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STATE APPROPRIATION OF
UNAPPROPRIATED GROUNDWATER:
A STRATEGY FOR INSURING
NEW MEXICO A WATER FUTURE

SECOND REPORT

January 1987

University of New Mexico Law School*
and New Mexico
Water Resources Research Institute

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

This is the second study of state appropriation of unappropriated groundwater conducted as a joint venture of the Natural Resources Center at the University of New Mexico School of Law and the Water Resources Research Institute at New Mexico State University. As with the first study, the research team has been assisted by an advisory board consisting of the following persons: Governor Jack Campbell, Dr. Gerald Thomas, Robert B. Anderson, Les Davis, Carole R. Cristiano and Judge Joe Galvan. These people reflect a cross-section of political, economic and academic interests with respect to the state of New Mexico and have provided valuable guidance and support to the research team over the past three years. Steve Reynolds, the State Engineer of New Mexico, has also provided valuable information for various sections of the report.

Based upon the findings of the first study, in 1986 the legislature directed the research team to study the following issues concerning a state appropriation program: (1) What would be the cost of a state appropriation program? (2) How might the state fund such a program? (3) What agency should operate such a program? and (4) How can it be ensured that the program is responsive to all regions of the state? This executive summary describes the contents of this report and sets forth our findings concerning how New Mexico might implement a state appropriation program.

I. Organization of the Report

Chapter One sets out the findings of the first state appropriation study that serve as a backdrop for this second report. It also describes the benefits sought to be achieved with a state appropriation program. The second chapter presents the results of a survey conducted by the research team to broadly gauge local preferences related to state appropriation in four areas: (1) willingness to participate; (2) the perceived need for state appropriation; (3) institutional characteristics of a statewide program; and (4) the possibility of selling or leasing state-appropriated water to out-of-state parties. While the survey does not provide detailed input from specific areas as did the public meetings held during the first study, this was the most efficient means of gaining public input on a wider basis concerning the issues under study.

The survey indicates that the overwhelming majority are willing to consider participating in a state appropriation program. About two-thirds of the sample are willing to commit local resources such as technical and planning assistance. Nearly three-fourths of the sample think state appropriation is needed immediately or in the near future. In all regions, most respondents estimate that secure supplies are available for less than 40 years and nearly one-half of the sample think that secure supplies are available for less than 20 years.

The findings further suggest that state appropriation will require some state funding in the majority of cases. Many cite fiscal constraints as well as the significant costs associated

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with system construction and maintenance and the escalating costs of water rights. In response to a question about what state institution should be responsible for state appropriation, the majority of the sample favor assignment to an existing agency such as the Interstate Stream Commission. There is considerable opposition to the creation of any new agencies. With specific reference to the use of future state-appropriated water, there is less opposition to leasing water for relatively short periods of time, especially if leases are negotiated after the state conducts an exhaustive inventory of current and future supplies and commitments within the state. Outright sale of water was opposed by an overwhelming percentage of respondents.

The third chapter presents our analysis concerning the selection of an agency to operate a state appropriation program. Drawing upon suggestions made in responses to the survey described in Chapter Two, the research team studied operation of a program by four state agencies: the Department of Natural Resources, the Office of the State Engineer, the Interstate Stream Commission and the Water Quality Control Commission. Our findings suggest that while the Department of Natural Resources, the Office of the State Engineer, and the Water Quality Control Commission have significant roles in a state appropriation program, the Interstate Stream Commission is the best choice to operate such a program.

The heart of the study was designing a state appropriation program. Chapter Four presents three alternative forms that state appropriation might take. They range from minimal regional

planning to full participation in the interstate water market. A thorough discussion of each alternative is contained in this chapter. The costs associated with implementing a state appropriation program are presented in Chapter Five. It begins with a discussion of costs in general and then moves to a detailed description of the costs of each alternative. Chapters Six and Seven examine how actual implementation of a state appropriation program might be funded. These chapters explore existing sources of revenue and new measures that might be implemented to fund such a program.

II. Alternative Programs for State Appropriation

This report presents three alternatives for a state appropriation program (graphic representations appear in Appendix A). The first alternative calls for region-based planning only. Region-based planning was identified in the first study as the necessary initial step of any state appropriation program. Through this process, each region of the state would develop plans for acquisition and development of water resources sufficient to meet that region's public welfare demands for water.

This alternative contemplates little change in the present institutional roles of the state agencies involved in water resources management. The Interstate Stream Commission would fund proposals for planning and would develop criteria for plan approval. The Water Quality Control Commission, through the Environmental Improvement Division, would assist the regions in developing plans that do not violate standards with respect to wa-

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ter quality. The Office of the State Engineer would issue permits, as currently provided for under existing law, to users in accordance with the regional plan.

It is the opinion of the research team that this alternative alone, while very useful to New Mexico, would not ensure an adequate water supply for New Mexico in the future. As noted below in Chapter Four, existing local governmental users are limited to a 40-year planning horizon. This does not mean that plans cannot be developed for longer periods, but that a longer planning horizon cannot serve as the basic beneficial use to support a present appropriative right. Furthermore, minimal regional planning does not give a region a valid legal claim to unappropriated water in excess of the needs set out in the plan. That water could still be appropriated by others and once appropriated would no longer be available to New Mexico. Nor does Alternative A empower a state agency to buy water in the interstate market when privately held rights are offered for sale. In short, this alternative does not put the state in the position of an owner of water resources with the right to plan and control its water resources for the future. Rather, it is simply a planning device that will aid the regions to forecast and plan for their demand; it will not guarantee them a water supply.

The second alternative goes beyond identification of demand through planning to actual state appropriation of unappropriated groundwater when regional plans reflect the need for such action. This alternative does require some changes in existing agency relationships. The Interstate Stream Commission would make funds

available for regions to determine their demand for water over an 80-year time frame. After reviewing the regional plans, it would appropriate groundwater for future uses in the region. The region would develop planned projects to put the water to beneficial use. As an alternative, the state might lease water when such action is called for. Since the Interstate Stream Commission would be seeking to appropriate water in the same manner as any other individual, the State Engineer would have to act on the Commission's applications to appropriate water and ensure that it is put to beneficial use. One result is that, to avoid appearance of a conflict of interest, the State Engineer will have to limit participation in ISC decisions concerning when and where to appropriate groundwater.

There are two advantages to this alternative. Where research indicates a demand beyond 40 years, the ISC can make present appropriations to meet the planned future use. This could extend up to 80 years. The only change in existing institutional relationships that would be required relates to the vote of the State Engineer. Furthermore, since the ISC would hold these rights in a proprietary capacity, the issue of discriminatory regulation in the El Paso case would not arise. This alternative would not, however, empower the state to compete in the interstate market to purchase privately held water rights when such rights are offered for sale.

The third alternative consists of regional water planning followed by full participation by the Interstate Stream Commission in regional water markets. In addition to the benefits of-

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ferred by Alternative B, Alternative C provides for the purchase of water rights by the Commission. There would not have to be any further change in existing agency relationships beyond that required for Alternative B. Further, under this alternative, the state could compete in a regional water market if transfers threatened a region's available supply for future needs.

III. Costs of State Appropriation

Even the minimal regional planning alternative cannot be implemented without some state expenditures. Although no estimate can be made of the "total" cost to the state of adopting any one of the alternative programs (see discussion of opportunity costs in Chapter Five), the study team has computed estimates of the initial expenditures necessary to implement the planning part of each state appropriation alternative:

Alternative A	\$520,000 over two years
Alternative B	\$550,000 over two years
Alternative C	\$570,000 over two years

It is critical to understand that these numbers do not include the cost of filing of applications and putting the water to beneficial use. Until the plans are complete in the regions and the exact demands are known, the total cost of appropriating water in each region cannot be known. Furthermore, a region's demand may be high, but its ability to pay may be limited. Only on a case-by-case basis can the exact cost for each region be determined. The text of this report devotes a great deal of effort to discussion of possible sources of funds for this area.

It should be noted that Alternatives B and C will ultimately cost more than Alternative A, but this additional cost will not be immediate. Alternative A is a necessary prerequisite to either Alternative B or C, and therefore the additional expenditures of Alternative B would only become necessary once regional planning is completed. The same would be true for the additional expenditures under Alternative C. Alternative C is, by far, the most expensive, because the ISC would be drastically increasing its activities, including purchasing water rights.

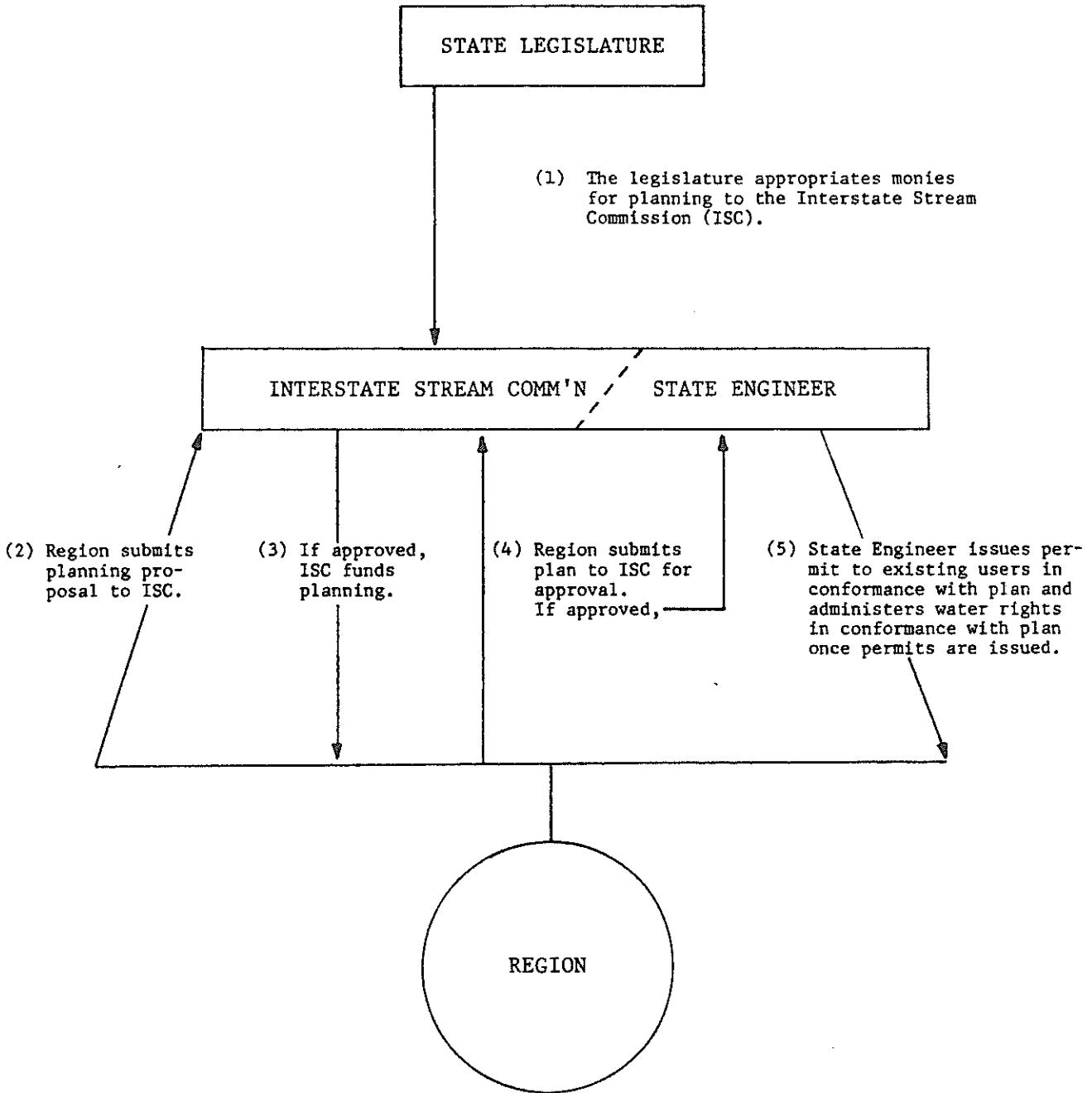
IV. Funding a State Appropriation Program

The research team has concluded that funding for the initial regional planning phase should come from the general fund. This is appropriate for two reasons. First, the amount of money is not large and, second, this concept should be exposed to a full legislative test and should compete with other interests of New Mexico to determine the importance the legislature places on New Mexico's water future. Proposed legislation is attached at Appendix B.

A P P E N D I X A

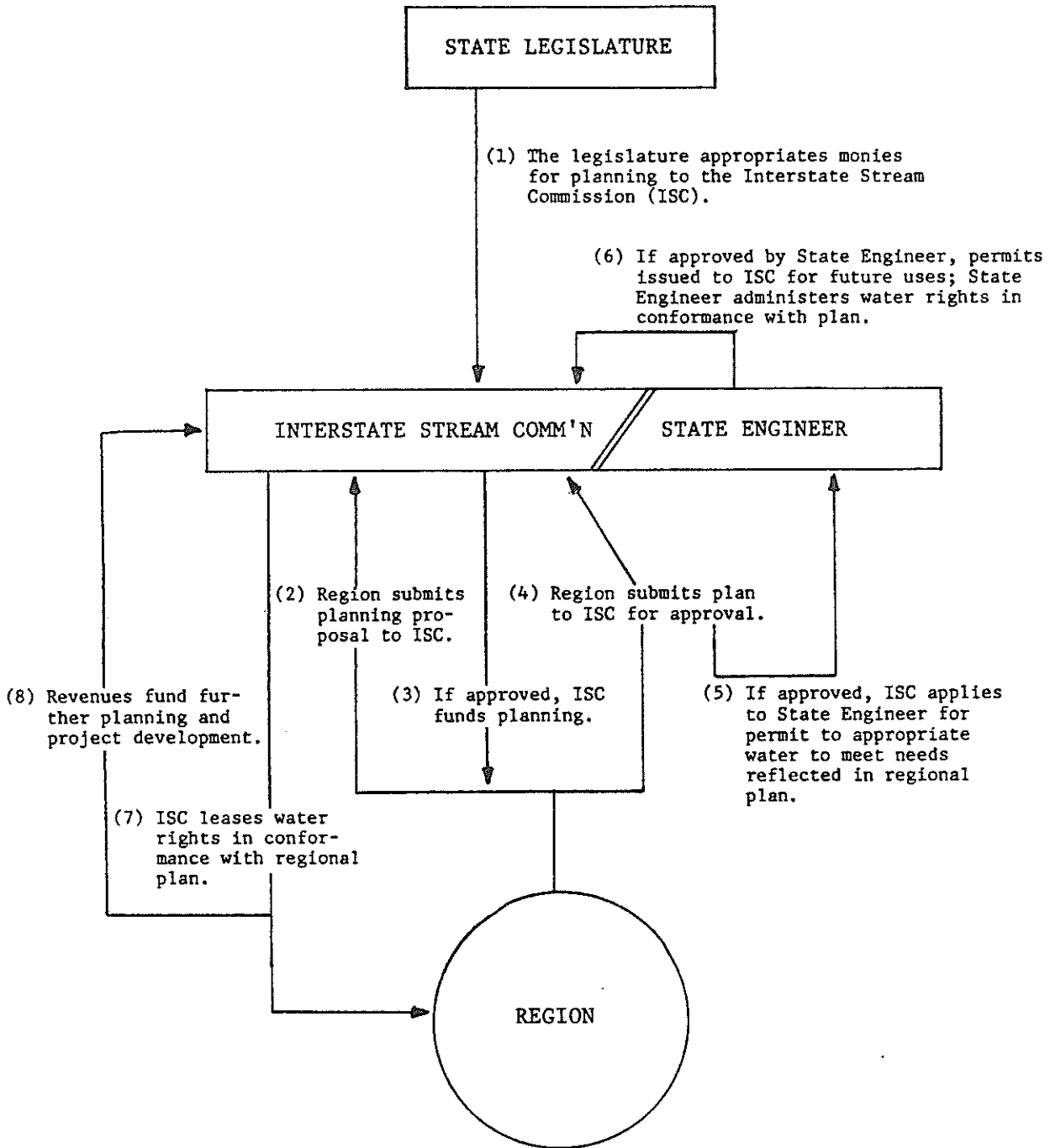
ALTERNATIVE A

Regional Water Planning



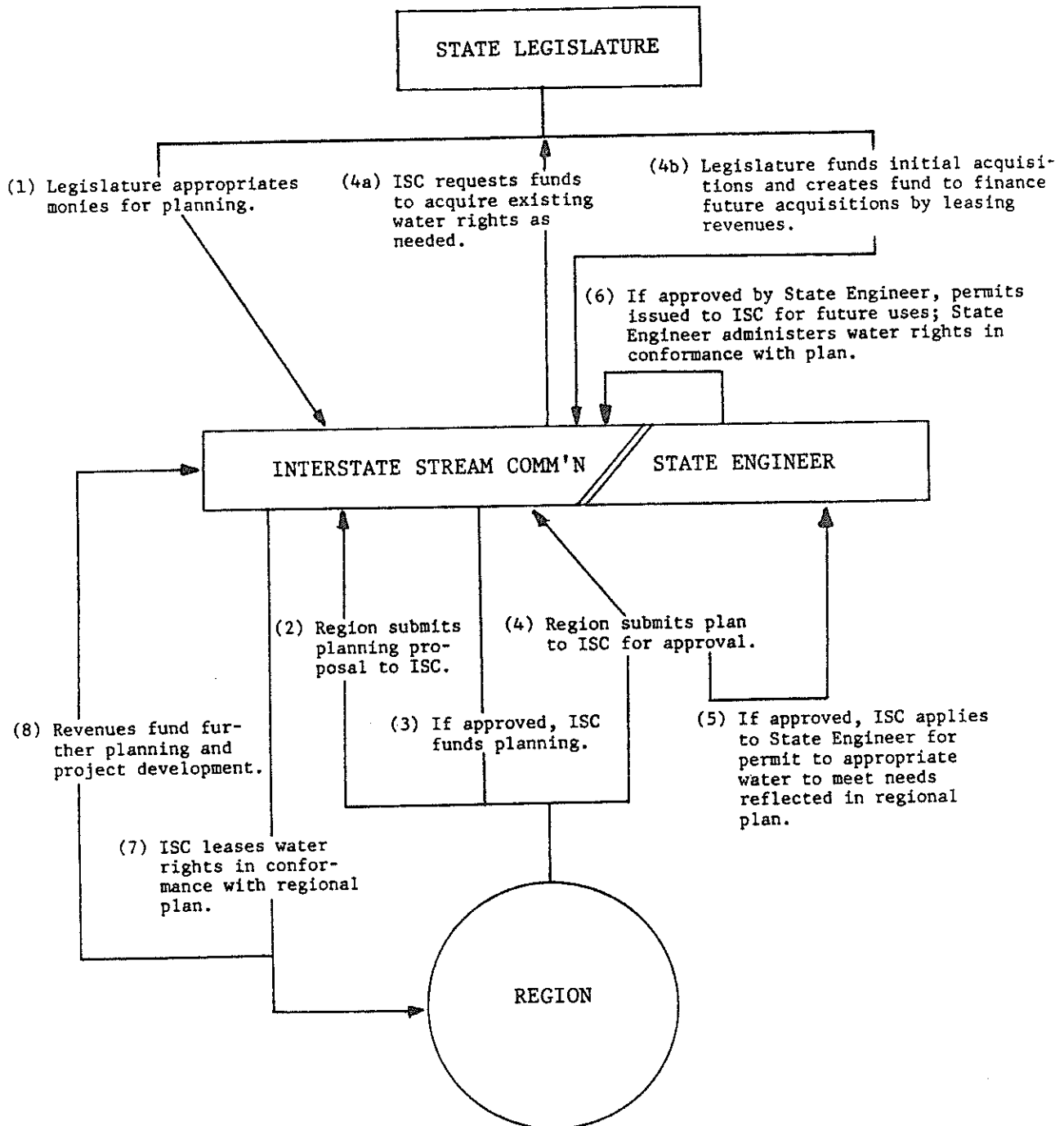
ALTERNATIVE B

State Appropriation of Unappropriated
Groundwater to Meet Future Needs



ALTERNATIVE C

State Appropriation of Unappropriated Groundwater and Acquisition of Existing Rights to Meet Future Needs



A P P E N D I X B

AN ACT

AUTHORIZING THE INTERSTATE STREAM COMMISSION TO FUND REGIONAL WATER PLANNING EFFORTS, APPROPRIATE GROUNDWATER, OR PURCHASE EXISTING WATER RIGHTS.

A. The legislature finds, as a result of the report from New Mexico State University and the University of New Mexico with respect to state appropriation of unappropriated groundwater, as follows:

1. that the future water needs of the state can best be met by allowing each region of the state to plan and control its water future;

2. that the state can assist the regions in planning future water use by implementing a state appropriation program to ensure an adequate supply for each region, as reflected in each region's water use plan; and

3. that the Interstate Stream Commission is the agency best suited to implement such a program.

B. In light of the findings set out in paragraph A, above, the Interstate Stream Commission is hereby authorized to appropriate groundwater or purchase rights on behalf of various regions of the state. It is further authorized to fund, by grants or loans, planning by the regions of the state for such purpose. Prior to approval of any proposal by a region for funds under

this section, the Commission shall develop criteria for evaluating such proposals. These criteria, at a minimum, shall include:

1. identification of the region requesting funding and why it is hydrologically and politically an appropriate applicant;
2. appropriateness of the planning process to be used;
3. reasonableness of the proposed costs and time tables for completion of the planning process;
4. appropriateness of provisions for notice, review and comment, where applicable;
5. appropriateness of proposed review of potential for conflict with respect to laws relating to impact on the quality and quantity of existing water rights;
6. consistency of the proposal with conservation of water and the public welfare; and
7. identification of local and other funding sources other than the Interstate Stream Commission for aiding in the funding of this regional planning process.

C. An appropriation of five hundred fifty thousand dollars [\$550,000] is made to the Interstate Stream Commission to be expended over the next two fiscal years to implement this legislation.

