el segundo más importante, continúe hasta que le ponga grado a todas las siete partes).

POR FAVOR PONGA EN GRADO DE IMPORTANCIA LAS SIGUIENTE SIETE PARTES

<u>Grado</u>	<u>Uso de los recursos acuáticos en Nuevo México</u>
_____	Proyectos que impiden la inundación de los ríos y corrientes de Nuevo México
_____	La generación de potencia hidroeléctrica

- \_\_\_\_\_ Para disponer de desperdicios industriales y de desagües de alcantarillas
- \_\_\_\_\_ Para provisión de agua industrial
- \_\_\_\_\_ Mantener corrientes, ríos y lagos para el uso recreacional
- \_\_\_\_\_ Para riego de ranchos
- \_\_\_\_\_ Para provisión de agua al hogar y la ciudad

PARTE IV

Por favor conteste las siguientes preguntas sobre sí mismo.

Datos Personales

1. Hombre \_\_\_\_\_ Mujer \_\_\_\_\_
2. Edad \_\_\_\_\_
3. ¿Cuál es su nivel más alto de educación? (Marque solamente uno).
  - a. \_\_\_\_\_ algo de preparatoria (high school)
  - b. \_\_\_\_\_ acabé preparatoria (high school)
  - c. \_\_\_\_\_ algo de colegio
  - d. \_\_\_\_\_ titulado (4 años de colegio)
  - e. \_\_\_\_\_ título avanzado
4. ¿Cuál es su etnicidad? (Marque solamente uno).
  - a. \_\_\_\_\_ Blanco (Europeo que no sea Español)
  - b. \_\_\_\_\_ Hispánico (Hispanohablante)
  - c. \_\_\_\_\_ Negro
  - d. \_\_\_\_\_ Oriental (Asiático o de las Islas del Pacífico)
  - e. \_\_\_\_\_ Americano Nativo (Indio)
5. ¿Cuánto tiempo ha vivido usted en Nuevo México? \_\_\_\_\_
6. ¿Cuánto tiempo ha vivido usted en el condado donde vive hoy? \_\_\_\_\_
7. ¿Qué es la entrada económica anual de su familia en miles de dolares. (Marque solamente uno)
 

a. _____ Bajo de \$3,000	d. _____ \$15,000 - \$19,999
b. _____ \$3,000 - \$ 9,999	e. _____ \$20,000 - \$24,999
c. _____ \$10,000 - \$14,999	f. _____ Más de \$25,000

8. Es su casa actualmente
- a. \_\_\_\_\_ Casa propia
  - b. \_\_\_\_\_ Casa rentada
  - c. \_\_\_\_\_ Apartamento rentado
  - d. \_\_\_\_\_ Casa rodante
  - e. \_\_\_\_\_ Otro (especifique) \_\_\_\_\_
9. ¿Qué es su empleo actualmente? \_\_\_\_\_
10. ¿Cuántos habitantes hay en su pueblo? (Marque uno)
- a. \_\_\_\_\_ Menos de 1,000
  - b. \_\_\_\_\_ 1,000 - 10,000
  - c. \_\_\_\_\_ 10,000 - 25,000
  - d. \_\_\_\_\_ Más de 25,000
11. ¿Cuál es su "zip code"? \_\_\_\_\_

PARTE V

¿Qué piensa usted que se pueda hacer en el estado de Nuevo México para tratar con los problemas que se encuentran respecto al control del agua y al control de la contaminación del agua?

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MUCHAS GRACIAS POR SU COOPERACIÓN EN LLENAR Y REGRESAR ESTE CUESTIONARIO!  
 LE ESTAMOS SINCERAMENTE AGRADECIDOS.