CHAPTER ONE

THE FIRST STUDY: ESTABLISHING THE NEED FOR STATE APPROPRIATION IN NEW MEXICO

I. The Research

The legislature funded a study in 1984¹ in response to recommendations that the state consider state appropriation of unappropriated groundwater. The UNM School of Law and the New Mexico Water Resources Research Institute at New Mexico State University assembled an interdisciplinary research team to conduct the study. The research team identified four basic tasks to be performed: (1) gathering information concerning the perceived concerns of several representative communities with respect to water supply and interaction with state water agencies, particularly the State Engineer; (2) identifying the amount of unappropriated groundwater available and the demands on that groundwater; (3) analyzing the legal implications of state appropriation, from both the federal and the state viewpoints; and (4) surveying the activities of other states and the possible lessons to be learned from an evaluation of those activities.

An important first step in designing the study was identifying groundwater problems in all parts of the state and inquiring as to how those problems might be solved by state appropriation. In response to this need, an advisory board was formed that

¹1984 N.M. Laws, chapter 114.

included concerned and informed New Mexicans from various parts of the state, and public meetings were held in Gallup, Las Cruces, Albuquerque, Taos, Clovis and Tucumcari.

The study team analyzed state water supply data provided by the State Engineer, calculated future in-state water demand in all of the declared underground water basins and generated "benchmarks" of water scarcity for each of these areas. It then went further and calculated possible economically feasible distances for the transportation of water within and without the state in order to provide realistic, rather than purely speculative, parameters for the regional market for water supplies in New Mexico.

The study team analyzed how the concept of state appropriation fit into the overall existing system of state water law. It reviewed state law limitations on the state's ability to participate in the water market and federal limitations on the ability of the state to participate in the water market. Finally, it analyzed the activities of other states in this area and examined the Interstate Stream Commission as a possible appropriator of groundwater.

II. The Report²

The findings of the first study and the potential benefits

²State Appropriation of Unappropriated Groundwater: A Strategy for Insuring New Mexico A Water Future. NMWRI Report No. 200, January, 1986.

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of a state appropriation program are summarized below. These determinations served as guideposts for the activities of the research team in the second study, particularly in developing alternatives for a state appropriation program.

A. Findings Concerning Water Scarcity and the Regional Water Market

In our 1986 report, we attempted to determine the need for state appropriation by comparing current in-state uses and the potential New Mexico future demands with the amount of unappropriated groundwater in the state's declared groundwater basins.

Estimates of demand under various scenarios of growth were linked to the amount available for new appropriations in declared groundwater basins or to the potential supply. Coupling potential supply and demand estimates enabled us to determine future benchmarks, dates when water scarcity might arise in these basins. These are long-range projections, conjectural in nature, and constitute no more than an "outline" of water futures that New Mexico might face.

1. Projecting Future Water Demands

The demand for any commodity is determined by a host of factors, making estimates a risky proposition. The most important factors in forecasting the demand for water are population growth and the consequent consumptive water use, growth in agriculture, mineral extraction, and industry, and the future ways in which these activities may use water. A further consideration is what the future holds as far as the prices users must pay for water. Although these factors are uncertain, three "reasonable" sce-

narios were assumed in order to construct estimates of future demands.

Based on the State Engineer's estimates for water demands in 1980,³ three sets of projections for future demand were developed. The projections differ primarily in their handling of water demands for agriculture and in their assumptions regarding conservation in the municipal sector. Since over 80 percent of New Mexico's total groundwater depletion in 1980 (1,249,430 acre-feet) was used for irrigation,⁴ assumptions made regarding water use in agriculture will have substantial effects on estimated future demands.

Projection A essentially combined present uses with expected population growth, based upon population projections made by the Bureau of Business and Economic Research, and extended through the year 2030. Agricultural uses were held at 1980 levels while growth rates analogous to the population projections were applied to other uses. It should be noted that because of the assumptions made concerning agricultural use, per capita municipal consumption and industrial use, Projection A probably overstated future demands on groundwater resources. Nevertheless, it provided a look at what could happen if no effort whatsoever were made to recognize the limited nature of the resource.

³E. Sorenson, Water Use by Categories in New Mexico Counties and River Basins, and Irrigated Acreage in 1980, Tech. Rep. 44, N.M. State Engineer (1982).

⁴Id. at 9.

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In Projections B and C, assumptions were made regarding future conservation. Projection B represented moderate conservation as a ten percent reduction in municipal and industrial use for each 50-year period. The C projection assumed a 25 percent reduction over each 50-year period. The resulting water use in 2080 for agricultural, municipal and industrial uses (M&I) is shown in Table 1 for each water basin.

The potential demand for water, however, is regional and is not limited by state lines. It was essential to try to define, at least in economic terms, the market for water supplies located in New Mexico. The key issue as to the geographic range for New Mexico's water market was determined by the ability of an area to pay to transport water. We calculated that agriculture could pay up to \$75 to \$125 an acre-foot per year to transport water and that the municipal and industrial sectors could pay as high as \$500 an acre-foot per year. Based on the ability to pay these amounts and on estimates of economically feasible transportation costs, we were able to approximate the distances water could be transported both within and without the state of New Mexico, thereby defining the relevant geographic range of regional water markets.

The findings of the scope of the water market, both in state and out of state are illustrated by the following charts, labeled Figures 1 through 6. Indeed, virtually every groundwater basin is potentially part of the regional interstate market. While agricultural demand is quite limited by transportation costs, municipal and industrial demand can move water great distances.

TABLE 1

ESTIMATED WATER USE BY GROUNDWATER BASIN: BASE YEAR,
2080 AND IMPLIED ANNUAL GROWTH RATES

BASIN		PERCENT OF COUNTY'S AG/M&I USE	TOTAL WATER USE 1980		TOTAL WATER USE 2080		IMPLIED GROWTH RATE
			AGRI.	M&I	AGRI.	M&I	
			(000 A.F.)				
Animas	Hlgo	34.3/47.2	13.2	3.0			
	A				13.2	6.3	.73
	B				13.2	5.9	.66
	C				13.2	5.2	.54
Estancia	Bern	1.4/0	.1	0.0			
	StaFe	61.5/5.5	9.9	.1			
	Torr	100.0/5.5	32.2	.0			
	A				42.1	.7	1.64
	B				42.1	.7	1.63
	C				42.1	.6	1.45
Hueco	D.Ana	3.0/3.0	1.2	.4			
	A				1.2	2.0	1.51
	B				1.2	1.9	1.46
	C				1.2	1.7	1.34
Jal	Lea	1.7/4.8	2.7	1.0			
	A				2.7	2.9	1.11
	B				2.7	2.8	1.07
	C				2.7	2.6	1.00
Lea	Lea	96.8/89.8	155.6	18.1			
	A				155.6	53.9	1.11
	B				155.6	52.3	1.07
	C				155.6	48.4	.99
Lordsbg	Hlgo	21.9/52.8	8.5	3.4			
	Grant	30.2/0	1.5	0.0			
	A				9.9	7.1	.73
	B				9.9	6.6	.66
	C				9.9	5.8	.54
Mimbres	Grant	22.1/100	1.1	12.3			
	Luna	70.5/100	52.1	2.4			
	A				53.2	28.8	.68
	B				53.2	26.1	.58
	C				53.2	22.2	.42
Nutt-Hoc	D.Ana	.4/0	.2	0.0			
	Luna	14.7/0	10.9	0.0			
	Sierra	4.7/0	.4	0.0			
	A,B,C				11.4	no growth	
Tularosa	Linc	13.9/50	.5	.6			
	Otero	50.0/50	12.1	1.6			
	A				12.6	11.3	1.67
	B				12.6	10.4	1.59
	C				12.6	9.1	1.45

TABLE 1 (Cont'd)

ESTIMATED WATER USE BY GROUNDWATER BASIN: BASE YEAR,
2080 AND IMPLIED ANNUAL GROWTH RATES

BASIN	PERCENT OF COUNTY'S AG/M&I USE	TOTAL WATER USE 1980		TOTAL WATER USE 2080		IMPLIED GROWTH RATE	
		AGRI.	M&I	AGRI.	M&I		
		('000 A.F.)					
Tucumc	Quay	0.0/63	0.0	.1	0.0	.3	1.30
	A				0.0	.2	1.18
	B				0.0	.2	1.09
	C				0.0	.2	
Upper							
Rio Grand			8.85				
	A				21.1		.87
	B				18.8		.75
	C				15.4		.55
Lower							
Rio Grand			35.7				
	A				62.4		.56
	B				54.7		.43
	C				44.2		.22
Middle							
Rio Grande			75.8				
	A				196.9		.96
	B				176.4		.85
	C				145.9		.66
San Juan			12.5				
	A				71.1		1.75
	B				64.9		1.66
	C				53.6		1.01
Pecos			3.8				
	A				6.4		.36
	B				4.1		.09
	C				--		--

FIGURE 1

Areas of Potential Water Transfer

(Cost = \$1.00 per acre-foot per mile)

Key

- 1. Municipal and Industrial Use Area
 - 2. Agricultural Use Areas
- Assuming 1 acre-foot produces \$ 75 in benefits
- Assuming 1 acre-foot produces \$100 in benefits
- Assuming 1 acre-foot produces \$125 in benefits

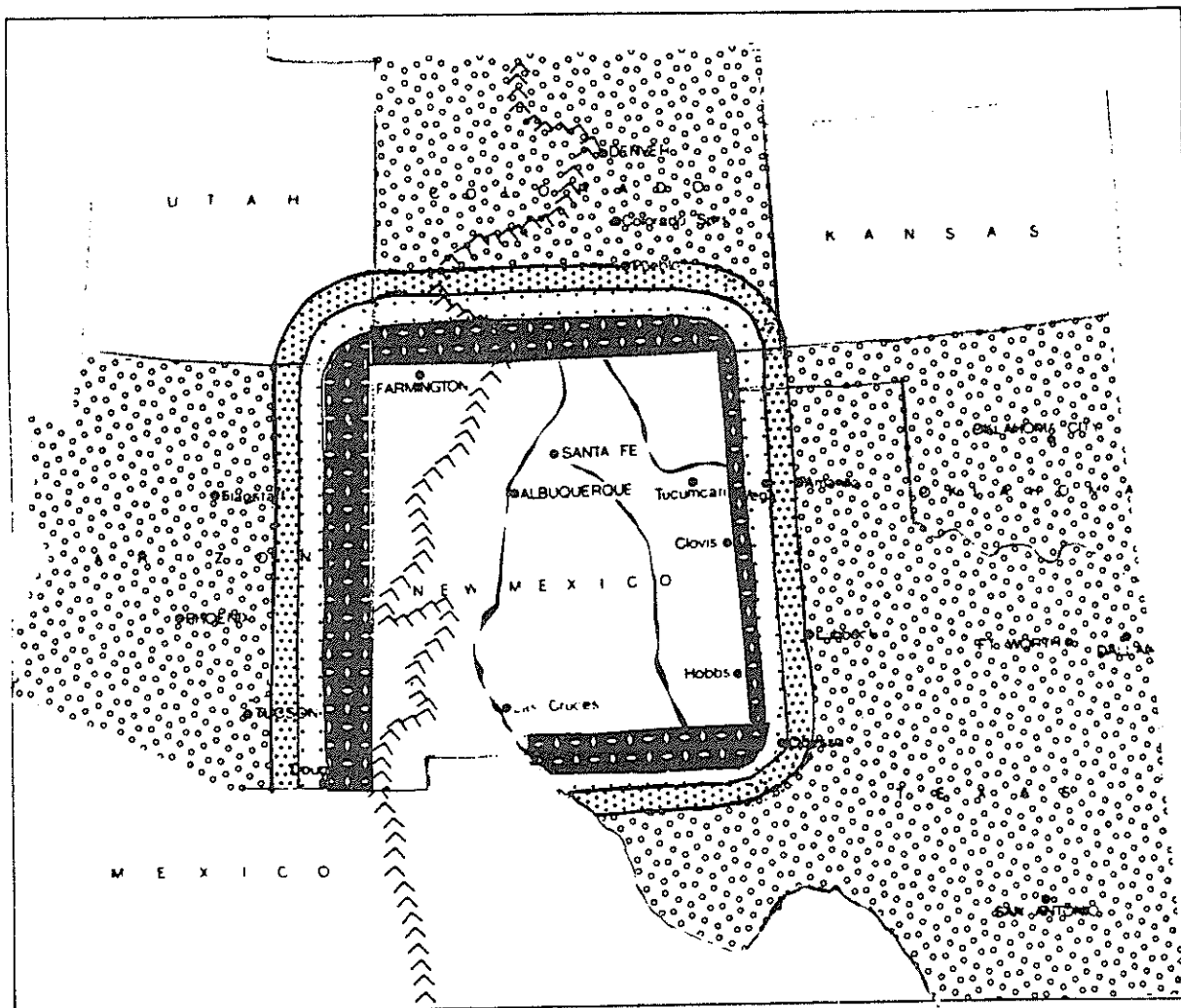


FIGURE 2

Areas of Potential Water Transfer

(Cost = \$2.00 per acre-foot per mile)

Key

- 1. Municipal and Industrial Use Areas
- 2. Agricultural Use Areas
- Assuming 1 acre-foot produces \$ 75 in benefits
- Assuming 1 acre-foot produces \$100 in benefits
- Assuming 1 acre-foot produce \$125 in benefits

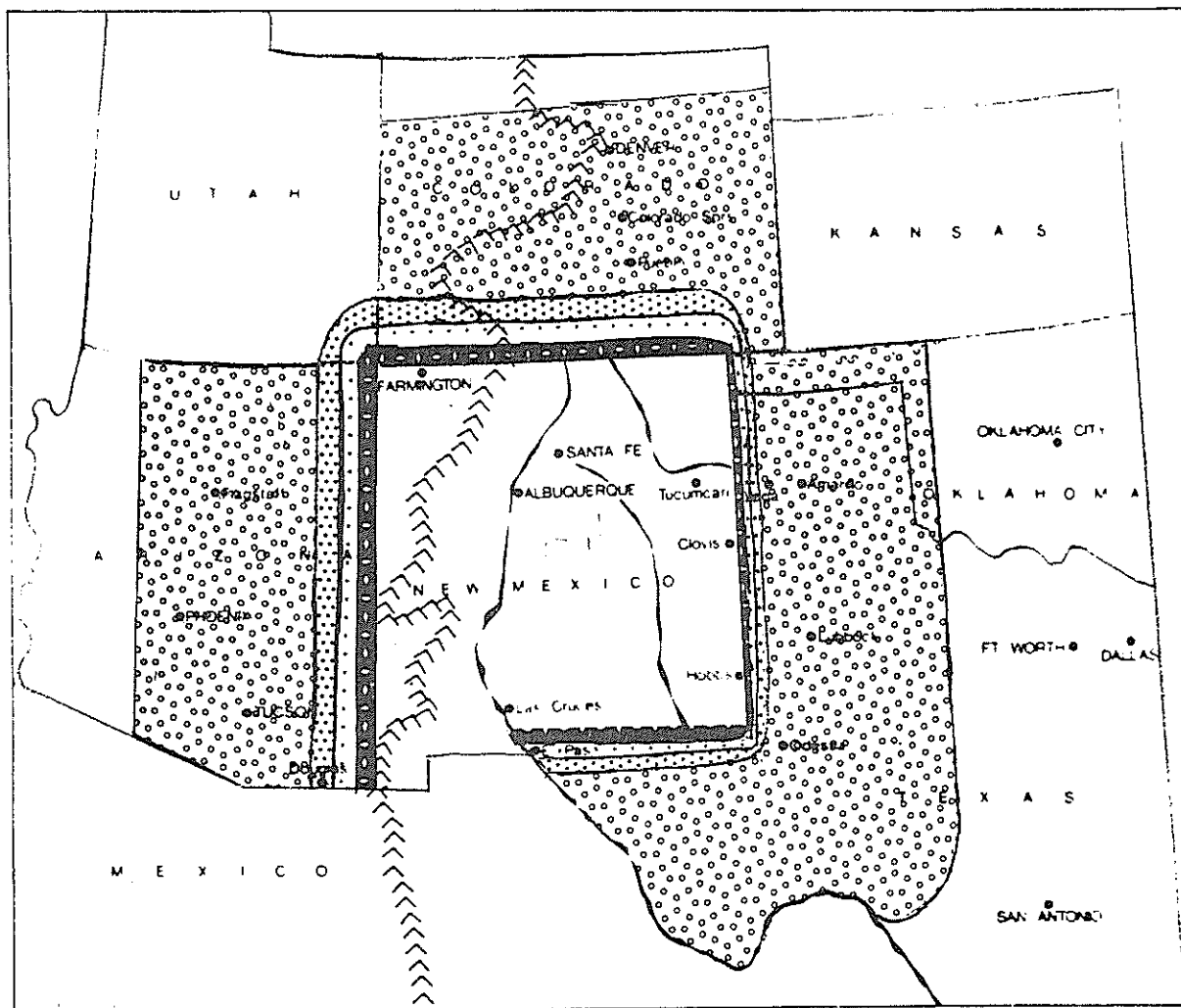







FIGURE 3

Areas of Potential Water Transfer

(Cost = \$2.50 per acre-foot per mile)

Key

-  1. Municipal and Industrial Use Area
-  2. Agricultural Use Areas
-  Assuming 1 acre-foot produces \$ 75 in benefits
-  Assuming 1 acre-foot produces \$100 in benefits
-  Assuming 1 acre-foot produces \$125 in benefits

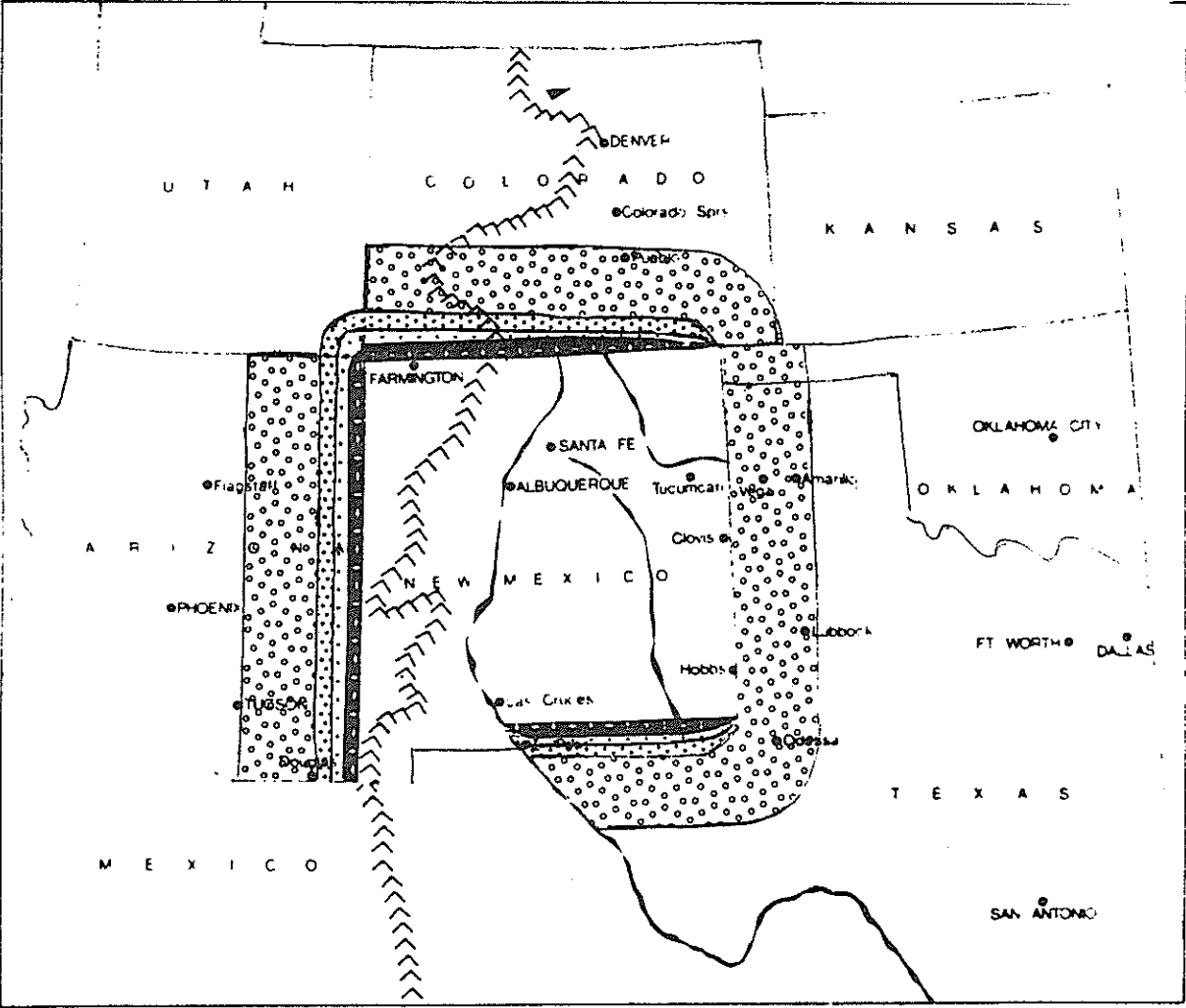
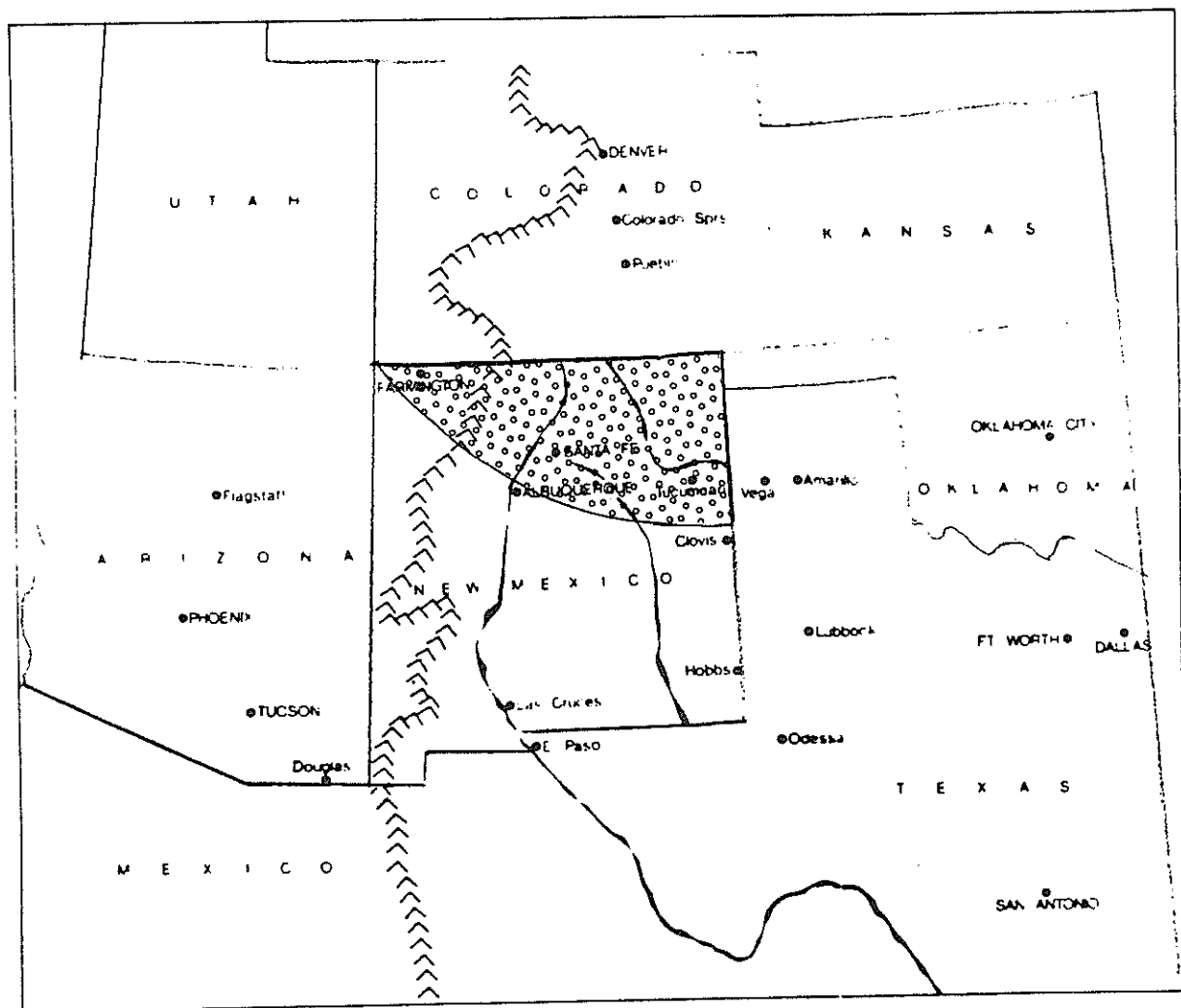


FIGURE 4

Areas of New Mexico Subject to Potential Water Transfers for M & I Use

(Cost = \$2.00 per acre-foot per mile)

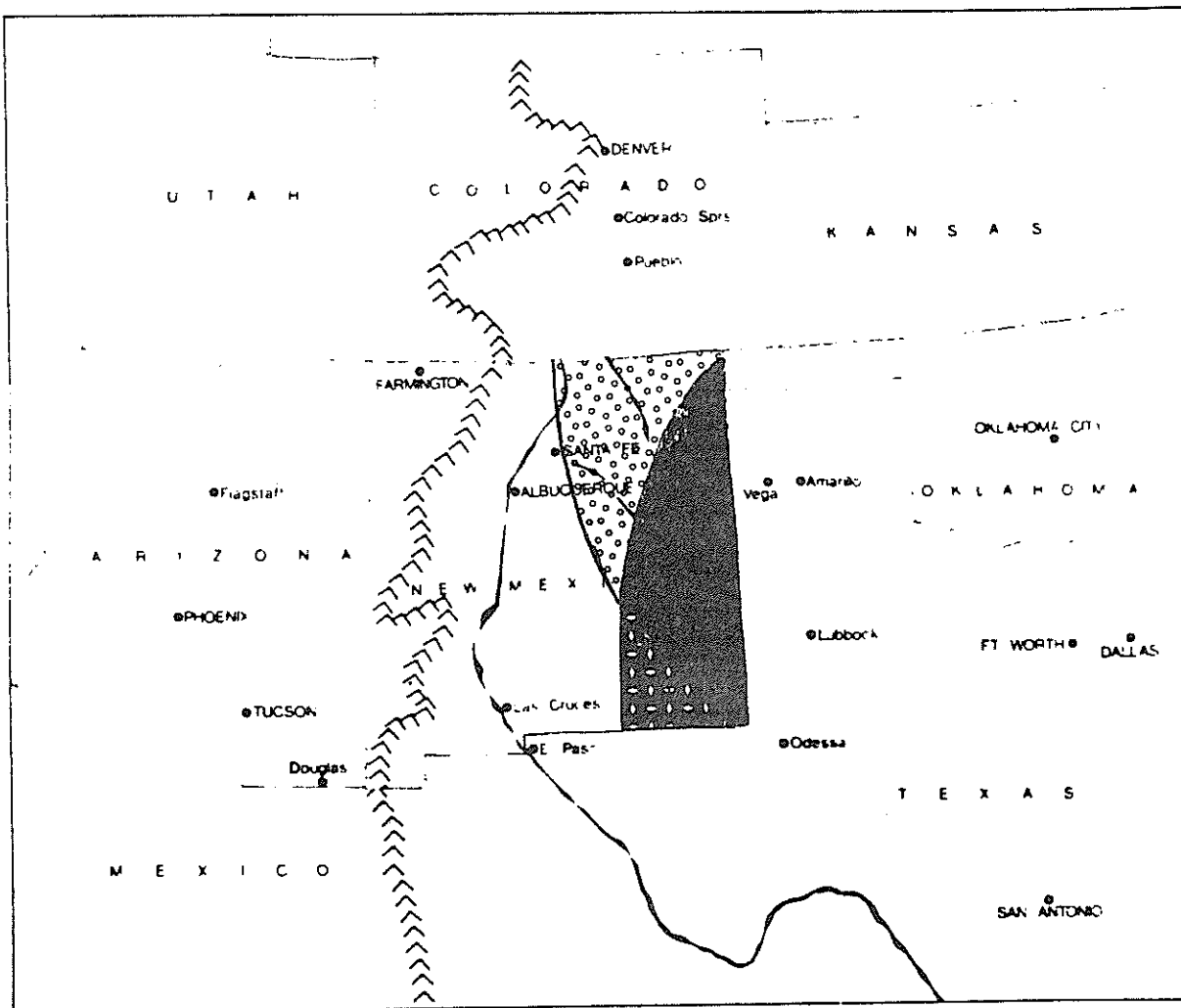


Pueblo, Colorado

FIGURE 5

Areas of New Mexico Subject to Potential Water Transfers for M & I Use

(Cost = \$2.00 per acre-foot per mile)



Amarillo, Texas

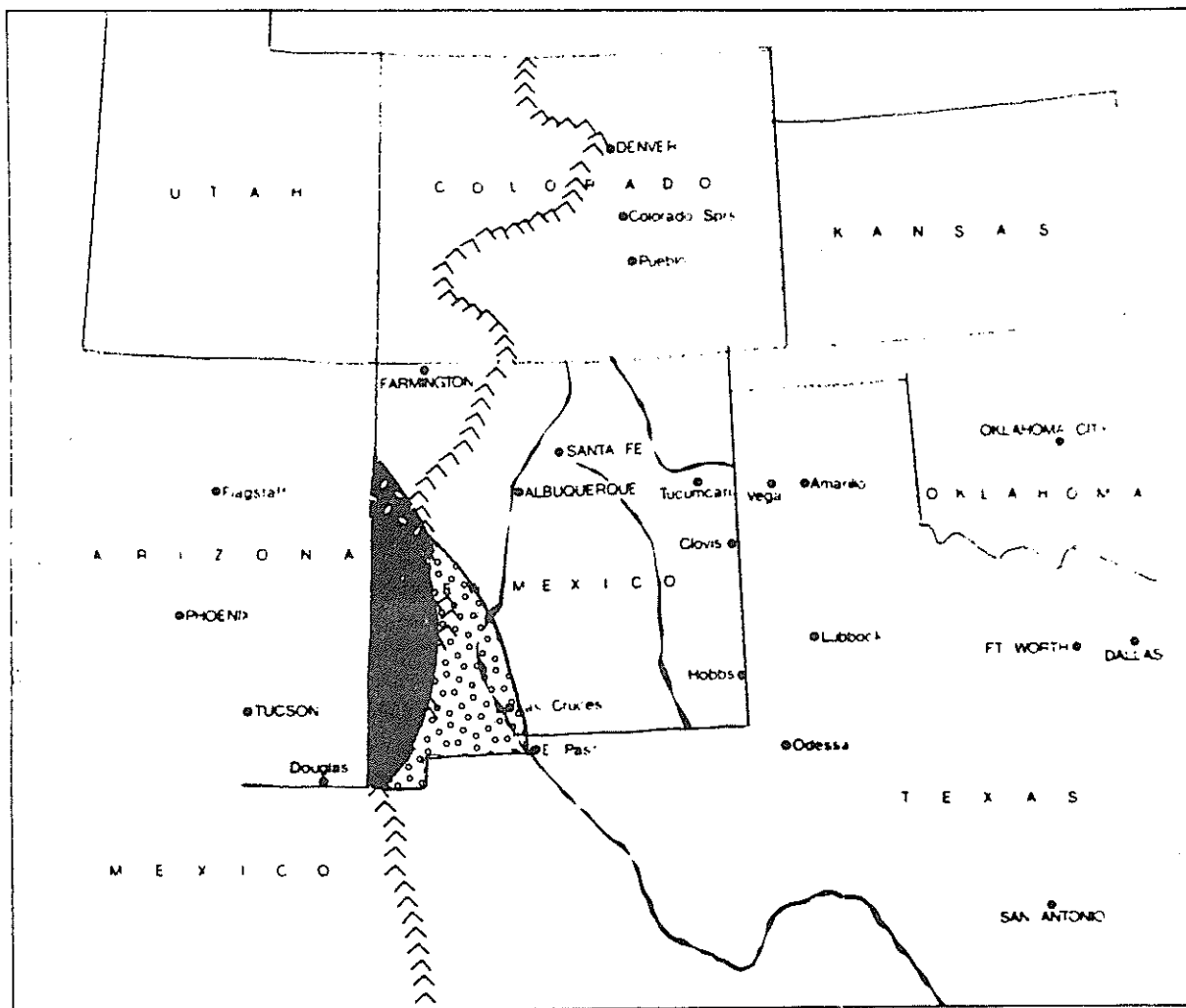




Lubbock, Texas

FIGURE 6

Areas of New Mexico Subject to Potential Water Transfers for M & I Use

(Cost = \$2.00 per acre-foot per mile)



-  Phoenix, Arizona
-  Tucson, Arizona

The final task was to put the in-state demand figures with the in-state supply figures to determine when areas of the state would be affected by water scarcity. We did this by calculating what we called benchmarks of water scarcity. These benchmarks are discussed below.

2. Benchmarks for Water Scarcity in New Mexico's Future

The research team was concerned about the nature of water scarcity in New Mexico, assuming that all unappropriated groundwater in the state remained for uses within the state. This required that all sources of water be accounted for and matched to the estimated water demands.

a. New Mexico's Unappropriated Groundwater

Unappropriated groundwater remaining in New Mexico's declared groundwater basins was estimated by the State Engineer's office for a recent report for UNM's Natural Resources Center.⁵ From these reports, along with unpublished data from the Roswell office of the State Engineer,⁶ the amount of water available for new appropriations was determined for both tributary (stream-related) and nontributary (closed) aquifers, as shown in Table 2.

⁵DuMars, Charles T., et al., The Impact of Recent Court Decisions Concerning Water and Interstate Commerce on Water Resources of the State of New Mexico, Report to Governor Toney Anaya and the Legislative Council pursuant to 1983 N.M. Laws, Chapter 98.

⁶Estimates for the High Plains counties are based on the study of the Ogallala Aquifer reported in Reports 146-150, New Mexico Water Resources Research Institute, Las Cruces, 1982.

TABLE 2

Water Available for New Appropriations in Declared
Underground Water Basins

<u>BASIN</u>	<u>UNAPPROPRIATED GROUNDWATER</u>
<u>A. Closed Aquifers</u>	
	(million acre feet)
Animas	0.00 ¹
Estancia	2.04 ²
Hueco	6.20 ³
Jal	0.04
Lea County	0.77 ¹
Lordsburg	0.60 ¹
Mimbres	3.70 ¹
Nutt-Hockett	0.13
Tucumcari	0.40 ³
Tularosa	10.70 ³
<u>B. Tributary Aquifers(1980 Surface Depletions)⁴</u>	
Upper Rio Grande (44,200 a.f.)	9.30 ⁵
Middle Rio Grande (125,630 a.f.)	2.70
Lower Rio Grande (173,920 a.f.)	5.00
Pecos River (83,300 a.f.)	8.00 ⁵
San Juan (1.6 million a.f.)	21.50 ⁵

Source: "The Impact of Recent Court Decisions Concerning Water and Interstate Commerce on Water Resources of the State of New Mexico." A Report to Governor Toney Anaya and the Legislative Council Pursuant to Laws, 1983, Chapter 98, Prepared by the Water Law Study Committee, Charles T. DuMars, Chairman, Gov. Jack Campbell, Robert B. Anderson, Les Davis, Christina G. Chaves, pp.87-90.

¹To pump depths of 230 feet. Unappropriated, but unappropriable, water in the following amounts are available between 230-1,000 feet: Animas, 0 a.f.; Lordsburg 4.9 million a.f.; Mimbres 70 million a.f..

²Non-saline water.

³To 1,000 feet.

⁴Allows 500 years for pumping effects on rivers.

⁵Amended as per letter to C. DuMars from S.E. Reynolds dated December 26, 1985.

⁶Assumes non-artesian conditions; storage coefficient of .1 used.

Other unappropriated groundwater is in undeclared basins, but no reliable data is available at this time.

b. Benchmarks for Water Scarcity in Selected Groundwater Basins

a. In New Mexico

Estimated dates for water scarcity are given in Table 3 for closed and tributary aquifers. Scenario A was our baseline estimate; conservation results in reductions in agricultural and M&I water uses of 10 percent and 25 percent over 50-year intervals in Scenarios B and C, respectively.

Two observations will assist the reader in interpreting the data in Table 3. For some closed aquifers, relatively "immediate" exhaustion of unappropriated groundwater is projected.

Two obvious conclusions can be drawn from this: Water scarcity in New Mexico will cause basic lifestyle changes in the very near future, based strictly on in-state demand for water alone. Add to this conclusion the fact that we are now part of a regional water market covering virtually every region in the state and including Albuquerque, Las Cruces/El Paso, Lubbock, Amarillo, Tucson, and even parts of southern Colorado, and the speed with which these benchmark dates are approaching is alarming and demands some action now.

B. Findings Concerning New Mexico's Options in the Interstate Water Market and Regional Water Problems

- (1) There is and will be an interstate market for water, and water supplies in New Mexico are part of that market. No trick legislation will protect these water

TABLE 3

ESTIMATED BENCHMARK DATES FOR WATER SCARCITY IN SELECTED
GROUNDWATER BASINS IN NEW MEXICO

<u>Groundwater Basin</u>	<u>Scenario</u>	<u>Benchmark</u>	<u>Benchmark Year</u>
<u>A. Closed Basins.</u>			
Animas	A	C-1	1980
	A	C-2	2030
	A	C-3	2081
	B	C-1	1980
	B	C-2	2035
	B	C-3	2092
	C	C-1	1980
	C	C-2	2047
	C	C-3	2116
Estancia	A,B and C	C-1	2028
	A,B and C	C-2	2195
	A,B and C	C-3	FUT
Hueco	A,B and C	all	FUT
Jal	A,B and C	C-1	1989
	A,B and C	C-2	2010
	A,B and C	C-3	2034
Lea County	A,B and C	C-1	1985
	A,B and C	C-2	2151
	A,B and C	C-3	FUT
Lordsburg	A	C-1	2019
	A	C-2	2046
	A	C-3	2079
	B	C-1	2020
	B	C-2	2051
	B	C-3	2087
	C	C-1	2022
	C	C-2	2061
	C	C-3	2106

TABLE 3 (Cont'd)

ESTIMATED BENCHMARK DATES FOR WATER SCARCITY IN SELECTED
GROUNDWATER BASINS IN NEW MEXICO

<u>Groundwater Basin</u>	<u>Scenario</u>	<u>Benchmark</u>	<u>Benchmark Year</u>
<u>A. Closed Basins (continued)</u>			
Mimbres	A	C-1	2028
	A	C-2	2062
	A	C-3	2102
	B	C-1	2030
	B	C-2	2064
	B	C-3	2104
	C	C-1	2032
	C	C-2	2093
	C	C-3	2162
Nutt-Hockett	A,B and C	C-1	2031
	A,B and C	n.a.*	
Tularosa	A,B and C	all	FUT
Tucumcari	A,B and C	all	FUT
<u>Tributary Aquifers</u>			
Upper Rio Grande	A	T-1	2027
	A	T-2	2073
	A	T-3	2123
	B	T-1	2034
	B	T-2	2088
	B	T-3	2147
	C	T-1	2054
	C	T-2	2128
	C	T-3	FUT

ESTIMATED BENCHMARK DATES FOR WATER SCARCITY IN SELECTED
GROUNDWATER BASINS IN NEW MEXICO

<u>Groundwater Basin</u>	<u>Scenario</u>	<u>Benchmark</u>	<u>Benchmark Year</u>
<u>A. Tributary Aquifers (continued)</u>			
Middle Rio Grande	A	T-1	1996
	A	T-2	2016
	A	T-3	2043
	B	T-1	1998
	B	T-2	2021
	B	T-3	2051
	C	T-1	2003
	C	T-2	2033
	C	T-3	2071
Lower Rio Grande	A	T-1	2051
	A	T-2	2122
	A	T-3	FUT
	B	T-1	2072
	B	T-2	2165
	B	T-3	FUT
	C	T-1	2160
	C	T-2	FUT
	C	T-3	FUT
San Juan	A	T-1	2132
	A	T-2	FUT
	A	T-3	FUT
	B	T-1	2139
	B	T-2	FUT
	B	T-3	FUT
	C	T-1	FUT
	C	T-2	FUT
	C	T-3	FUT
Pecos	A, B and C	all	FUT

*All pumping from Nutt-Hockett is for agricultural uses; thus, withdrawals are assumed constant over time.

supplies from that market, and the Supreme Court is not likely to reverse itself on this issue.

- (2) It is legally possible, however, for a state to enter the market as a participant by appropriating and developing its own water supplies. By developing its own water supplies, a state may guarantee future water supplies for various regions of the state as a part of regional planning and may market water to other states to raise revenue for in-state water development projects.
- (3) While New Mexico has developed a surface water plan through the State Engineer's office by construction of reservoirs, most of which have been completed, no provision has been made for guaranteeing regions of the state sufficient future water supplies from groundwater sources, for state support of the development of regional water supply systems, or for possible interstate exchanges.
- (4) In most rural areas of the state, people are unsure of their water future, unsure of the mechanisms to acquire water rights, unsure of the period of time their water supplies will last and unsure of the leadership provided by the legislature in this area. Individuals are beginning to speculate in water rights futures.
- (5) In the Dona Ana County area, the El Paso lawsuit and basic conflicts between agricultural and municipal uses have caused tremendous uncertainty about water avail-

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ability. Many more applications have been filed for water than actually exists in the ground.

- (6) In Gallup, the physical shortage of water is of great concern. While studies have been done with respect to the possibility of bringing water from the San Juan River, the cost of the project is high. Also, hydrologic studies are being conducted throughout the area.
- (7) Throughout the eastern part of the state, there is a great deal of concern over the declining groundwater table and the possibility of demand from Texas municipalities. This area of the state is studying its problem and is anxious to take action toward a solution, but the necessary capital is not available. There is much interest in water conservation and a desire to see that this area has a guaranteed quantity of water available to it in the future.
- (8) In the Taos area, there is a great deal of concern about the transfer of water rights from traditional acequia uses into other uses. There is a case before the Court of Appeals in which a district judge has ruled that a private person's water rights could not be sold to another because the sale would, in effect, be detrimental to the culture of the area and therefore not in the public interest.
- (9) In the Albuquerque area, the city of Albuquerque, with its San Juan/Chama water and its water rights purchase program is proceeding well with its water development

plans, but areas outside the city and the smaller municipalities, in the long run, are going to have a difficult time competing with the City of Albuquerque for the surface rights needed to offset their groundwater pumping. There appears to be great concern about the inability to transfer water rights outside the conservancy district to facilitate new uses. In the area east of the Sandias, there is interest in establishing a long-term potable water supply without destroying water quality.

- (10) In response to the El Paso case, our system of water law appropriation and transfer has been fundamentally changed. An amendment to state law in response to the El Paso litigation has introduced into the initiation of every water right the criteria of the public welfare and water conservation. This may mean that with respect to every water right that has been purchased in the water market, the question whether that transfer is consistent with the "public welfare" and whether it should be allowed will have to be litigated and ultimately decided by the courts.
- (11) The policy of extracting tributary groundwater to provide short-term supplies for the state is not well understood. While many of our municipalities and industries may be able to survive for a period of years, maybe even hundreds of years, the only reliable supplies in the future are our surface supplies. Because

of present pumping of tributary aquifers, surface water in these areas in the future will be taken exclusively through wells. This concept and its ultimate impact on the environment of the river is little understood by hydrologists and lay people alike.

- (12) In most areas of the state, if new industry were to come in and ask the question, "Is there a reliable guaranteed supply of water and is there one agency I can go to get it without being involved in lawsuits?" the answer would have to be no. Possible exceptions are Ute Reservoir, where the state has developed water for commercial and other purposes, and the City of Albuquerque.