APPENDIX II

## TELEPHONE SAMPLING RULES

If telephone is:

1. Answered - a) give speech if adult answers  
b) find out when parents will be back if child answers
2. Not answered - a) let it ring at least three or four times  
b) note time called  
c) call three times or until contact is made
  1. can try to contact only twice in one day and at least one hour apart
  2. third try (if needed) must be next day
3. Busy - a) note time called  
b) follow 2c above

Eliminate household from sample only if:

1. you have tried to contact household three times with no success
2. telephone is out of order or disconnected
3. if sample name does not have this telephone number any more (moved, usually)

APPENDIX III

TELEPHONE SPEECH

Hello, is this \_\_\_\_\_? This is (name) of the New Mexico Water Research Institute in Las Cruces. (For Spanish calls: We called you a while back in English but we found out you prefer Spanish so now we are calling you back in Spanish).

I'll tell you why I'm calling. We are making a study of citizen attitudes about water in New Mexico and we need some input from you as a citizen.

We randomly selected the names of a group of people in New Mexico, including you, and we're sending out questionnaires that take about twenty minutes to complete. Would you mind filling out one of our questionnaires?

(Answers: "I don't know") - (If reason is perceived lack of knowledge note it and assure respondent of nontechnical nature of questionnaire. Answer any question. Ask if they would like one or two example questions to help make up their mind.)

(Answer: "No") - That is quite alright. It's your privilege. Thank you for your time. (Note any reasons for saying no and hang up.)

(Answer: "Yes") - Oh, thank you! Would you give me the address to send it to? (Note address. Always get zip code.)  
Would you like your questionnaire in English or Spanish?  
(Where appropriate.)

(To those who want a questionnaire go on to say:)

You will recognize our questionnaire because it will come in a white envelope with red print. Okay? It will have a stamp and will be self-addressed so all you have to do is drop it in the mail when you get done. Okay?

You know, we call people like you ahead of time because we have found that if we don't call first, then many citizens won't return our questionnaire and the results of our study really suffer when that happens. You will try to return the questionnaire as soon as possible?

Do you have any questions I can answer about all this? Okay, then we'll send it out to you, Mr. (Mrs.) \_\_\_\_\_. Bye.

BREAKDOWN OF TELEPHONE NUMBERS CALLED

<u>Category</u>	<u>Number of Households Called</u>	<u>As Percent of Total</u>
Agreed to Participate	453	45.90
Declined to Participate	<u>137</u>	<u>13.88</u>
Included in Sample	590	59.78
No Answer (after three tries)	145	14.69
Name not at this telephone number	133	13.48
Out of Order or Disconnected	100	10.13
Other (includes Busy after three tries)	<u>19</u>	<u>1.92</u>
Eliminated from Sample	<u>397</u>	<u>40.22</u>
TOTAL	987	100.00



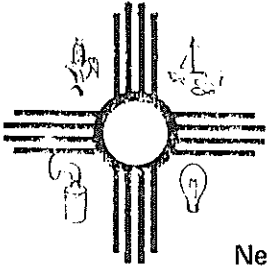
APPENDIX IV

Summary of "No" Answers

<u>Reason Given*</u>	<u>Number</u>	<u>Percent</u>
Not interested	25	18.2
Too busy	21	15.3
Not Knowledgeable	11	8.0
Physically unable to participate	5	3.7
Going on Vacation	5	3.7
Too old	4	2.9
Dislike surveys/filling out questionnaires	4	2.9
Can't read/write	3	2.2
Other	<u>5</u>	<u>3.7</u>
Total	83	60.6
No reason given	<u>54</u>	<u>39.4</u>
Total "No's"	137	100.0

\*Reasons were volunteered, not asked for.

APPENDIX V



New Mexico Water Resources Research Institute

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

Dear Citizen:

Several weeks ago you were sent a questionnaire on New Mexico Water issues. In a discussion over the telephone you agreed to fill out and return the questionnaire. If you have already returned the questionnaire you have our sincere THANK YOU and the satisfaction of participating in the decision making of your state.

However, from past research, we have found that sometimes a questionnaire gets lost in the mail, the dog gets a hold of it, or any one of a dozen other things can happen to a questionnaire that is beyond the control of the recipient. It is for this reason that we are now sending out a duplicate questionnaire to those of you who agreed over the telephone to participate in our water survey.

We hope this added convenience will convince you of our caring and eagerness to include your response in our survey. Remember we are just a phone call away if you have anything to discuss with us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Eric R. Pratt".

Eric R. Pratt