C. Benefits from State Appropriation and Legislative Recommendations

1. Long-Term Benefits from State Appropriation

- a. State Appropriation of groundwater or purchase of groundwater rights could guarantee future long-term supplies.
- b. State Appropriation or purchase of groundwater may allow short-term marketing of water interstate to support New Mexico water projects.
- c. State Appropriation or purchase of groundwater could permit the state to develop and coordinate water transfer projects.
- d. State Appropriation or purchase of groundwater could permit the state to develop and

coordinate water importation projects where such plans are economically and hydrologically feasible.

2. Immediate Benefits from State Appropriation

- a. State Appropriation or purchase of groundwater could aid in the creation of regional water development projects.
- b. State Appropriation or purchase of groundwater could provide certainty of water supply for new industry and thereby promote future economic development.
- c. State Appropriation or purchase of groundwater rights could assist the state in the promotion of water conservation.
- d. State Appropriation or purchase of groundwater rights could, through the dissemination of good price information, aid the movement of water to higher economically valued uses.
- e. State Appropriation or purchase of groundwater rights could help coordinate regional and local water planning for the future.
- f. State Appropriation or purchase of groundwater could aid local and private interests by coordinating water information-sharing throughout the state.
- g. State Appropriation or purchase of groundwater could preserve key sectors of the

economy and areas of the state that make a singular contribution to New Mexico society and culture.

- h. State Appropriation or purchase of ground-water could aid the goal of protecting the water quality in the state.
- i. State Appropriation or purchase of ground-water resources could aid in the protection of our surface water resources.

III. Responding to the Report: The Second State Appropriation Study

From this summary review of the first report, it is clear that a state appropriation program might produce substantial benefits for the people of the state. In order to proceed in the most efficient manner to institute a program, however, the legislature⁷ requested the research team to study four specific issues:

- (1) How much would it cost to implement state appropriation in various regions of the state?
- (2) What is the best source of revenue for financing state-regional partnerships for appropriation of water?
- (3) What is the best administrative agency in New Mexico for implementing state appropriation?

⁷1986 N.M. Laws, chapter 79.

- (4) What legislative changes, if any, need to be made to ensure that the program is politically and geographically representative and responsive to the needs of each of the distinct regions of the state?

The body of this second report attempts to answer these important questions.

CHAPTER TWO

PUBLIC INVOLVEMENT IN SHAPING THE STATE APPROPRIATION STUDY AND RECOMMENDATIONS

I. Introduction

Public sentiment has played an important role in both the first and second state appropriation studies. During the first study, members of the research team and advisory board held public meetings throughout the state to elicit community opinion about water problems generally and the concept of state appropriation. A summary of the concerns expressed in the public meetings is informative.

On the question of state appropriation, the reaction was broadly and even strongly positive. This broad support was not unqualified, however. The two most frequently mentioned reservations were: (1) that it would create additional bureaucracy and (2) that its implementation should allow a strong measure of regional or local control, presumably over the allocation of whatever water was involved and any revenues raised. Because of the significant differences from one region or locality to the next, there was large concern that each area have a strong share of power in making decisions relating to that area.

There were a number of other opinions expressed with varying degrees of frequency, but all germane to the manner in which the concept of state appropriation might be implemented. Since all are generally self-explanatory, they are simply listed here without comment and in no particular order:

- (1) Any implementation of the concept should not adversely affect existing, privately held water rights.
- (2) Any plan to implement the concept should not adversely affect existing or prospective Indian water rights.
- (3) There would be a need for a state water plan at least with regard to whatever water was

- appropriated by the State and possibly for more general reasons.
- (4) Water quality considerations should be part of any implementation program.
 - (5) Water conservation considerations should be part of any implementation program.
 - (6) There is need for a broad program of public education generally about water and particularly about any state appropriation policy.
 - (7) Any new water policy developed in the state should encompass both ground and surface water rather than being limited to the former.

II. Public Involvement in the Second State Appropriation Study

A survey was conducted to verify the conclusions regarding local preferences relating to state appropriation in the previous study. Four areas were examined:

- (1) willingness to participate;
- (2) the perceived need for state appropriation;
- (3) institutional characteristics of a statewide program;
- (4) attitudes toward the possible sale or lease of appropriated water to out-of-state parties.

The primary objectives of the survey were to solicit reactions to the concept of state appropriation and to identify regions and groups of individuals with expressed interest in developing such a program.

A. Questionnaire Design and Administration

A survey questionnaire was developed by the study team in consultation with members of the advisory board. Each questionnaire package included background information related to the

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state appropriation project. The questionnaire contained ten questions and ample space for comments after each question.¹

B. Population

The sample included city, county, and irrigation district officials throughout the state. Questionnaires were sent to all mayors, chairs of county commissions, county extension agents, and county managers. In addition, questionnaires were sent to 29 irrigation districts, 39 public works directors of major cities, and the Eastern Plains Council of Governments. Each of the state legislators was sent questionnaires for informational purposes only; a cover letter explained that they were not expected to respond. A total of 263 questionnaires were sent, not counting the legislators.

C. Sample

Eighty-six completed, usable questionnaires were returned for an overall response rate of 33 percent. The relatively low response rate may be attributed to a number of factors including questionnaire administration and population characteristics. More specifically, responses may have been inhibited by administration during the summer months and the relatively short response time. Second, some counties and cities may have submitted a single response even though they generally received two or three questionnaires. Third, groundwater appropriation may be a

¹Questionnaires were sent in late June 1986 and respondents were asked to respond by July 15, 1986. Provision was made for return postage, and questionnaires were accepted until August 1, 1986.

little-understood topic in some areas of the state. Fourth, elected public officials and public administrators may be reluctant to express their views in a survey. Fifth, the concept of state appropriation may not have been adequately explained.

1. Respondent Status

Twenty-one of the state's 33 counties (64.1%) and 35 of the 102 cities (35.1%) responded to the survey. The status and response rates of the respondents can be summarized as follows:

<u>Status of Respondent</u>	<u>N</u>	<u>Percent of Sample</u>	<u>Response Rate</u>
1. Mayors	32	34.8	31.4
2. County Comm. Chairs	6	6.5	18.2
3. Legislators	8	8.7	7.2
4. Public Works Dir.	4	4.3	10.3
5. County Managers	15	16.3	57.7
6. Irr. Districts	13	14.1	45.5
7. County Ext. Agents	12	13.0	44.8
8. Other*	2	2.2	100.0
TOTAL	92	99.9	33.0

*"Other" respondents were representatives of the Eastern Plains Council of Governments.

In general, elected officials including mayors, county commissioners, and legislators exhibit the lowest response rates in contrast to non-elected officials including county managers, county extension agents, and irrigation district managers.

2. Respondent Region of Residence

The state of New Mexico contains eight major hydrologic regions. The number of questionnaires sent to each region is as follows: Northwest = 25, Northcentral = 25, Northeast = 48, Central = 34, Southwest = 21, Southcentral = 32, Southeast Central =

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21, and Southeast = 21. The residence of respondents and response rate by region can be summarized as follows:

<u>Region of Residence</u>	<u>N</u>	<u>Percent of Sample</u>	<u>Response Rate</u>
1. Northwest (NW)	17	18.5	68.0
2. Northcentral (NC)	7	7.6	28.0
3. Northeast (NE)	21	22.8	43.8
4. Central (C)	10	10.9	29.4
5. Southwest (SW)	7	7.6	33.4
6. Southcentral (SC)	13	14.1	40.6
7. SE Central (SEC)	10	10.9	47.6
8. Southeast (SE)	7	7.6	33.4
TOTAL	92	100.1	33.0

The Northeast region exhibits the highest response rate followed by the Southeast Central, Northeast, and Southcentral regions. The Central and Northcentral regions exhibit the lowest response rates.

Relative and cumulative percentages are presented for each question in the findings section and open-ended comments are summarized in the findings section.

Analyses of responses by two demographic variables, respondent status and region, are summarized in the findings section and in Appendix A. Respondents are classified into four status categories: local officials (which includes mayors and public works directors), county officials (which includes county commissioners, extension agents, COG representatives, and county managers), legislators, and irrigation district representatives.

III. Findings

A. Willingness to Participate in State Appropriation

Three questions were designed to estimate local willingness to participate in a statewide groundwater appropriation program.

1. Willingness to Consider Participating

Respondents were asked: "If the state legislature initiates a program of state appropriation, do you think your jurisdiction would be willing to consider participating?"

<u>Response</u>	<u>Frequency</u>	<u>Percent of Sample</u>	<u>Response Rate</u>
1. Yes	75	82.4	82.2
2. No	1	1.1	83.3
3. Undecided/not sure)	15	16.6	100.0
TOTAL	92	100.1	33.0

Over 80% of the respondents are willing to consider participating, but a few commented that consideration was not tantamount to participation. Others noted that participation would depend on a number of factors including scope of program, cost, ability to secure local approval, etc. Others conditioned participation on assurance that such a program would not have a negative effect on present rights. Overall, the overwhelming majority appear willing to consider participating in a state appropriation program.

Analysis of responses by status or region does not indicate significant differences between classes of respondents (see Appendix A).

2. Willingness to Commit Local Resources

"If your jurisdiction would be willing to consider

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participating, do you think it would be willing to commit local resources such as technical and planning assistance to support of the program."

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Yes	61	67.0	67.8
2. No	1	1.1	68.9
3. Undecided/not sure)	29	31.9	100.0
VALID TOTAL	91	100.1	33.0

In open-ended comments, most respondents thought that local assistance could be provided, but the proportion of respondents undecided or not sure increases significantly (from 16.5% in the preceding question to 31.9% for this question). A few respondents were unsure of the willingness of their jurisdiction and some noted that technical and planning assistance was either not available or only available on a limited basis.

Analyses suggest that a higher proportion of local officials were undecided or unsure about their jurisdiction's willingness to commit resources (41.7% versus 29.4% of the county officials and 23.1% of the irrigation district officials). Second, a majority of the respondents from the Northeast (57.1%) and three of the seven Southwest respondents (42.9%) were undecided/unsure. In contrast, only about 25% of the respondents in the remaining regions were undecided/unsure.

3. Willingness to Expand Existing Water Conservation Programs

"If your jurisdiction would be willing to consider

participating, do you think it would be willing to expand existing water conservation programs?"

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Yes	72	78.3	79.1
2. No	2	2.2	81.3
3. Undecided/not sure)	18	19.6	100.0
VALID TOTAL	92	100.0	

The respondents support expanding water conservation efforts as well as linking conservation to state appropriation. Analyses suggest that local officials are somewhat more undecided than their county or irrigation district counterparts. Second, three of the seven Northcentral region respondents (42.9%) were undecided in contrast to the remaining regions where only about 20% were undecided/unsure.

B. Need for State Appropriation

Respondents were asked three related questions to estimate the perceived need for state appropriation. The first question estimates need directly by asking when, if ever, a state appropriation program is needed. The other two questions indirectly estimate need by asking respondents to estimate the adequacy of local water supplies and local funds for developing additional supplies.

1. Urgency for State Appropriation

"How would you characterize the need for state appropriation in your jurisdiction? Is state appropriation needed ... immediately, in the near future, in the distant future, if at all, or (are you) undecided/not sure?"

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<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Immediately	17	19.1	19.3
2. In the Near Future	31	34.8	54.5
3. Dist. Future if at all	22	24.7	78.4
4. Undecided/not sure	19	21.3	100.0
VALID TOTAL	89	100.0	

Respondents who think that state appropriation should occur as soon as possible (immediately or in the near future) noted that quick action is very important. As one respondent observed, "We are decades behind understanding (publicly) the true value of water and, worse, what to do to protect and provide for the future."

Respondents who were undecided about the need for appropriation cited a number of reasons. One respondent noted, "Jurisdictions in this area would probably tend to favor the option of local control as an alternative." Adequacy of local supplies appears to be the primary reason given by respondents who thought that appropriation was needed in the distant future, if at all. However, even among these respondents, there is recognition that appropriation may be needed if "water demands become burdensome to water right holders."

Analyses suggest that a majority of local officials (55.9%) and irrigation district officials (53.8%) think appropriation is needed as soon as possible. There is considerable regional variation in responses to this question (see Appendix A). An overwhelming majority of respondents in the Northwest (81.3%),

Northcentral (85.7%), and Central (70.0%) think appropriation is needed as soon as possible. In contrast, a minority of respondents share this view in the following regions: Southwest (28.6%), Northeast (30.0%), Southeast (42.9%), and Southcentral (46.2%).

2. Adequacy of Local Supplies

"Estimate the number of years in the future that secure water supplies are available to your jurisdiction."

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. 0-20 yrs	37	44.0	43.4
2. 21-40 yrs	20	23.8	67.5
3. 41-60 yrs	11	13.1	80.8
4. 61-80 yrs	3	3.6	83.2
5. 81-100 yrs	3	3.6	88.0
6. Over 100 yrs	10	11.9	100.0
VALID TOTAL	84	100.0	

Respondents noted that estimates were hard to make due to various types of uncertainty. Some noted that hydrologic estimates are not trustworthy in certain situations whereas others cited legal challenges that may dramatically change the lifespan of available supplies. Finally, a number of respondents observed that it is extremely hard to predict other factors which affect supplies.

Analyses suggest that counties, which generally do not provide water, report adequate supplies in most cases (only 24.1% have supplies less than 20 years). In contrast, a majority of municipalities (52.9%) and irrigation districts (61.5%) estimate that secure supplies are available from 0 to 20 years. Two regions report short-term supplies: the Northwest and Southeast

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Central (where 60% and 55.6% of the respondents respectively estimate secure supplies of 0-20 years). In all regions, a minority (26% to 36%) of respondents estimate that secure supplies are available in excess of forty years.

3. Adequacy of Local Funds

"Do you think your jurisdiction has the necessary funds for developing additional water supplies either now or in the foreseeable future?"

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Yes (adequate)	13	14.1	13.3
2. No (inadequate)	69	75.0	88.9
3. N/A (more H ₂ O not needed)	10	10.9	100.0
VALID TOTAL	92	100.0	

Whereas a few respondents thought that local supplies were adequate or that local revenues were sufficient to develop new supplies, the overwhelming majority of respondents (75.0%) thought that local funds were inadequate. A number noted that the costs of acquiring water rights and constructing distribution systems may require a combination of federal, state, and local funds. One respondent observed: "Since the demise of revenue sharing, and the enacted of Gramm-Rudman [sic], [our] county is finding it very difficult to support existing programs, much less institute new ones."

Analyses of responses suggest no significant differences between status groups. In most regions, about 80% of the respondents think that local funds are inadequate. Two exceptions are

the Central (50.0% inadequate) and the Southeast (42.9% inadequate) regions.

C. Institutional Preferences for State Appropriation

The respondents were told: "If the state legislature initiates such a program (state appropriation), at least three institutional options are available for implementing the program at the state level: (a) create a new agency; (b) assign responsibilities to the Interstate Stream Commission; (c) assign responsibilities to existing state water agencies. Which of the following options are acceptable to you? (You may check more than one.)"

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Create New Agency	15	15.6	15.6
2. Interstate Stream Com.	25	26.0	41.6
3. Existing Agencies	50	52.1	93.7
4. Other	6	6.3	100.0
VALID TOTAL	92	100.0	

The majority thought that existing agencies, including the Interstate Stream Commission, should assume responsibility for state appropriation. A number of respondents specifically opposed the creation of a new agency due to unnecessary costs, "more red tape," and related reasons. A few thought a new agency was needed due to the importance of the task, but most argued that existing agencies possessed the wherewithal to administer such a program. One respondent noted, "The Interstate Stream Commission has a competent staff, leadership, and personnel to handle such a program." Others specifically favored the ISC

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since it "seems to be a regional body." But the same respondent noted further, "A local-state body may be more appropriate." Many of these respondents make specific reference to the Office of the State Engineer. Another typical view is, "I do not have a problem as to who does it, as long as it is done right." Some respondents favored the Water Quality Control Commission, highlighting the public's perception that water quality concerns be integrated into any new water allocation system.

Analyses do not suggest any significant differences according to respondent status or region.

D. Sale or Lease of Appropriated Water Out of State

The respondents were asked two questions to estimate the level of support for out-of-state sale or lease of appropriated water. First, respondents were asked, "If the state legislature initiates a state appropriation program, revenues for in-state water projects could be generated by selling and/or leasing water to out-of-state parties. Generally speaking, how strongly do you favor or oppose out-of-state sale of state water as a means for financing in-state water projects?"

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Strongly favor	3	3.4	3.4
2. Favor	19	21.6	25.2
3. Oppose	28	31.8	56.2
4. Strongly oppose	38	43.2	99.9
VALID TOTAL	88	99.9	

The respondents were then asked, "Generally speaking how strongly do you favor or oppose out-of-state leasing of state water as a means for financing in-state water projects?":

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Strongly favor	7	8.2	9.5
2. Favor	26	30.6	38.1
3. Oppose	23	27.1	65.5
4. Strongly oppose	29	34.1	100.0
VALID TOTAL	85	100.0	

Overall, there was considerable opposition either to the sale or the leasing of water out of state even if the revenues generated were used to finance water development in the state. There is less opposition to leasing, as the proportion who oppose leasing is around 60 percent in comparison to the 75 percent who oppose sale of water to out-of-state parties.

In many ways, the responses to these questions reveal the extent to which public officials are not aware of one of the key findings of the first state appropriation study: even with full market participation by the state, water cannot be embargoed by the state. It should be noted that respondents were not asked if they preferred sales/leasing to appropriation by all users in and out-of-state for free. This is clear from open-ended comments describing the concerns of those who opposed sales or leasing. One respondent reflected a common view:

As it is now we really don't even understand what our water situation is now or for the future. Furthermore, the parties involved within New Mexico cannot agree on what to do. We must continue to oppose (sales) until we know for certain that exporting water will not affect New Mexicans, regardless of size.

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Many respondents thought that sales would be appropriate "only if it is clear that there is no shortage and will never be a shortage of water for state residents." Others struck a more accurate stance by noting that, in certain situations, leasing of water would be acceptable. Some recommended short-term leases while many wanted to make sure only surplus water was leased or sold.

Analyses of responses to these questions suggested that the sale or lease of water out of state was strongly opposed by county and local officials. In contrast, only seven of the twelve (58.3%) irrigation district officials opposed sales and an identical proportion favored leasing. Second, sales were generally opposed in all regions except the Southwest, where four of seven respondents (57.1%) favored sales. In addition, leasing was favored by one-half or more of the respondents in four regions, the Northwest (50.0%), the Northcentral (50.0%), the Central (50.0%), and the Southwest (66.7%).

E. Local Water Planning

In order to estimate the extent to which local jurisdictions are involved in water planning activities, the respondents were told: "If the state legislature initiates a state appropriation program, it would be necessary to develop a series of regional water plans which would contain hydrologic data about current supplies, estimated future demand, make preliminary designs and cost estimates and prioritize development alternatives for various water users." They were then asked, "Does your jurisdiction conduct water resources planning? (Please describe)."

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
1. Yes (plans conducted)	38	45.2	43.4
2. No (not conducted)	46	54.8	100.0
VALID TOTAL	84	100.0	

Open-ended descriptions of local planning activities reflect a considerable range from limited supply monitoring to comprehensive land and water use planning. It is significant to note that, for many jurisdictions, water resource planning is a recent occurrence. Many jurisdictions recently initiated planning while others hope to in the near future.

Analyses do not reveal significant differences in responses between status categories. Most regions have similar proportions of jurisdictions that conduct planning with the exception of the Southeast Central region, where only two of eight (20%) respondents answered "yes" and the Southeast, where five of seven (71.4%) answered "yes."

IV. Discussion

This preliminary investigation of local preferences related to state appropriation of unappropriated groundwater suggests strong support for the concept by a sample of nearly one hundred local officials. Twenty-one of the state's 33 counties (64.1%) and 35 of the 102 cities (35.1%) responded to the survey and most respondents included extensive comments and suggestions in support of developing a statewide program.

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The general findings specifically indicate that the overwhelming majority is willing to consider participating in a state appropriation program. About two-thirds of the sample are willing to commit local resources such as technical and planning assistance. Moreover, about one-half of the jurisdictions are involved or soon will be involved in water resources planning, which suggests that needed information is available in at least one-half the state's local jurisdictions. Over three-fourths of the respondents think their jurisdictions would be willing to expand existing water conservation programs and many want to link conservation to state appropriation activities.

Nearly three-fourths of the sample think state appropriation is needed immediately or in the near future. In all regions, most respondents estimate that secure supplies are available for less than forty years and nearly one-half of the sample think that secure supplies are available for less than twenty years. Many note that unanticipated demands for water supplies which result from unprecedented growth or adverse court decisions jeopardize their water situation.

The findings further suggest that state appropriation will require state funding in the majority of cases. Only a few respondents think that local revenues are sufficient to develop new supplies. Many cite fiscal constraints as well as the significant costs associated with system construction and maintenance. Others cite the escalating costs of water rights.

In response to a question about what state institution should be responsible for state appropriation, the majority of

the sample favor assignment to existing agencies such as the Office of the State Engineer or the Interstate Stream Commission. There is considerable opposition to the creation of any new agencies, although a few support this option. Most have confidence in existing agencies but, at the same time, most stress the need for regional representation and local input in the development and operation of a state appropriation program.

With specific reference to the use of appropriated water, there is considerable opposition to either the sale or the lease of water to out-of-state users even if the revenues generated were used to finance water development in the state. However, there is less opposition to leasing water for relatively short periods of time, especially if leases are negotiated after the state conducts an exhaustive inventory of current and future supplies and commitments within the state.

APPENDIX A

ANALYSES OF RESPONSES BY
RESPONDENT STATUS AND REGION

	RESPONDENT STATUS					RESPONDENT REGION OF RESIDENCE					TOTALS		
	Local	County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.M.		S.C.	S.E.C.
Adequacy of Supply (Q1)													
0--20 years	19 52.9%	7 24.1%	4 50.0%	8 61.5%	37 44.0%	9 60.0%	3 42.9%	7 36.8%	3 33.3%	3 42.9%	1 36.4%	5 56.6%	3 42.9%
21--40 years	7 20.6%	10 34.5%	2 25.0%	1 7.7%	20 23.8%	2 13.3%	2 28.6%	5 26.3%	3 33.3%	2 28.6%	3 27.3%	1 11.1%	2 28.6%
Over 40 years	9 26.5%	12 41.4%	2 25.0%	4 30.8%	27 32.1%	4 26.7%	2 28.6%	7 36.8%	3 33.3%	2 28.6%	4 36.4%	3 35.3%	2 28.6%
TOTALS	34 100%	29 100%	8 100%	13 100%	84 100%	15 100%	7 100%	19 100%	9 100%	7 100%	11 100%	9 100%	7 100%
Adequacy of Local Funds (Q2)													
Yes (adequate)	6 16.7%	4 11.4%	2 25.0%	1 7.7%	13 14.1%	2 11.8%	0 0.0%	1 4.8%	3 30.0%	2 28.6%	1 7.7%	0 0.0%	4 57.1%
No (inadequate)	26 72.2%	27 77.1%	6 75.0%	10 76.9%	69 75.0%	14 82.4%	6 85.7%	17 81.0%	5 50.0%	5 71.4%	11 84.6%	8 80.0%	3 42.9%
N/A	4 11.1%	4 11.4%	0 0.0%	2 15.4%	10 10.9%	1 5.9%	1 14.3%	3 14.3%	2 20.0%	0 0.0%	1 7.7%	2 20.0%	0 0.0%
TOTALS	36 100%	35 100%	8 100%	13 100%	92 100%	17 100%	7 100%	21 100%	10 100%	3 100%	13 100%	10 100%	7 100%

	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.M.	S.C.	S.E.C.	S.E.	TOTALS
Willing to Consider Participating (Q3)													
Yes	29 82.9%	28 100.0%	10 76.5%	75 82.4%	14 82.4%	5 85.7%	16 76.2%	8 80.0%	5 71.4%	12 92.3%	8 88.9%	6 85.7%	75 82.4%
No	0 0.0%	0 0.0%	1 7.7%	1 1.1%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 11.1%	0 0.0%	1 1.1%
Undecided	6 17.1%	7 20.0%	2 15.4%	15 16.5%	3 17.6%	1 14.3%	5 23.8%	2 20.0%	2 28.6%	1 7.7%	0 0.0%	1 14.3%	15 16.5%
TOTALS	35 100%	35 100%	13 100%	91 100%	17 100%	7 100%	21 100%	10 100%	7 100%	13 100%	9 100%	7 100%	91 100%

	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.M.	S.C.	S.E.C.	S.E.	TOTALS
Willing to Commit Local Resources (Q3a)													
Yes	21 58.3%	24 87.5%	9 69.2%	61 67.0%	13 76.5%	5 71.4%	9 42.9%	7 77.8%	4 57.1%	11 84.6%	7 70.0%	5 71.4%	61 67.0%
No	0 0.0%	0 0.0%	1 7.7%	1 1.1%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 1.1%
Undecided	15 41.7%	10 29.4%	3 23.1%	29 31.9%	4 23.5%	2 28.6%	12 57.1%	2 22.2%	3 42.9%	2 15.4%	2 20.0%	2 28.6%	29 31.9%
TOTALS	36 100%	34 100%	13 100%	91 100%	17 100%	7 100%	21 100%	10 100%	7 100%	13 100%	10 100%	7 100%	91 100%

	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.M.	S.C.	S.E.C.	S.E.	TOTALS
Willing to Expand Conservation (Q3b)													
Yes	25 69.4%	29 82.9%	13 100.0%	72 78.3%	14 82.4%	4 57.1%	17 81.0%	9 90.0%	6 85.7%	10 76.9%	7 70.0%	5 71.4%	72 78.3%
No	1 2.8%	1 2.9%	0 0.0%	2 2.2%	0 0.0%	0 0.0%	4 4.9%	0 0.0%	0 0.0%	0 0.0%	1 10.0%	0 0.0%	2 2.2%
Undecided	10 27.8%	5 14.3%	0 0.0%	19 19.5%	3 17.6%	3 42.9%	3 14.3%	1 10.0%	1 14.3%	3 23.1%	2 20.0%	2 28.6%	19 19.5%
TOTALS	36 100%	35 100%	13 100%	92 100%	17 100%	7 100%	21 100%	10 100%	7 100%	13 100%	10 100%	7 100%	92 100%

Institutional Preference (04)	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.W.	S.C.	S.E.C.	S.E.	TOTALS
Create New Agency	6	5	3	1	15	2	1	3	0	3	1	2	15
	19.4%	12.5%	30.0%	6.7%	15.6%	10.0%	12.5%	13.0%	23.1%	21.4%	20.0%	33.3%	15.6%
Interstate Stream Com.	7	8	2	8	25	8	2	7	1	3	0	2	25
	22.6%	20.0%	20.0%	53.3%	26.0%	40.0%	25.0%	15.4%	14.3%	21.4%	0.0%	33.3%	26.0%
Existing Agencies	16	23	5	6	50	10	4	11	8	6	4	2	50
	51.6%	57.6%	50.0%	40.0%	52.1%	50.0%	50.0%	47.8%	61.5%	42.9%	80.0%	33.3%	52.1%
Other/Undecided	2	4	0	0	6	0	1	2	0	1	2	0	6
	6.5%	10.0%	0.0%	0.0%	6.3%	0.0%	12.5%	8.7%	0.0%	14.3%	0.0%	0.0%	6.3%
TOTALS	31	40	10	15	96	20	8	23	13	14	5	6	96
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Sell Water Out-of-State (05a)	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.W.	S.C.	S.E.C.	S.E.	TOTALS
Favor	8	7	2	5	22	5	0	5	1	4	3	1	22
	22.9%	21.2%	25.0%	41.7%	25.0%	29.4%	0.0%	25.0%	11.1%	57.1%	23.1%	14.3%	25.0%
Oppose	27	26	6	7	66	12	5	15	8	3	10	7	66
	77.1%	78.8%	75.0%	58.3%	75.0%	70.6%	100.0%	75.0%	88.9%	42.9%	76.9%	85.7%	75.0%
TOTALS	35	33	8	12	88	17	5	20	9	7	13	10	88
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Lease H2O Out-of-State (05b)	Local County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.W.	S.C.	S.E.C.	S.E.	TOTALS
Favor	13	10	3	7	33	8	2	6	5	4	3	3	33
	39.4%	31.5%	37.5%	58.3%	38.8%	50.0%	50.0%	30.0%	50.0%	66.7%	25.0%	20.0%	38.8%
Oppose	20	22	5	5	52	8	2	14	5	2	9	4	52
	60.6%	68.5%	62.5%	41.7%	61.2%	50.0%	50.0%	70.0%	50.0%	33.3%	75.0%	57.1%	61.2%
TOTALS	33	32	8	12	85	16	4	20	10	6	12	7	85
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Is Planning Conducted (Q6a)	Local	County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.W.	S.C.	S.E.C.	S.E.	TOTALS
Yes	16	14	3	5	38	6	3	10	3	2	7	2	5	38
	47.1%	42.4%	50.0%	45.5%	45.2%	37.5%	50.0%	55.6%	33.3%	33.3%	58.3%	20.0%	71.4%	45.2%
No	18	19	3	6	46	10	3	8	6	4	5	8	2	16
	52.9%	57.6%	50.0%	54.5%	54.8%	62.5%	50.0%	44.4%	66.7%	66.7%	41.7%	80.0%	28.6%	54.8%
TOTALS	34	33	6	11	84	16	6	18	9	6	12	10	7	54
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Need For Appropriation (Q7)	Local	County	Legis.	Dist.	TOTALS	N.M.	N.C.	N.E.	CEN.	S.W.	S.C.	S.E.C.	S.E.	TOTALS
As Soon as Possible (Immed.+Near Future)	19	17	5	7	48	13	6	6	7	2	6	5	3	48
	55.9%	38.6%	62.5%	63.8%	48.5%	81.3%	65.7%	30.0%	70.0%	28.6%	46.2%	55.6%	42.9%	53.9%
Distant Future, if at all	7	19	2	4	32	2	1	7	2	2	3	2	3	22
	20.6%	43.2%	25.0%	30.8%	32.3%	12.5%	14.3%	35.0%	20.0%	28.6%	23.1%	22.2%	42.9%	24.7%
Undecided/Not Sure	8	8	1	2	19	1	0	7	1	3	4	2	1	19
	23.5%	18.2%	12.5%	15.4%	19.2%	6.3%	0.0%	35.0%	10.0%	42.9%	30.8%	22.2%	14.3%	21.3%
TOTALS	34	44	8	13	99	16	7	20	10	7	13	9	7	89
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

CHAPTER THREE
SELECTION OF AN AGENCY

i. Introduction

In the first study, the research team tentatively identified the Interstate Stream Commission or the Department of Natural Resources as agencies that could implement a state appropriation program. These choices were based on public opinions voiced in community meetings, a review of similar planning efforts and appropriation programs in other western states and a preliminary analysis of a range of institutional options, including: (1) selecting an existing agency to coordinate state reservations of water; (2) selecting an existing agency to appropriate water; and (3) creating a new agency to appropriate water. Selection of the Interstate Stream Commission was also based upon a review of past proprietary Commission activities.

In public meetings around the state, people strongly preferred an agency that would be responsive to regional, and not merely statewide, problems. This is not surprising given the diverse economic and social uses of water in the state's different regions. The importance of a regional focus was also evident from the review of planning and appropriation by other western states. It showed that two essential ingredients for a successful program are: (1) prior to commitment to regional planning processes prior to state appropriation of water; and (2) separation of

regulatory (planning) and proprietary (appropriation) functions. Three relatively different institutional options were evaluated:

A. Select an Existing Agency to Simply Coordinate State Reservations of Water

The first option allows any state agency or political subdivision to appropriate unappropriated water subject to final approval by the State Engineer. The coordinating organization would not be expected to acquire and control unappropriated waters, but simply hold it for the state agency until needed. Due to the regulatory emphasis of this option, the Office of the State Engineer would be a logical candidate.

B. Select an Existing Agency to Appropriate Water

Assuming that the State Engineer would continue to perform primarily a regulatory function, i.e., to review all water rights transactions according to constitutional and statutory criteria, the State Engineer's Office could not be the appropriating agency under this option due to potential conflict of interest challenges. However, another existing agency could be designated to appropriate, develop, and sell or lease unappropriated water.

C. Create a New Agency to Appropriate Water

The state legislature could create a commission, a statewide special purpose district, or a not-for-profit corporation whose sole purpose would be to appropriate, develop, and lease or sell unappropriated water.

The three institutional options were evaluated according to three general administrative considerations: (1) Suitability of the task to the basic purpose of the organization; (2) Accountability to the public and its representatives; (3) Feasibility

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from technical, political, legal and economic viewpoints. The relative advantages and disadvantages of each option are summarized in Table 1.

TABLE 1: RELATIVE RATINGS OF SUITABILITY, ACCOUNTABILITY, FEASIBILITY OF INSTITUTIONAL OPTIONS FOR STATE APPROPRIATION OF WATER

INSTITUTIONAL OPTION*	SUITABILITY	ACCOUNTABILITY	POLITICAL	FEASIBILITY		
				ECONOMIC	TECHNICAL	LEGAL
OPTION 1: SELECT EXISTING AGENCY TO RESERVE WATER	MODERATE	MOD./HIGH	HIGH	HIGH	MODERATE	NOT POSSIBLE
OPTION 2: SELECT EXISTING AGENCY TO APPROPRIATE	MOD./HIGH	HIGH	MODERATE	HIGH	HIGH	HIGH
OPTION 3: CREATE NEW AGENCY TO APPROPRIATE	HIGH	HIGH	LOW	MODERATE	MODERATE	HIGH

Option 2, selecting an existing agency to appropriate, received consistently moderate to high ratings. Although Option 1 received high ratings for suitability and accountability, the research team concluded that this option of simple reservation by declaration, without plans to put water to beneficial use, is not legally feasible in New Mexico and would be of questionable value. Option 3, creating a new agency to appropriate water, also received high ratings for suitability and accountability, but received a low rating in terms of political feasibility due both to the increasing reluctance of government to create new agencies and to the existence of other agencies that might be able to accomplish the task.

Based upon these indices, the research team concluded that the Interstate Stream Commission was the most logical choice as

the agency to institute a state appropriation program. The research team concluded further, however, that more research was needed to ensure that the agency would be politically and geographically representative of the state's diverse interests.

II. The Present Study

A. Criteria for Agency Selection

The survey conducted for the current study (see Chapter Two) contained questions designed to elicit public preferences concerning which state agency should initiate a state appropriation program. The survey results showed a clear preference for using an existing agency rather than creating a new agency and underscored the tentative conclusion of the first study as to the importance of regional planning as opposed to plans emanating from the state capitol. Numerous respondents named specific agencies they considered good candidates, including the Interstate Stream commission, the Water Quality Control Commission, and the Office of the State Engineer. Based upon the survey results and the previous study, the research team chose three principal criteria to select an agency: (1) maintenance of a separation between regulatory and proprietary functions, where necessary; (2) responsiveness to diverse regional interests; (3) a high degree of existing staff expertise in water matters.

B. Application of Criteria to Existing Agencies

Four existing state agencies have some interest in operating a state appropriation program: the Department of Natural Resources; the Office of the State Engineer; the Water Quality

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Control Commission; and the Interstate Stream Commission. Each agency is evaluated under the three criteria listed above.

1. The Natural Resources Department

Created in 1977, this agency coordinates the activities of three divisions: the State Park and Recreation Division, the Forestry Division; and the Soil and Water Conservation Division.¹ Originally, the Office of the State Engineer was the fourth division of the Department. In 1982, the legislature reconsidered this arrangement and re-established the Office of the State Engineer as a separate department.² In other western states, an umbrella-type department like this might be a suitable agency to direct regional water-use planning activities. But, because of its limited coverage (excluding water and minerals), extensive restructuring of state agency relationships would be required for this department to acquire the necessary staff expertise and public confidence to coordinate regional water use planning efforts. A second drawback to selecting this agency is that it is designed to respond to statewide and not regional concerns. This could be ameliorated by establishing a regionally based board or commission to oversee regional planning efforts, but this would be costly and duplicative of an existing agency's function. Thus, this department does not, in its present form, meet two of the

¹N.M. Stat. Ann. § 9-10-3 (Repl. Pamp. 1985).

²1982 N.M. Laws ch. 10.

criteria established for selecting an agency to operate a state appropriation program.

Even if the Department were in a position to coordinate regional water-use planning, there is a greater stumbling block that would preclude it from operating a state appropriation program. The Department, by its very nature, is a state regulatory agency. Given its statutory purpose, to coordinate the activities of several regulatory agencies in charge of numerous public welfare concerns, as presently structured it would be very difficult to convince a court that as to water resources it is functioning in a proprietary capacity.

2. The Water Quality Control Commission

The purpose of this Commission is to regulate a variety of activities and substances that may cause unacceptable degradation of the quality of water resources.³ It is composed of the director of the Environmental Improvement Division, the directors of the State Game and Fish Department, the Park and Recreation Division, the Department of Agriculture, and the Bureau of Mines, chairpersons of the Soil and Water Conservation Commission and the Oil Conservation Commission, the State Engineer and one representative of the public. Although the Commission is given numerous duties, it does not have a technical staff separate from the Environmental Improvement Division.⁴ Regulations promulgated

³N.M. Stat. Ann. § 74-6-4 (Repl. Pamp. 1986).

⁴N.M. Stat. Ann. § 74-6-4(E) (Repl. Pamp. 1986).

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by the Commission are administered by constituent agencies, namely those represented by the Commission membership.⁵

When the Water Quality Control Commission is evaluated under the criteria for agency selection, it becomes clear that it would not be the most appropriate existing organization to implement a state appropriation program. Although there is a high degree of existing staff expertise in water matters in the Environmental Improvement Division, federal funding cuts have drastically affected the ability of the EID to meet its present statutory duties. Thus, it would be a costly proposition for the state to put the Water Quality Control Commission in charge of a state appropriation program. The state would have to greatly increase current funding levels even to initiate regional water-use planning.

Under the second criterion, the Water Quality Control Commission does not do any better. Essentially, the Commission is made up of state directors of other regulatory bodies who, by virtue of their positions, must have a statewide focus. Public representation is limited to one member; thus, there is little particularized accountability to diverse regions of the state.

The Water Quality Control Commission is specifically designed to protect the quality of water resources through the adoption of regulations ultimately administered by other regulatory agencies. As with the Department of Natural Resources, this

⁵Id. § 74-6-8.

body has little or no proprietary function and may be equally incapable, as an institution, of being considered as acting in a purely proprietary capacity.

3. The Office of the State Engineer

For many years, this state agency has been primarily responsible for the allocation of water in New Mexico.⁶ The public identifies this agency with protection of water resources more often than any other state agency.⁷ The State Engineer is appointed by the Governor and confirmed by the Senate for terms of two years, and the office has extensive statutory duties.⁸ The Office has a separate technical and legal staff. Their expertise in water matters is unsurpassed by that of any other state agency. Thus, this agency clearly meets the criterion requiring a high degree of expertise in water matters.

Unlike the staff of the Environmental Improvement Division, this office is funded primarily by state monies and therefore has not suffered a similar loss in funding. The agency, although it does not have formal regional representation, has a long history of working with local governmental groups on water development projects. This local expertise is undercut, however, by the fact that ultimately the State Engineer must maintain a statewide

⁶The Office of the Territorial Engineer was established in 1905. N.M. Stat. Ann. §§ 72-2-1, 72-2-9 (Repl. Pamp. 1986).

⁷See survey results in Chapter Two.

⁸N.M.S.A. 72-2-8 (copy stat.).

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rather than regional focus, and there is no formal accountability to the diverse regions of the state.

Evaluation under the third criterion, maintenance of a separation between regulatory and proprietary functions, highlights the unsuitability of this agency for implementing a state appropriation program. The research team examined this agency as a potential state appropriator in the first state appropriation study and concluded that it would be inappropriate because the State Engineer would ultimately be both the applicant for an appropriation and the grantor of the permit. This would result in an unacceptable conflict of interest.

4. The Interstate Stream Commission (ISC)

Created in 1936, the ISC has steadily expanded in size from three members to its current size of nine. Eight members are appointed by the governor for six-year terms. Unlike all the other agencies evaluated, Commission membership is not made up of state administrators. Rather, the statute mandates the following:

The members appointed by the governor shall be representative of major irrigation districts or sections, and no two members shall be appointed from the same irrigation district or section.

The ninth member of the Commission is the State Engineer, who also serves as secretary of the Commission. The commissioners elect a chairperson.

⁹N.M. Stat. Ann. § 72-14-1 (Repl. Pamp. 1986) (emphasis added).

Numerous statutes authorize the ISC to engage in a variety of activities in relation to water supply, but few, if any, are of a regulatory nature.¹⁰ Essentially, the Commission has developed its own water projects, contracted with federal agencies in regard to federal projects, and negotiated compacts regarding surface water between co-riparian states, thereby establishing state entitlements under those agreements. The Interstate Stream Commission and the Office of the State Engineer share technical and support staff.

As noted in the evaluation of the Office of the State Engineer, this shared technical and support staff has an exceptionally high degree of expertise in water matters, and it has not been substantially affected by federal funding cuts. Thus the ISC clearly meets this criterion. Additions to the existing staff needed to implement a state appropriation program would be minor. Any effort to duplicate this staff in another existing agency would be costly and unnecessarily duplicative.

Unlike any other agency evaluated by the study team, by statutory mandate the ISC must be representative of diverse areas of the state. Although the statute does not expressly mention regions, the Commission's membership historically has represented many very different areas and diverse interests. Even though there is no formal accountability mechanism in the selection of the commissioners, a review of past ISC activities shows that

¹⁰ See N.M. Stat. Ann. §§ 72-14-3, 72-14-10 et seq (Repl. Pamp. 1986).

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informal accountability exists. Interviews with some commissioners reinforced this, as they see themselves as community representatives. Therefore, the ISC is the most suitable agency of those evaluated in terms of responsiveness to regional concerns.

The final criterion is the maintenance of a separation between state efforts to regulate water use and to acquire property rights in water resources. In contrast to the Office of the State Engineer where its activities are purely regulatory, the overwhelming majority of ISC activities are proprietary. The ISC has established a history of such activities; one example, development of Ute Dam and Reservoir, is fully described in the first state appropriation report. Given this history of proprietary activity and the absence of regulatory duties in its statutory mandate, the ISC is the most suitable existing state agency to implement a state appropriation program under the third criterion.

Of the four state agencies evaluated by the research team, the Interstate Stream Commission is the most suitable under all three criteria to oversee the implementation of a state appropriation program. This does not mean that such a program can succeed without some contribution from the other agencies. The Department of Natural Resources oversees three divisions that represent important non-economic public welfare uses of water that should be incorporated into any regional plan. The Water Quality Control Commission and EID staff, to the extent feasible, can assist regions in planning to maintain water quality into the future. This is especially important where a region finds that its

water supply is insufficient to meet present and planned future needs. Conservation programs and coordinated land-use planning to protect the quality of remaining water for a variety of future uses might be the only realistic water-use plan this type of region could develop. The EID staff has worked with several communities to minimize the impact of land uses on groundwater resources. A specific example is the determination of the proper minimum lot size for subdivision developments where individual septic systems can contaminate domestic water supplies or surface water, if nearby. It is the conclusion of the research team that these agencies should be consulted by the regions when developing a regional plan.

The research team has also concluded that it is essential to the state appropriation process for the Office of the State Engineer to retain a strictly regulatory function. Rather than regulating itself, the ISC will be subject to regulation by the State Engineer, as is any private applicant to appropriate water. This will ensure the validity of appropriation under state law.

There is one minor problem with this approach. In the past the State Engineer has been a full participant in ISC decision-making. In order to avoid raising issues concerning conflict of interest, it may be necessary to limit State Engineer participation in ISC decision-making that is integral to the state appropriation program. This is the topic of the next section.

C. Avoiding Conflicts of Interest in ISC Decision-making

As secretary of the Interstate Stream Commission, the State

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Engineer is presently involved with every aspect of ISC decision-making. There is no problem with this under Alternative A, if all that is occurring is regional planning. If the legislature makes the decision to adopt either Alternative B or Alternative C and the Interstate Stream Commission becomes an appropriator of water, conflicts can be avoided only if the State Engineer does not vote on plan approval and subsequent decisions to appropriate and/or purchase groundwater rights. This does not require any amendment to existing statutes, however. It can and must be accommodated when the Commission establishes the procedural rules for a state appropriation program.

A related problem involves the shared support staff of the two agencies. It has been noted previously that it would be quite costly to duplicate the existing support staff. Some changes would be necessary, though, if the legislature adopts Alternatives B or C. Any legal counsel would be faced with the same conflict of interest as the State Engineer. Thus it would be essential for the two agencies not to have the same legal counsel that advises the ISC to appropriate water represent the State Engineer in the hearing reviewing the appropriation application. This can be accomplished in two ways: (1) have the Office of the Attorney General represent the ISC, or (2) establish a legal counsel for the ISC, separate from the existing shared staff, to handle appropriations applications.

Ultimately the research team concluded that this issue should best be resolved by the ISC and the Attorney General. The second alternative may be preferable, though, for the following

reasons. For a number of years the SEO/ISC staff has developed an expertise in water law far beyond that of any other agency, including the Attorney General's Office. Furthermore, it is not clear that this position will require the full time of an attorney, but it will require a specialist in water law. When not involved in ISC matters, its counsel could be used by the State Engineer for matters unrelated to a state appropriation program. In contrast, the Office of the Attorney General would probably have less use for the water law specialist, making this alternative more costly.

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ALTERNATIVE MODELS FOR STATE APPROPRIATION

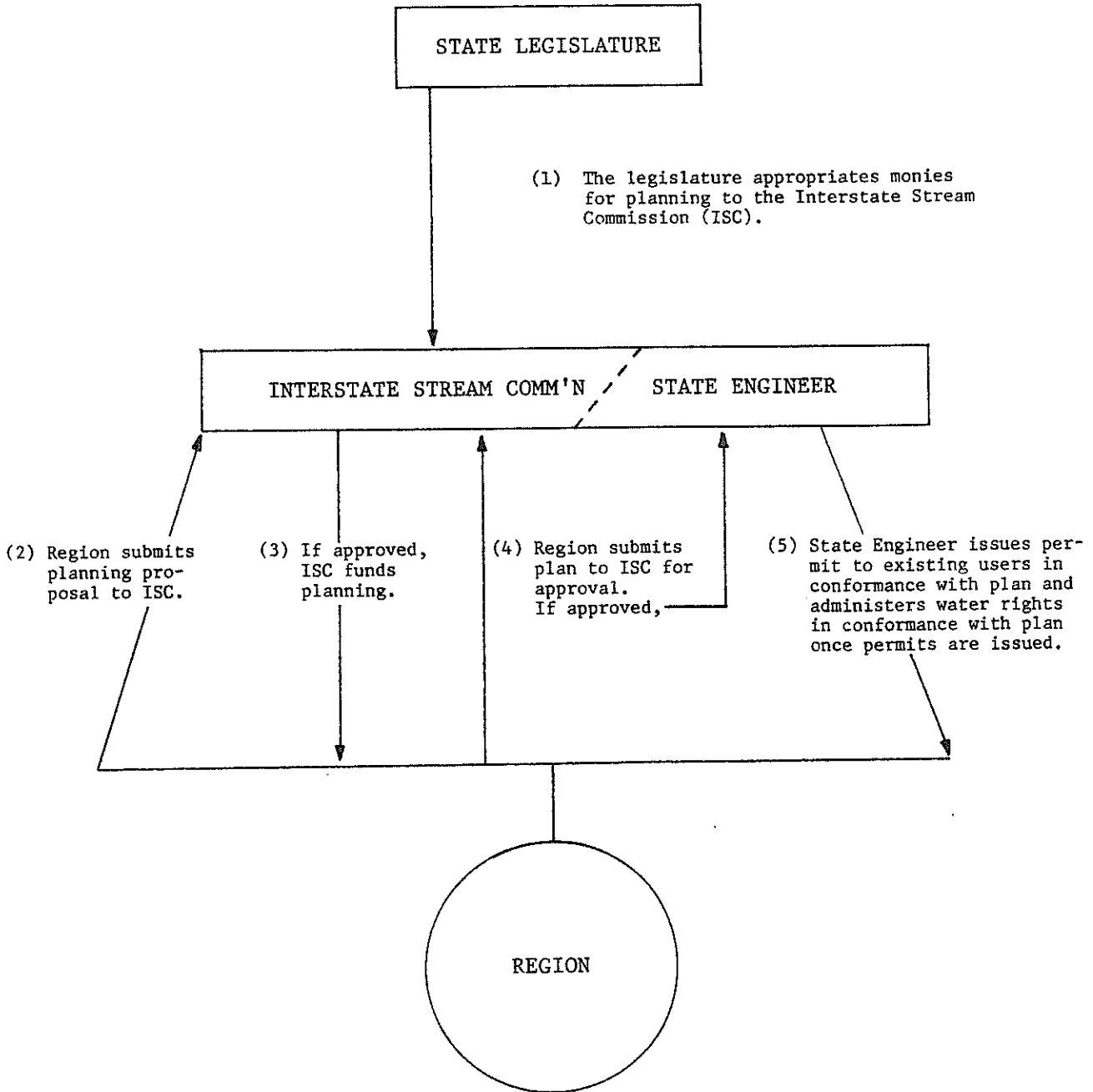
Our past studies point out that the fundamental effect of the Sporhase decision is to play havoc with the means used to define the supply of water for both present and future uses. Rather than simply looking to all the water within its territorial borders, a state must look to water for which it has planned future uses to determine the available supply. In the absence of any state-held property interest in water resources, this amount can be described as that necessary to meet primarily noneconomic public welfare uses.

This definition creates more issues than it answers. Apart from the difficulty of separating out primarily economic uses, the public welfare standard is ill-suited for defining the available water supply because it is incapable of precise definition in the abstract. Ideally, a state legislature provides affirmative statutory guidance that gives some contours to the scope of the standard. New Mexico's legislature has not done this; until the present, the judicial branch of government has given some substance to the standard. This necessarily results in ad hoc decisions as to what is or is not contrary to the public welfare. What a broad public welfare statute does not do is give state water agencies a means to measure available supply.

In response to this rather fatal flaw, we have designed three procedural models that would define the supply of water

available to the state. Alternative A sets out a regional planning process that, upon completion, would result in a quantification of the amount needed to meet public welfare uses for no more than forty years into the future. It involves, in effect, no appropriation by the state. Alternatives B and C are outgrowths of Alternative A. Under Alternative B, once planning is completed, the state would take the next step and appropriate presently unappropriated (or free) groundwater as needed and could do so with a time horizon greater than forty years. In Alternative C, the state would both acquire existing rights and appropriate any free groundwater.

ALTERNATIVE A
Regional Water Planning



Notes to Alternative A

1. Alternative A is designed to allow the various regions of the state to develop water-use plans that will define future needs. Once each region completes this process, there will exist a rough quantification of the supply that the state can claim exclusively to meet the public welfare needs of the state in the absence of state participation in the water market. Any conflicts between regional plans would be resolved by the Interstate Stream Commission, a body with representation from many regions of the state.

2. Many scholars in a wide variety of disciplines find the river basin or drainage area to be the best unit for water resources planning. It is not clear that this is a feasible approach in New Mexico, though. Some areas do not have any truly perennial streams and rely on groundwater exclusively. Even where there is a perennial stream, there may be many other factors that preclude unitary planning, including geography, climate, and fundamentally different social and cultural views as to the nature of the resource. From our research, it is clear that the extent of water-use planning varies throughout the state. Given all of these factors, we believe it is in the best interest of the state to allow the regions to define themselves, based on like interests. This can be accomplished through joint powers agreements among governmental entities, such as counties, municipalities and tribes. Note 7 to this alternative presents an

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example of regional planning involving different governmental entities.

3. The proposed process would require the ISC to approve both the proposal for planning and the regional plan that results from the process. If this policy is adopted by the state, the ISC will have to develop criteria to evaluate both planning proposals and the completed plans. For planning proposals, the criteria should require sufficient information to describe the scope of the process. At a minimum, this would include:

- a. identification of the region;
- b. identification of existing plans, if any;
- c. the planning process to be used;
- d. a timetable for completion of initial planning;
- e. provisions for notice, review and comment by all interested governmental entities including federal entities where appropriate;
- f. provisions for notice, review and comment by the Water Quality Control Commission or the State Environmental Improvement Division to ensure compliance with laws regarding water quality;
- g. identification of funding sources other than the ISC; and
- h. identification of region's contribution to planning costs; i.e., existing planning and technical personnel.

The criteria for approval of a completed plan should evaluate the conformity of the plan with statewide water policy. It

would be appropriate, then, for the ISC to develop criteria for approval based upon its representation of all areas of the state. It is the view of the research team that development of criteria should be left to the discretion of the ISC through normal agency rule-making procedures. It should be noted, though, that the full potential of regional planning cannot be achieved unless the plan identifies the amount of water, if any, that is needed beyond the known available supply. Given that regional needs change as time passes, any completed plan should provide for a periodic review process, perhaps once every ten years. Criteria for plan approval might also include conservation and use efficiency standards. Many states have developed criteria to evaluate water-use plans and subsequent specific projects. A sampling of these statutes is provided below. A more thorough discussion can be found in Chapter 11 of the first state appropriation study.

Wyoming: This state has established statutory criteria both for planning and for specific projects.

§ 41-2-109. Content of plans; identification; evaluation

(a) The water resources plans shall, to the extent deemed practical:

(i) Identify, describe and inventory the occurrence, amounts, availability and quality of water resources, current uses of water, activities that affect the quality of water, and activities that are dependent on, affected by, or relate to water and uses of water.

(ii) Identify and describe prospective needs and demands for water and opportunities for water development, control, withdrawal, storage, conservation, supply, distribution, drainage and disposal;

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(iii) Identify and specify for each plan appropriate state, regional and local goals and objectives for management of water resources, including the obtaining of economic efficiency and a desirable distribution of income, the protection of the health, safety and welfare of the people, the protection and encouragement of particular industries and activities, the protection and enhancement of the environment and recreation; and

(iv) Evaluate and compare prospective and anticipated uses and projects, including combinations and coordinations thereof, uses of alternative sources of water and alternative uses of water, in terms of goals identified pursuant to paragraph (iii) of this subsection.

§ 41-2-114. Development of water projects; rehabilitation of water projects.

(a) The commission shall, on the basis of the state water plan or as otherwise directed by the legislature and after consultation with and advice from state agencies and officials, other appropriate agencies and officials and members of the public, identify and select potential projects to be studied for inclusion in the Wyoming water development program pursuant to the following schedule:

(i) Level I reconnaissance studies shall, to the extent possible:

(A) Describe the project;

(B) Identify the need for the project including supplies and demands for the water;

(C) In cooperation with the state engineer, assess the status of water rights, including existing conflicts and recommendations for resolution of the conflicts and other potential obstacles;

(D) Assess and describe federal permits required for construction;

(E) Assess environmental considerations and constraints, including recreational use of the water in storage;

(F) Identify legal constraints to development;

(G) Identify alternate sources of supply including both surface water and groundwater;

(H) Summarize public testimony received at meetings held by the commission in the basin of origin; and

(J) Contain the commission's recommendation to the legislature whether to terminate further consideration of the proposed project or to continue the project at its current level of study, or to proceed with further activity under paragraphs [paragraph] (a)(ii), (iii) or (iv) of this section.

(ii) Level II feasibility studies shall to the extent possible:

(A) Include a detailed analysis of factors relevant to development, operation and maintenance;

(B) Identify major problems and opportunities concerning development and the environmental, recreational, social and economic effects of development;

(C) Identify the desired sequence of events including commencement of state and federal permitting activities and acquisition of land;

(D) Summarize testimony received at public meetings held by the commission in the basin of origin;

(E) Include test drilling for groundwater projects;

(F) Contain the commission's recommendations to the legislature whether to terminate further consideration of the proposed project or to continue the project at its current level of study, or to proceed with further activity under paragraphs [paragraph] (a)(iii) or (iv) of this section; and

(G) Include draft enabling legislation.

(iii) Level III development plans shall include, to the extent possible:

(A) Final design and cost estimates;

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(B) The project financing plan;

(C) Identification of the interests in land and water rights to be acquired and the means and costs of acquisition. An "interest in land" may include the fee simple title or any other interest in land less than a fee simple; and

(D) Draft legislation describing in detail the construction, operation and financing of the proposed project, including reimbursement of predevelopment costs from the beneficiaries of the project.

(iv) Level IV construction and operation plans shall proceed as authorized and approved by the legislature under the immediate direction and control of the commission. Preference in the marketing of hydroelectric power from any such project shall be given to utilities serving Wyoming municipalities and to rural electric cooperatives where economical and permissible under federal law. Pursuant to legislative authorization for water development projects and prior to completion of Level IV construction the commission may:

(A) Design, construct, acquire or purchase water development projects for the conservation, storage, distribution and use of water or any feature, facility or portion of a project;

(B) Contract for the performance of any power under subparagraph (A) of this paragraph, and consult with or employ experts and professional persons;

(C) Acquire by purchase, lease, appropriation, gift, exchange or eminent domain, necessary land, easements and other property for construction, operation and maintenance of water projects and accept gifts, grants and contributions of money from any source;

(D) Acquire by purchase, lease, appropriation, development, gift or exchange necessary water rights for construction, operation and maintenance of water projects and accept gifts, grants and contributions of money from any source;

(E) Contract for the sale, lease or delivery of water, water rights, water

storage or hydroelectric power, and fix charges, rates, rents, fees and tolls with the advice of the economic development and stabilization board;

(F) Contract with, contribute to or receive contributions from any legal subdivision of the state, special district, private corporation or person for the construction, operation, management and maintenance of any project or any interest in any facility or function of a project with the advice of the economic development and stabilization board.

(v) After completion of Level IV construction, the economic development and stabilization board:

(A) Shall be responsible for the operation and maintenance of state owned facilities constructed under the direction and control of the commission;

(B) Shall manage contracts and agreements entered into by the commission pursuant to paragraph (iv) of this subsection;

(C) May contract for the sale, lease or delivery of water, water rights, water storage or hydroelectric power and fix charges, rates, rents, fees and tolls for any project constructed pursuant to paragraph (iv) of this subsection not in conflict with contracts and agreements entered into by the commission;

(D) May contract with, contribute to or receive contributions from any legal subdivision of the state, special district, private corporation or person for the operation, management and maintenance of any project or any interest in any facility or function of a project.

....

Texas: This is just one example of criteria developed for planning activities and subsequent projects:

§ 15.406. Regional Facility Planning

(a) The board may enter into contracts with political subdivisions to pay from the research and

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planning fund all or part of the cost of developing regional facility plans.

(b) A political subdivision that desires money from the research and planning fund for regional facility planning shall submit a written application to the board in the manner and form required by board rules.

(c) The application shall include:

(1) the name of the political subdivision;

(2) a citation to the laws under which the political subdivision was created and is operating including specific citation of all laws providing authority to plan, develop, and operate regional facilities;

(3) the amount requested from the board for regional facility planning; and

(4) any other information required by the board in its rules or specifically requested by the board.

(d) After notice and hearing, the board may award the applicant all or part of the requested funds that are considered necessary by the board for the political subdivision to carry out adequate regional facility planning.

(e) If the board grants an application under this section and awards funds for regional facility planning, the board shall enter into a contract with the political subdivision that includes:

(1) a detailed statement of the purpose for which the money is to be used;

(2) the total amount of money to be paid from the research and planning fund under the contract; and

(3) any other terms and conditions required by board rules or agreed to by the contracting parties.

(f) The board shall adopt rules establishing criteria of eligibility for regional facility planning money that considers:

(1) the relative need of the political subdivision for the money;

(2) the legal authority of the political subdivision to plan, develop, and operate regional facilities; and

(3) the effect of regional facility planning by the political subdivision on overall regional facility planning, development, and operation in the state and within the area in which the political subdivision is located.

(g) The board may require that regional facility plans developed under contracts entered into under this section be made available to the department as provided by board rules.

Washington recently adopted a groundwater planning system:

NEW SECTION. Sec. 2. (1) To assist in the development of ground water management programs, a ground water management advisory committee, with representation from major user and public interest groups, and state and local governments shall be appointed by the department for each area or sub-area. The procedure for advisory committee appointment, terms of appointment, and committee responsibilities shall be addressed in the rules prepared under section 1 of this act.

(2) The ground water area or sub-area management programs shall include:

(a) A description of the specific ground water area or sub-areas, or separate depth zones within any such area or sub-area, and the relationship of this zone or area to the land use management responsibilities of county government;

(b) A management program based on long-term monitoring and resource management objectives for the area or sub-area;

(c) Identification of water resources and the allocation of the resources to meet state and local needs;

(d) Projection of water supply needs for existing and future identified user groups and beneficial uses;

(e) Identification of water resource management policies and/or practices that may impact the recharge of the designated area or policies that may affect the safe yield and quantity of water available for future appropriation;

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(f) Identification of land use and other activities that may impact the quality and efficient use of the ground water, including domestic, industrial, solid, and other waste disposal, underground storage facilities, or storm water management practices;

(g) The design of the program necessary to manage the resource to assure long-term benefits to the citizens of the state;

(h) Identification of water quality objectives for the aquifer system which recognize existing and future uses of the aquifer and that are in accordance with department of ecology and department of social and health services drinking and surface water quality standards;

(i) Long-term policies and construction practices necessary to protect existing water rights and subsequent facilities installed in accordance with the ground water area or sub-area management programs and/or other water right procedures;

(j) Annual withdrawal rates and safe yield guidelines which are directed by the long-term management programs that recognize annual variations in aquifer recharge;

(k) A description of conditions and potential conflicts and identification of a program to resolve conflicts with existing water rights;

(l) Alternative management programs to meet future needs and existing conditions, including water conservation plans; and

(m) A process for the periodic review of the ground water management program and monitoring of the implementation of the program.

(3) The ground water area or sub-area management programs shall be submitted for review in accordance with the state environmental policy act.

Arizona: Pursuant to the state's groundwater management act, the Director of Water Resources must establish water-use plans for certain areas of the state. The planning horizon is broken into five planning periods, each involving more stringent criteria.

§ 45-564. Management plan for first management period; guidelines

A. For the first management period, 1980 to 1990, ... [i]n each plan the director shall establish:

1. An irrigation water duty for each farm unit in the active management area. The irrigation water duty shall be calculated as the quantity of water reasonably required to irrigate the crops historically grown in a farm unit and shall assume conservation methods being used in the state which would be reasonable for the farm unit including lined ditches, pump-back systems, land leveling and efficient application practices, but not including a change from flood irrigation to drip irrigation or sprinkler irrigation.

2. A conservation program for all non-irrigation uses of groundwater. For municipal uses, the program shall require reasonable reductions in per capita use and such other conservation measures as may be appropriate for individual users. For industrial uses including industrial uses within the exterior boundaries of the service area of a city, town, private water company or irrigation district, the program shall require use of the latest commercial available conservation technology consistent with reasonable economic return.

3. Economically reasonable conservation requirements for the distribution of groundwater by cities, towns, private water companies and irrigation districts within their service areas.

....

§ 45-565. Management plan for second management period; guidelines

A. For the second management period, 1990 to 2000, [i]n each plan the director shall:

1. Establish a new irrigation water duty for each farm unit to be reached by the end of the second management period and may establish one or more intermediate water duties to be reached at specified intervals during the second management period. The irrigation water duty and any intermediate water duties shall be calculated as the quantity of water reasonably required to irrigate the crops historically grown in the farm unit and shall assume the maximum conservation consistent with prudent long-term farm management practices within areas of similar farming conditions,

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considering the time required to amortize conservation investments and financing costs.

2. Establish additional conservation requirements for all non-irrigation uses of groundwater to be achieved by the end of the second management period and may establish intermediate conservation requirements to be achieved at specified intervals during the second management period. For municipal uses, the program shall require additional reasonable reductions in per capita use to those required in the first management period and use of such other conservation measures as may be appropriate for individual users. For industrial uses including industrial uses within the exterior boundaries of the service area of a city, town, private water company or irrigation district, the program shall require the use of or establish conservation requirements based on the use of the latest commercially available conservation technology consistent with reasonable economic return.

3. Establish additional economically reasonable conservation requirements for the distribution of groundwater by cities, towns, private water companies and irrigation districts within their service areas.

4. Include a program for augmentation of the water supply of the active management area including incentives for artificial groundwater recharge.

5. In cooperation with the department of health services, include an assessment of groundwater quality in the active management area and any proposed program for groundwater quality protection. Any such program shall be submitted to the legislature for any necessary enabling legislation or coordination with existing programs of the department of health services.

....

§ 45-566. Management plan for third management period; guidelines

A. For the third management period, 2000 to 2010, ... [i]n each plan the director:

1. Shall establish a new irrigation water duty for each farm unit to be reached by the end of the third management period and may establish one or more intermediate water duties to be reached at specified intervals during the third management period. The irrigation water duty or intermediate water duties for the third management period shall be calculated as the

quantity of water reasonably required to irrigate the crops historically grown in the farm unit and shall assume the maximum conservation consistent with prudent long-term farm management practices within areas of similar farming conditions, considering the time required to amortize conservation investments and financing costs. In setting the irrigation water duty or intermediate water duties for the third management period, the director may adjust the highest twenty-five per cent of the water duties within the sub-basin to more clearly reflect the average of the middle fifty per cent of the water duties for the third management period, the director may adjust the highest twenty-five per cent of the water duties within the sub-basin to more clearly reflect the average of the middle fifty per cent of the water duties within the sub-basin.

2. Shall establish additional conservation requirements for all non-irrigation uses of groundwater to be achieved by the end of the third management period and may establish intermediate conservation requirements to be achieved at specified intervals during the third management period. For municipal uses, the program shall require additional reasonable reductions in per capita use to those required in the second management period and use of such other conservation measures as may be appropriate for individual users. For industrial uses including industrial uses within the exterior boundaries of the service area of a city, town, private water company or irrigation district, the program shall require the use of or establish conservation requirements based on the use of the latest commercially available conservation technology consistent with reasonable economic return.

3. Shall establish additional economically reasonable conservation requirements for the distribution of groundwater by cities, towns, private water companies and irrigation district within their service areas.

4. Shall include a program for additional augmentation of the water supply of the active management area, if feasible, including incentives for artificial groundwater recharge.

5. Shall, in cooperation with the department of health services, include an assessment of groundwater quality in the active management area and any proposed program for groundwater quality protection. Any such program shall be submitted to the legislature for any necessary enabling legislation or coordination with existing programs of the department of health services.

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6. May include a program for the purchase and retirement of grandfathered rights by the department to begin no earlier than January 1, 2006.

....

§ 45-567. Management plan for fourth management period; guidelines

A. For the fourth management period, 2010 to 2020, ... [t]he plans may include, where feasible:

1. A new irrigation water duty or intermediate water duties.

2. Additional conservation requirements for non-irrigation uses and intermediate conservation requirements.

3. Additional economically reasonable conservation requirements for the distribution of groundwater by cities, towns, private water companies and irrigation districts within their service areas.

4. A program for additional augmentation of the water supply of the active management area including incentives for artificial groundwater recharge.

5. In cooperation with the department of health services, an assessment of groundwater quality in the active management area and any proposed program for groundwater quality protection. Any such program shall be submitted to the legislature for any necessary enabling legislation or coordination with existing programs of the department of health services.

6. A program for purchase and retirement of grandfathered rights by the department.

....

California: This state has adopted a program to encourage water conservation projects relating to uses served by the Central Valley Project. State funding is dependent upon the following criteria:

§ 11970. Financing

The department may use Central Valley Project revenue bonds or other funds available for the purposes of the State Water Resources Development System to

finance, in whole or in part, water conservation programs and facilities that reduce demands by the sponsoring contractor for project water from the system for a period of time agreed to by the sponsoring contractor, and thereby increase the supply of project water available in the Sacramento-San Joaquin Delta for distribution to other contractors.

....

§ 11972. Eligibility of local projects for funding; criteria

A local water conservation project described in Section 11970 is eligible for funding pursuant to this article if, in the determination of the department, the project meets all of the following criteria:

(a) The project is engineeringly feasible and is capable of producing project water which is economically competitive with alternative new water supply sources.

(b) The construction and operation of the facilities and programs will not interfere with the requested deliveries of annual entitlement water to any contractor other than the sponsoring contractor.

(c) The project will not result in any greater annual charges to any contractor, other than the sponsoring contractor, than would have occurred with the construction at the same time of alternative new water supply sources constituting either reservoirs located north of the delta or off-aqueduct storage reservoirs located south or west of the delta designed to deliver water to the California Aqueduct.

§ 11973. Comparison of local project with alternative new supply sources for competitive basis

The department shall determine whether a local water conservation project described in Section 11970 is economically competitive by comparing, in an engineering and economic analysis, the local conservation project with alternative new water supply sources constituting either reservoirs located north of the delta or off-aqueduct storage reservoirs located south or west of the delta designed to supply water to the California Aqueduct. The analysis for the alternative new water supply sources shall use the average cost per acre-foot of yield in the latest studies made for those sources by the department and shall compare those facilities with the proposed local conservation project using commonly accepted engineering economics. In the

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case of a local conservation project to be funded in part by the department as part of the system and in part from other sources, the economic analysis shall be applied only to the portion to be funded by the department as a part of the system.

4. Necessary Legislation. Regional planning will require minimal changes to existing statutes. The statute setting out the duties of the ISC should be amended to affirmatively provide for the ISC to fund regional planning. Given that some regions may not correspond to existing political subdivisions, the statute that limits municipal and county water appropriations to a 40-year planning horizon should be amended to limit regional entities in the same manner. Such regional entities should be created in the initial joint powers agreement or subsequent amendments thereto.

5. Under Alternative A, all areas of the state are given the opportunity to engage in water-use planning. It is almost impossible to determine the exact cost of such planning, since the demand is not known, but the research team has determined that an initial appropriation of \$520,000 may be adequate to fund this alternative

6. As noted earlier, there are significant drawbacks to relying solely on regional planning to ensure adequate supplies into the future: (1) it does not ensure a water supply for more than 40 years; (2) it does not remove uncertainty over what is a permissible public welfare use, but merely alters how a challenge would be made. Rather than challenging the issuance of a permit by the State Engineer, the planning process or the resulting plan would have to be challenged.

7. Examples of Alternative A

In some areas of the state, jurisdictional uncertainty can preclude rational water planning in the absence of some agreement over how shared resources might be used. There are two types of jurisdictional uncertainty: (1) where a region is created overlying both declared and undeclared groundwater basins; and (2) where the state entities such as a local water conservancy district and one or more Indian tribes have jurisdiction over areas within a region.

Well-drafted joint powers agreements could obviate many of the legal issues that could arise without cooperative planning. The first step would be the identification of those entities to be parties to any agreement. Although this type of planning is well within the inherent authority of tribes and states, from the state's perspective, federal participation is desirable due to the federal trust responsibilities to tribes. In some instances, a region may include sub-units of tribal governments. The question whether the tribal government would be bound would depend upon tribal law. In most, if not all, instances, it would be desirable from the state's perspective to ensure that the tribal government, as well as its sub-units, is bound to the agreement.

Once the parties have been determined, the purposes of the plan should be stated. Where tribes are parties, it may be necessary to expressly state a more limited purpose; to ensure an adequate supply to meet specific uses such as domestic use, watering of livestock, agricultural use, industrial use. This would allow for planning without addressing sensitive issues over

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the full extent of an unadjudicated reserved right, or potential conflicts over legal concepts including the beneficial nature of a use.

The remainder of the agreement could designate an existing joint authority or create a joint authority to design and/or implement a planning process. In some instances, it might be preferable to use an existing process. In other cases, the parties may set out the process in the joint powers agreement.

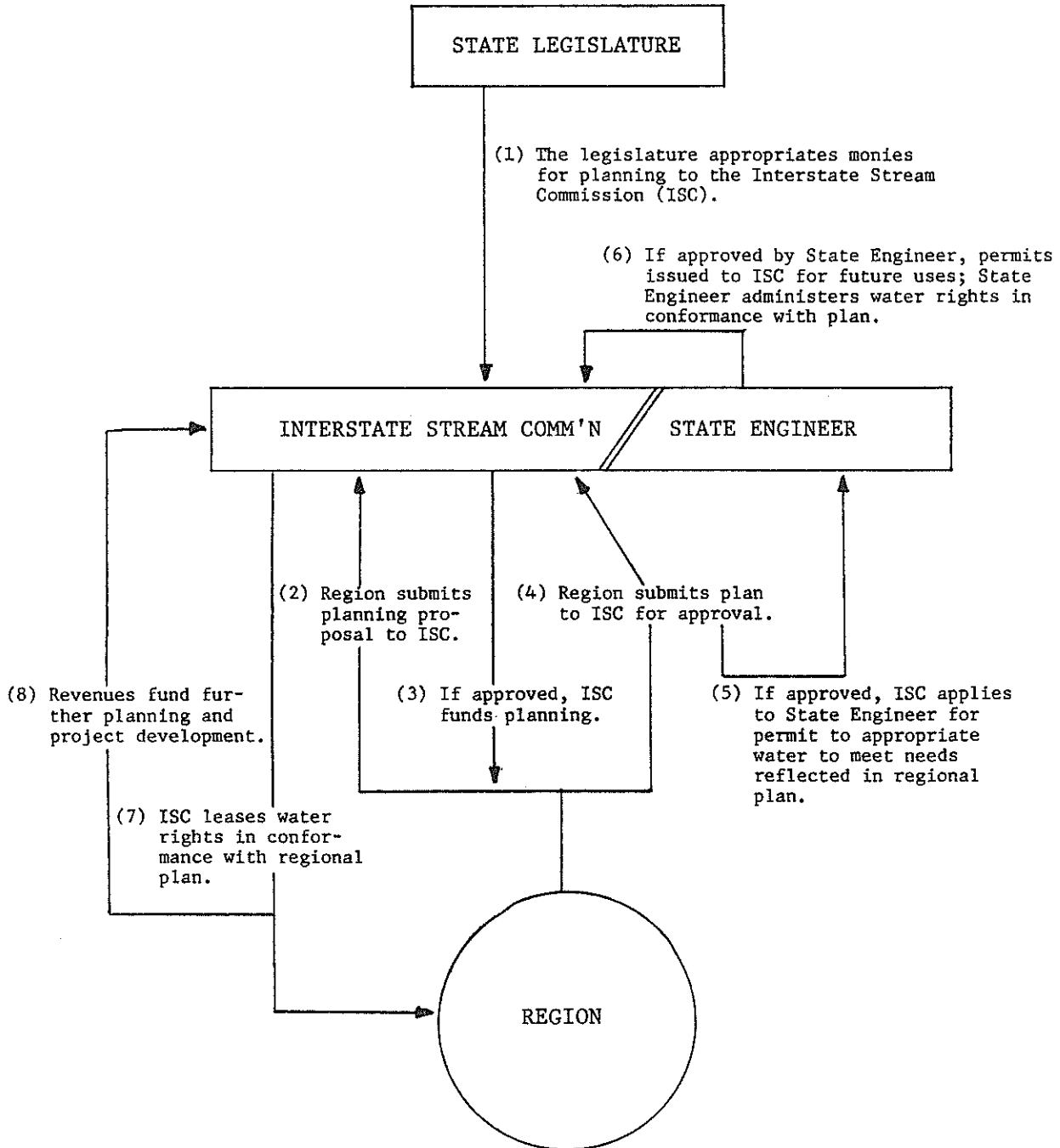
The next step is applying to the ISC for approval of the planning proposal if ISC funding is desired. If funding is approved, it is up to the region to complete the planning process. Once a plan has been agreed upon, it is submitted to the ISC for approval. In the case of agreements involving tribal governments, ISC approval would only constitute acceptance of the agreement by the state. For regions overlying non-declared basins, or only involving tribal parties, it is not clear that any further action would be necessary, since this would be outside the jurisdiction of the State Engineer. Where areas within regions are under the jurisdiction of the State Engineer, issuance of permits to users in those areas would be necessary. Thus, applications would have to be filed by those users and approved by the State Engineer.

8. One additional consideration should be noted. It is contemplated that regional planning will also take water quality into consideration when quantifying regional needs. For example, where water for present uses is contaminated or highly susceptible to contamination, it would be well within the state's duty to

protect the public welfare to have available an alternative supply of acceptable quality. This can only be accomplished through a planning process that forces a region to take a hard look at how it uses its water resources.

ALTERNATIVE B

State Appropriation of Unappropriated
Groundwater to Meet Future Needs



Notes to Alternative B

1. Alternative B requires the same water-use planning process outlined in Alternative A, with only one exception: rather than limiting planning to a 40-year time horizon, regions would be required to look toward an 80-year time horizon, the maximum period possible under the New Mexico law of prior appropriation that does not contemplate speculative uses as beneficial.

2. Alternative B would not require any changes in the criteria for funding planning proposals, but might necessitate different or additional criteria for plan approval. At a minimum, it would be important that (1) the region show that future uses are sufficiently certain to support an application to appropriate groundwater, and (2) the region identify source(s) of water to be appropriated by the ISC, in addition to the criteria for approval of plans under Alternative A.

3. This alternative could also allow the ISC to engage in water-use leasing where there is no conflict with the regional plan. Rather than relying solely on legislative appropriations for funding the program, this alternative could create a fund from leasing revenues to fund further planning and project development.

4. Necessary Legislation

a. The research team has concluded that this alternative will require some alteration of the present relationship between the ISC and the State Engineer's office. Existing statutes would have to be amended to limit the State Engineer's participation in ISC decision-making by providing that the State

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Engineer shall not vote when a regional plan is submitted for approval and when the ISC is acting to appropriate or lease water. These changes are necessary to maintain a strict separation between the regulatory activities of the State Engineer and the creation of property interests or other proprietary activities of the ISC.

b. This alternative will also require certain changes in the statute that sets out the duties of the ISC in addition to that necessary under Alternative A; specifically, the statute should affirmatively state that the ISC can appropriate and lease water and that it is not limited to a 4-year time horizon when appropriating water.

5. The costs of this alternative are much harder to estimate. Unless unappropriated groundwater is available and regional plans document need of it in the future, the activities of the ISC and the State Engineer would not require costs in addition to those set out in Alternative A. Assuming that unappropriated groundwater is available and needed as reflected in regional plans, the ISC would need additional technical and support staff over and above that required under Alternative A. This would raise the estimated cost by roughly \$30,000, for a total estimated cost of \$550,000.

6. There are certain drawbacks to this approach. The first is that it may result in some regions having an assured supply for 80 years (where unappropriated groundwater is available and need is shown) and other regions limited to a 40-year supply at best. The second drawback to allowing the state only

to appropriate and not to purchase water rights is that it would preclude the state from competing in the marketplace when private sales might diminish the supply needed in a region. The third problem with this limited approach is that significant quantities of stream-related groundwater in storage could not be put to use unless the state held surface water rights to be retired once its uses began to have an effect on surface water flows.

7. Examples of Alternative B

Assume three communities overlying the same aquifer formed a region and developed a water-use plan. The plan shows that future demand will surpass known supply (existing water rights) in 20 years. At the same time, there is presently unappropriated water that could be developed to meet the future demand, but the three communities do not have the financial capability to develop the unappropriated water. Under Alternative B, once the regional plan is approved, the Interstate Stream Commission would apply to the State Engineer for permits to appropriate the needed, but unappropriated, water. The state could develop the resource for the region and, assuming there was surplus water, could lease the water for new uses. The income from leasing could be used to offset the costs of development. ISC construction and operation of Ute Dam is another example of Alternative B. A detailed description of how the ISC developed the project can be found in Chapter 12 of the first state appropriation study.

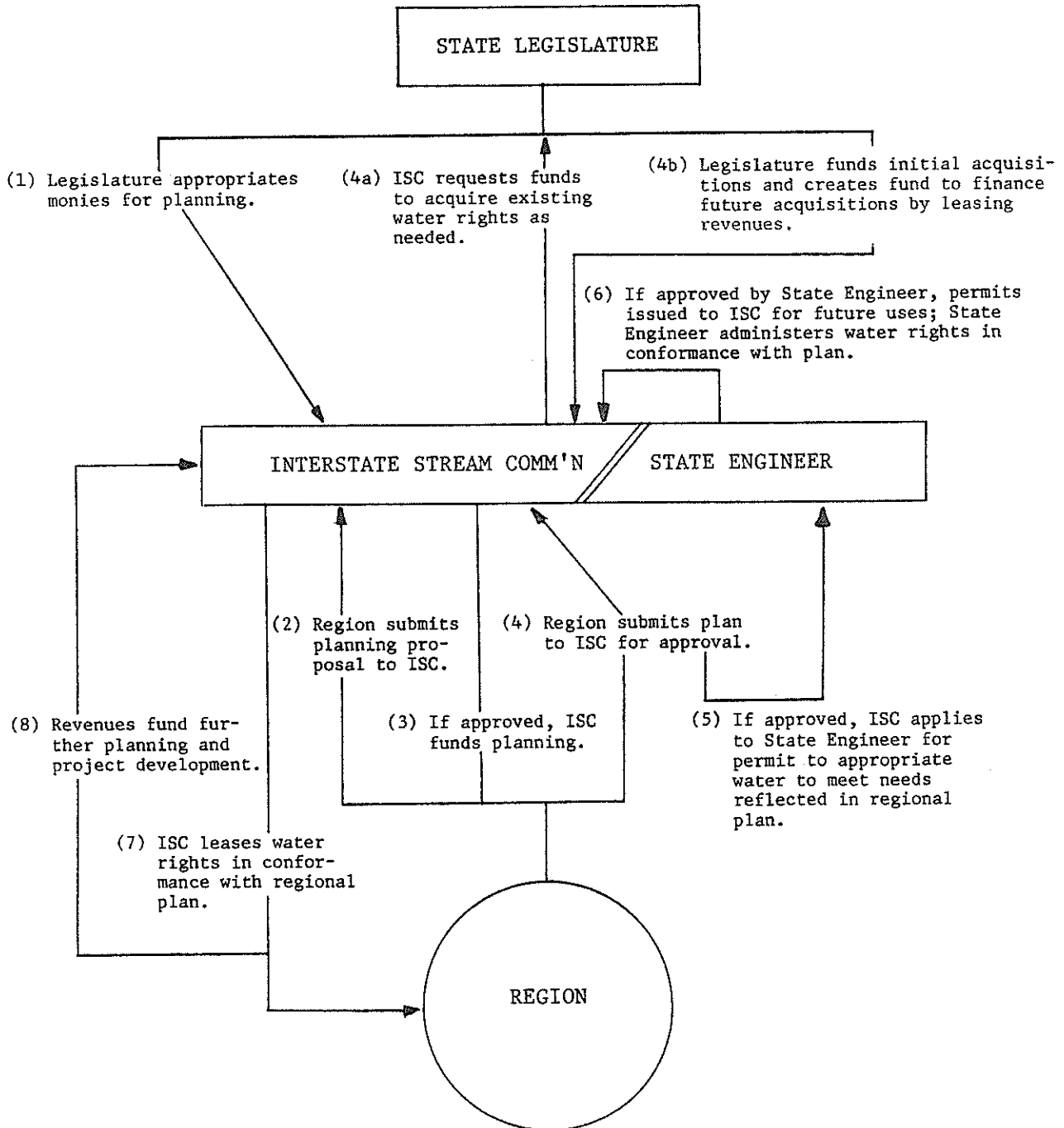
If a region includes both state and tribal governmental entities, some modification would probably be necessary. A tribe

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and the state could consider the water rights as jointly held property or define their separate property in some other way.

ALTERNATIVE C

State Appropriation of Unappropriated Groundwater
and Acquisition of Existing Rights to Meet Future Needs



Notes to Alternative C

1. Alternative C contemplates full ISC participation in the water market, including the acquisition of existing water rights in the market (as distinguished from acquisition by condemnation), to ensure an adequate supply for all participating regions as reflected in 80-year plans.

2. It is contemplated that the legislature would create a fund for the acquisition of existing water rights consisting of an initial appropriation and any revenues derived from the leasing of ISC water rights.

3. Necessary Legislation. In addition to those changes required under Alternative B, the ISC should be given the express authority to acquire existing water rights. Legislation should also set up the fund for monies to acquire existing water rights.

4. Unlike Alternative B, which only applies to regions where unappropriated groundwater exists, Alternative C contemplates actions applicable to all regions. It also contemplates significant additional activities and this translates into greater costs, including additional technical and support staff, realty specialists, and an extensive travel budget. While any attempt to pinpoint exact costs at this time would be futile, the research team has concluded that the estimated cost of Alternative C would be \$570,000.

7. Examples of Alternative C

Assume that three communities rely on a nontributary aquifer for all water use. The aquifer is saturated to a depth greater than one thousand feet. It is considered to be fully

appropriated; additional users would increase the depth to water, thereby increasing pumping costs, making present uses economically unfeasible. At the same time, the region is in an almost untenable position; its existing economic base cannot be met out of the presently available supply without adversely affecting existing property rights in water. Without some solution, the region will lose its economic base before alternative uses are in place and the communities will become modern ghost towns.

Assume further that the communities that rely on the aquifer have developed a regional water plan that shows that future needs can only be met by developing that portion of the aquifer below the feasible pumping depth for individual users. Alternative B would not, by itself, offer a solution to this problem. Even if the ISC were able to appropriate the water, it could not be developed due to the impact on existing water rights. Under this alternative, though, the ISC could offer to purchase existing rights, thereby making water available for alternative uses as needed in the future. Eventually, the state could develop the deeper aquifer without affecting the property rights of individual users. For the present, existing uses could be maintained by leasing purchased rights to their former owners at a nominal cost.

Alternative C does not obviate the need for a transition in the economic base of the region. It prevents the harsh effect of forcing a region into an economic depression and related population loss before an alternative economic base can be created.

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STATE APPROPRIATION: THE COST OF FUNDING THE PROPOSAL STAGE AND FACTORS AFFECTING COST IN IMPLEMENTATION

Chapter Four sets out three alternatives for the proposal-solicitation stage of state appropriation ranging from minimal water-use planning to full-scale participation by the state in regional water markets. There are differences in the costs of implementing each alternative.

One common element of the three alternatives is an initial investment from the general fund to pay for development of regional water use plans. Other cost elements of a particular alternative reflect the different tasks involved. For example, Alternative B calls for state appropriation of unappropriated groundwater. Obviously, this would only occur in areas having unappropriated groundwater. Alternative C, on the other hand, provides for state purchase of water rights. Unlike Alternative B, this could involve every region of the state. Accordingly, cost estimates for Alternatives B and C reflect staff increases over Alternative A. These costs are discussed below at page 132. The bulk of this chapter, however, is devoted to illustration of the variability of costs in the implementation stage.

A. Introduction and Explanation of Concepts

One of the most fundamental concepts in economics is that of opportunity cost: the cost of one alternative or program is the loss of the next best use of the scarce resources in an alternative activity that must be foregone. This concept is useful

because it takes attention away from measuring dollar costs and focuses on what must be given up in order to pursue a course of action. While it would be difficult to pinpoint the commodity or projects in the private and public sectors that would be foregone if a state appropriation program is implemented, it is productive to discuss a program from this standpoint.

The activities that a state appropriation program would displace depend, in large part, on how the program is financed. To the extent that it is supported by tax revenues from the general fund, such a program would displace consumption and investment in the private sector and most likely this burden would be widely distributed. To the extent that a program displaced existing state-funded programs, it would affect the beneficiaries of those programs.

A state appropriation program would ultimately mean funding the development of projects for physical development of the water supply. Ideally, the ultimate water users would cover all costs of each project voluntarily because the water would be worth more to them than its cost and the project would be more attractive than other alternatives. However, some of these projects may require large amounts of capital to complete and this would have to be raised in capital markets. It may make a difference if the investment funds are raised from within the state or from international and national markets. One school of thought holds that capital markets--wherein savers, borrowers and financial institutions come together--are national or even international in scope and that political boundaries are invisible. Under this

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view, it makes no difference if the funds are raised from in-state individuals and institutions or those from out-of-state. In the national or world capital markets, funds flow to those projects and financial instruments offering the highest rate of return for a certain level of risk. Relative to total savings and investment, New Mexico water projects would be insignificant, having no effect on interest rates or the availability of capital for any activity which could meet the competitive market tests of return and risk. Therefore, under this view the water program would not displace investment in other projects in the state.

A second and more realistic view holds that political boundaries do constrain the flows of savings and investment, and to a certain extent, capital markets are segmented. State and federal regulations may inhibit the flow of funds. The cost of acquiring information concerning risk and return for activities taking place in other locations also may segment markets. Under this view, raising capital in New Mexico could raise in-state borrowing costs and reduce the availability of funds for other projects. Thus, the real cost of the project might equal or possibly exceed its dollar financing cost.

A final issue is that an uncertain future means that the exact timing of state appropriation of groundwater cannot be optimized. If intervention is too late, the water will have been appropriated by others, perhaps to the detriment of the state. Once appropriated, the control of this resource may be lost forever.

B. Estimating the Dollar Costs of Implementation of State Appropriation: There Is No Typical Water Project

The previous discussion clearly shows that the largest share of the costs of implementing state appropriation will be the capital necessary for water projects. Since these costs will not occur in the near term, their present value equivalents are considerably less and highly uncertain.¹ The near-term costs of a program would consist of administration, information acquisition and planning.

Efforts to estimate the project costs for an interbasin water transfer project provide an excellent beginning point for this chapter, because these projects inevitably deal with the uncertainties characteristic of any large construction project. In what follows we briefly sketch the major components of direct and indirect² costs for such projects and, when appropriate, comment on the uncertainties associated with their estimation.

The costs of water projects may depend on a large number of factors. Obviously, the distance over which water is to be transferred will substantially affect costs. Also, geographic variables (e.g., elevation and general terrain) can be important cost determinants. Pumping water uphill requires more energy and

¹This is true in part because of the variations in the discount rate over time.

²Much of the following discussions draws on analyses in Chapter 10 of E. Kuiper, Water Resources Project Economics, Butterworth: London & Co., Ltd., 1971.

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is, therefore, more costly; likewise, construction of canals through rough terrain can be much more difficult and costly than the same canals built through "normal" terrain. Kuiper has estimated that the existence of "difficult" as opposed to "easy" geographic conditions can result in average capital cost escalations by a factor of two to five times for pipelines and canals, respectively.³ All of these factors could be involved in a state appropriation project in New Mexico.

Despite the number of variable factors involved, most projects have certain characteristics in common. Water must be moved through some type of conveyance system from an initial point of diversion to a point of delivery, where it can be distributed to its final consumptive users.⁴ In what follows, we examine some of the specific cost elements that have to be considered in a "typical" water transport system. Water supply systems are comprised of acquisition facilities, treatment plants (where needed), and transmission systems. Each of these cost components is briefly discussed below.

³Based on a total discharge of 10,000 cubic feet per second (approximately 724,000 acre-feet per year). For greater discharges, the cost differences can be even larger. See id. at 181.

⁴Final distribution costs will not be considered here. An excellent discussion regarding the costs of distributing water to a single urban area is given, however, in Clark & Stevie, "A Water Supply Cost Model Incorporating Spatial Variables," Land Economics, 57(1), 18-32, Feb. 1981.

1. Acquisition

Acquisition involves either tapping a source of water that is sufficient in quantity to satisfy present and potential future demands, or to convert an intermittent source into a continuous supply by storing surplus water for use during periods of low flows.⁵ In the case of surface water diversion, dam construction costs are usually the largest expenditure involved. No such project is contemplated in New Mexico. When groundwater is used, on the other hand, large well development costs may be incurred. Obtaining legal rights-of-way to acquisition facilities is another potential cost element at this stage. (Right-of-way costs are also involved in the transmission stage, for pipelines, electric transmission lines and access roads.)

2. Treatment

If the water to be transferred is not of satisfactory quality at the point of acquisition (this is more often a problem with surface water than groundwater), treatment is required before the water can be used for consumption. The two main elements making up treatment costs are capital construction costs of the facility and operating and maintenance costs. With relatively large construction costs, the average costs associated with treatment

⁵The following discussion of water supply economics is based on concepts presented in Clark & Stevie, id., and J. Hernandez et al., Evaluation of a Municipal Water Supply for the Silver City Area (report prepared for the Town of Silver City and the New Mexico Interstate Stream Commission, 1984).

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facilities are typically assumed to decline as the quantity of service provided increases. Treatment steps can include settlement (to remove grit and turbidity), filtering, chlorination, and disinfecting (of polluted water), among other things. Locating the treatment plant at the initial diversion site allows for the use of potable water all along the transport route.

3. Transport

Most conveyance systems will consist of a series of pumping stations connected by high pressure pipelines for uphill portions and gravity transmission lines on downhill portions. The major costs involved, therefore, are construction and right-of-way costs for pumping stations and pipelines, energy costs for the pumping, and annual operating and maintenance costs for the system. Specific item costs are of course dependent upon the exact nature of the water project. Transport costs are exemplified by the Silver City project,⁶ parts of which are given in Table 1. This project is no longer an "active" project given its rejection on the basis of costs. Examination of the transport cost components for the Silver City project given in Table 1 yields the following notable observations.

⁶See Hernandez, et al., supra note 5.

TABLE 1

**Cost Summary for Silver City Project
High Transmission (66 cfs) System - 1981 Dollars**

<u>Cost Element</u>	<u>Number of Units</u>	<u>Unit Cost (\$)</u>	<u>Total Cost (\$1000)</u>
1) Land and Right-of-Way			
a. Dam	6 acres	\$500/acre	30
b. Pumping Stations (4)	4 acres	1250/acre	5
c. Pipelines	16 miles	1000/mile	16
d. Off-Stream Reservoir	100 acres	1250/acre	125
2) Diversion Dam	1	\$841,000	841
3) Pipelines			
48" diam. pressure line	23,600 ft	PL equation*	6,962
48" diam. gravity line	61,200 ft	GL equation	9,853
4) Pumping Station #1	- TDH 450 ft -	PS equation	3,244
#2	486		3,444
#3	420		3,078
#4	152		1,594
5) Off-Stream Reservoir			546
6) Service Roads	10 miles	\$20,000/mi.	200
7) Power and Communications			1,500
8) Mobilization (5% of Construction Subtotal)			1,572
Sub-total: Total Field Costs			\$33,010
9) Construction Costs (25% of Field Costs)			8,253
10) Interest During Construction (r = 3.342%)			2,758
TOTAL COSTS			\$44,021

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TABLE 1 (Cont'd)

Annualized Costs

a) Annulized Construction Costs n = 30 yrs, r = 3.342%	2,346
b) Annual Operating, Maintenance and Replacement (5% of 2,3,4,5,6, and 7)	1,563
c) Power (\$0.11 per kwh)	<u>1,742</u>
TOTAL ANNUAL COST (\$1000)	<u>\$5,651</u>

*Specific cost equations were used to estimate pipeline (both pressure and gravity line) and pumping station costs. The pipeline cost equations are given as follows: $PL = 7.8D - 79$, where PL is the estimated in-place cost (in 1981 dollars) per foot of pressure pipe of diameter D (in inches); $GL = 3.95D - 28.5$, where GL is the estimated cost (in 1981 dollars) per foot of gravity line of diameter D (in inches), where water flows under the force of gravity. To estimate pumping costs the following equation is used: $PS = 11.4Q + 9.19 \times 10^{-2} QH - 1.21 \times 10^{-4} Q^2H$, where PS = cost in 1000s of 1981 dollars for a pumping station to lift a volume of water Q (cu.ft. per sec.) against a total dynamic head of H feet where the efficiency of the pumping unit is 0.78.

Source: Hernandez, J.W., W.G. Hines and F.D. Trauger, "Evaluation of a Municipal Water Supply for the Silver City Area Using Groundwater Recharge of Water from Conner Reservoir on the Gila River" Report prepared for Town of Silver City and New Mexico Interstate Stream Commission, August 1984, Table IV-1, pp.140-141.

- (1) Direct construction costs are typically calculated by taking quantities from preliminary engineering designs, and multiplying by appropriate unit prices.
- (2) Cost analyses are made using annual project costs. Capital costs alone do not provide a meaningful basis with which to compare alternate projects, as they ignore certain annual costs which can contribute a significant amount to total costs.
- (3) There are a number of indirect cost elements involved in water transfer projects. These include mobilization, contingency and engineering costs, interest charges, and a number of often neglected, but highly relevant, opportunity costs,⁷ each of which can make up a substantial portion of total project costs.

Aside from the direct costs described above, a number of indirect costs are typically relevant for a water transfer project. One example of such indirect costs⁸ is seen in the al-

⁷As noted in the text, "opportunity costs" are the values foregone when a resource such as water is put to one particular use.

⁸We acknowledge the potential importance of other indirect costs, such as opportunity costs (mentioned earlier) and "externality" costs. These classes of indirect costs are discussed at some length in C. Howe & W. Easter, Interbasin Transfers of Water: Economic Issues and Impacts, Johns Hopkins Press, Baltimore, 1971, Chapters 4 and 5; and in R. Haveman & J. Krutilla, Unemployment, Idle Capacity and the Evaluation of Public Expenditures: National and Regional Analysis, Johns Hopkins Press, Baltimore, 1968. Extensions of these concepts to issues concerning environmental quality begin with the pioneering work by Krutilla, "Conservation Reconsidered," American Economic Review, 47, 777-786, Sept. 1967.

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lowance that is usually made for "contingencies," which represents expenditures that are possible but not certain, or perhaps costs that may come up but are as yet unforeseen,⁹ Reflecting the preliminary nature of most project designs and the uncertainty of future cost trends, the allowance for contingencies can be as high as 20 percent of the total direct capital costs (see Table 1 above).

Engineering costs will typically be included as an indirect cost item, with allowances ranging up to 15 percent of the direct capital costs in some studies. Involved here are expenditures associated with engineering activities such as preliminary field studies--(groundwater hydrologists are needed to review previous reports and to examine groundwater availability and quality in the study area, for example), consulting services, detailed design, and final supervision of the construction of the project itself. It has been pointed out that advance cost estimates of engineering projects are at best intelligent guesses.¹⁰ This is due in part to the preliminary nature of the design on which cost estimates are based, but mostly to the difficulties of guessing at the intensity of competition among contractors a few years, or even one year, in advance.

⁹See Chapter 5 in E. Kuiper, 1971, supra note 2.

¹⁰Id.

For example, when there is not enough manpower and equipment to take care of all the necessary construction, the final costs of projects may exceed the estimated costs by as much as 50 percent. On the other hand, if contractors are not working, and are desperate to keep their equipment and key personnel from periods of prolonged idleness, projects may be built for up to 50 percent less than originally estimated. Whereas in the first case, the contractor may earn substantial profits due to the nature of the competitive environment, in the second case the contractor may be willing to undertake the job "at cost," in order to stay alive as a firm and retain his trained personnel. Obviously, in the presence of such uncertainties, it is somewhat pointless to expect preliminary cost estimates to exhibit a great deal of precision.

Still another indirect cost for water transfer projects results from the capitalization process. In addition to the operating and maintenance costs, an important annual cost item is the interest payment made on funds borrowed at the beginning of the project to finance construction. The capitalization of this initial cost is typically accomplished over a specific time period, determined by the project's estimated useful life, and at a certain discount rate, reflecting the time value of borrowed money. In many cases, a 50- to 100-year useful life is assumed. This choice may be somewhat arbitrary; however, such choices are not terribly important as far as annualized costs are concerned. For example, a water development project involving an initial \$4 million construction cost, with a useful life of 50 years and financed at a 10 percent rate of interest, will have to bear an

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annual capitalized cost of around \$403,440. The annual cost of the same project spread over a life of 100 years will be about \$400,030, a difference of less than one percent. Annual costs are, therefore, not very sensitive to changes in the project's useful life, as the present value of money received or paid for in the future (in this case between years 50 and 100) is quite low. In view of all the other uncertainties inherent in cost estimating, this particular item (choice of the project's useful life) can become relatively insignificant.

Related to the above are the problems associated with the choice of a discount rate. Costs may be quite sensitive to one's choice for such a rate and, regrettably, there exists little in the way of objective guidance for the choice of an "appropriate" rate of discount for public projects. Thus, we can do little more at this juncture than note the existence of this class of problems.

In sum, the difficulties inherent in making precise project cost estimates are substantial. A number of unforeseeable factors--future interest rates, the competitive climate between contractors, and even the general state of the economy--all contribute to the uncertainty. The best that should be hoped for initially is some sort of "ballpark" figure, where at least the order of magnitude of expected future costs is accurate.

D. Costs for Western Water Projects

In this section, project costs for several existing and planned water transfers are examined. Obviously, no one plan can be chosen as a "typical" water project, since there are such a

large number of varying factors involved. The purpose here is simply to provide an approximate cost range for such projects; of course, the determination of precise costs for any future project is subject to all of the caveats discussed above. In each of the projects reported below, annualized cost figures have been converted to a common scale (1983 dollars) with an interest rate of 10 percent and expected project life of 50 years. Costs per acre-foot and cost per acre-foot per mile are reported, where possible, for each case.

1. California State Water Project

This project was designed to deliver 4.23 million acre-feet of water per year to the San Joaquin Valley and the Southern Coastal Area, approximately 150 miles and 425 miles, respectively. In addition, the Southern Coastal deliveries involved crossing the Tehachapi Mountains. The original total capital cost estimate was \$2.8 billion, with annual costs ranging from:

\$33 per acre-foot	(1967 dollars)
\$98	(1983 dollars)

for the San Joaquin water to:

\$120 per acre-foot	(1967 dollars)
\$357	(1983 dollars)

for the Southern California deliveries. Cost per acre-foot per-mile calculations yield a range of:

\$0.22 - \$0.28	(1967 dollars)
\$0.66 - \$0.84	(1983 dollars)

2. Oklahoma Comprehensive Water Plan

As part of this plan, a proposal was initiated for a water conveyance system, which would divert surplus flows at Lake Eufaula on the Canadian River and at Robert S.D. Kerr Reservoir on

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the Arkansas River, both in eastern Oklahoma, and transport the water for use in North Central and Northwestern Oklahoma. The system was to deliver about 855,000 acre-feet per year at an estimated construction cost (1978 dollars) of \$5.3 billion. The annual cost of delivered water is \$625 per acre-foot, or \$2.50 per acre-foot per mile, assuming that the water is moved over roughly 250 miles.

3. High Plains Importation Studies

One of the objectives of the High Plains-Ogallala Aquifer study was to develop plans to increase water supplies in the High Plains area. In keeping with this objective, the U.S. Army Corps of Engineers presented a cost analysis of potential importation sources to the area. Four different water transport routes were examined, each of which is presented below. The cost figures given here refer only to the initial diversion and movement of water to a terminal storage point. Subsequent distribution is not considered. Obviously, the cost of distributing the imported water to its ultimate users (mostly farmers in all likelihood) can vary tremendously depending on the locations and elevations of the users relative to the terminal storage sites. (The Corps of Engineer's project estimates are summarized and cited below in Table 2.)

The following routes were proposed: Route A called for the movement of water from the Fort Randall area of South Dakota, southwesterly across Nebraska to terminal storage near Bonny Reservoir in eastern Colorado. Route B involved transporting water from St. Joseph, Missouri, southwesterly through Kansas with

TABLE 2

Estimated Water Import Costs to the High Plains

<u>Route</u>	<u>Size of Water Transfer</u>	<u>Total Length of Route</u>	<u>Elevation Difference</u>	<u>Total Costs Construction & Interest</u>
A	1.91	813	2,400	5.4
	3.40	813	2,400	8.9
B	1.62	376	1,745	3.6
	3.40	376	1,745	6.5
C	1.26	611	3,280	7.0
	7.51	1,135	3,600	27.8
D	1.55	568	2,610	5.3
	8.68	860	2,725	20.6

<u>Route</u>	<u>Annual Cost per AF</u>	<u>Annual Cost per AF per Mile</u>
A	\$434 - \$469	\$ 0.58 - 0.53
B	317 - 363	0.84 - 0.98
C	614 - 921	0.54 - 1.51
D	393 - 567	0.46 - 0.99

Source: High Plains Study Council, 1982, Op. Cit.

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terminal storage near Ness City, Kansas. An alternate route from the same source to final storage in Oberlin, Kansas, was also planned. Route C called for the delivery of water from Clarendon and Camden, Arkansas, and Tatum, Texas, westward through Arkansas and Texas, then westward through Oklahoma to terminal storage in Canadian Lake and Lake Meredith, Texas, and Optima Lake, Oklahoma. Route D involved water transfers from Clarendon and Pine Bluff, Arkansas, southwesterly across Arkansas to northeast Texas, then westward to terminal storage at Blanco Canyon in the Southern High Plains of Texas.

The cost figures in Table 2 point out several aspects regarding the economics of water transfers. First, the elevation difference over which water must be transported seems to be directly related to the cost of delivery per acre-foot. Moving water to higher altitudes obviously requires more extensive pumping facilities and greater amounts of energy. Also, there appear to be general economies of scale in the construction of water transport, with average costs declining as the size of the water transfer grows.

4. The El Paso Plan

As a part of the analysis of water supplies for El Paso, this study concluded that if the City had to obtain its water supply from within Texas, it would be necessary to import water from considerable distances. Costs of building pipeline and operating pumping stations were estimated to be about \$1.84 per thousand gallons (1983 dollars) or \$602.30 per acre-foot. Over the projected distance of 100-150 miles, the per acre-foot per-

mile cost would range between \$4 and \$6. Transfers of water from shorter distances (water from New Mexico) involved a delivered cost in the neighborhood of \$0.66 per thousand gallons, or \$220 per acre-foot.

5. Four Corners Plan

This plan was designed to deliver up to 42,260 acre-feet of San Juan River water to 312 Navajo Indian communities and to the city of Gallup, New Mexico. To accomplish this, 42,720 acre-feet would be diverted from the river at Farmington into a closed delivery system consisting of a water treatment plant, pipelines, pumping plants, and terminal storage tanks. Total construction costs for the project were estimated to be \$302,622,000. With annual costs for project operation, maintenance, replacement, and energy estimated to be \$5,657,000 (which includes a \$16 per acre-foot charge for obtaining water from Navajo Reservoir), the total annual costs of the project equal \$846.90 per acre-foot (1981 dollars) or \$3.33 per acre-foot per mile over the transmission distance of 255 miles. It can be noted that specific features designed to preserve and enhance the environment, as well as provide for fish and wildlife needs, were included in the plan. Among other things, the plan provided \$100,000 to investigate the endangered Colorado squawfish and its habitat requirements, specific efforts to avoid the threatened mesa verde cactus during pipeline construction and the provision of a fish ladder in the diversion structure. Additional measures were planned to be taken during construction to minimize general environmental impacts.

E. Summary and Conclusion Concerning Water Project Costs

It is impossible to generalize about the costs of water projects, as is made apparent by the summary of costs for projects discussed below in Table 3. With the many variable factors affecting project design (geographical diversity--terrain, elevation and distance--power costs, and power recovery opportunities), it is obviously difficult to be specific about the direct or indirect costs involved. As shown in the text and in Table 3, cost estimates provided by the various studies discussed above range from \$98 per acre-foot for San Joaquin deliveries of the California State Water Project to \$921 per acre-foot for Route C of the High Plains Importation Study. Costs per acre-foot per mile vary from \$2.50 for the Oklahoma Comprehensive Plan to \$4-6 per acre-foot per mile for the El Paso project.

As noted above, at a minimum the following variables will affect project costs:

- (1) Water Quality: Will the water have to be treated?
- (2) Lift Costs: What will be the energy costs necessary to take the water out of the ground?
- (3) Transportation Costs: Transportation Costs are very sensitive to the distances involved in the water project, with substantial economies of scale in operation; that is, the longer the distance covered, the lower the cost per acre-foot per mile of moving water.
- (4) Cost Tradeoffs: There are always cost tradeoffs to be considered in any project design. For example, to design a pump station and pipeline for a given discharge,

TABLE 3

STUDY OF WATER PROJECT TRANSPORTATION COSTS

<u>PROJECT</u>	<u>ANNUAL VOLUMN OF WATER TRANSFERRED (000 acre feet)</u>	<u>DISTANCE (miles)</u>	<u>COST PER AF PER MILE (1983 \$)</u>
Cal. State	4,230	150 425	.22 .84
Okla Compr. Plan	855	250	2.50
High Plains Import			
Plan A	1,900-3,400	813	.53 - .58
Plan B	1,600-3,400	376	.84 - .98
Plan C	1,300-7,500	611-1135	.54 - 1.51
Plan D	1,600-8,700	568-860	.46 - .99
El Paso	500 (approx)	100-150	4.00 - 6.00
Four Corners	42.3	255	3.33

Source: Individual studies cited in text.

one must consider the variable and dependent elements of the capacity of the pump and the size of the pipeline. If one is larger, then the other can be smaller, and vice-versa. Determining the least-costly combination can present an interesting exercise in hydrologic and economic analysis. A specific example is seen in the Silver City Project, where the cited High Transmission System (Plan 2) yielded much higher per acre-foot costs than an alternative, Low Transmission Plan (Plan 1). However, construction of the lower capacity conveyance system would reduce the possibility of lowering reservoir evaporation losses. Plan 2, with its higher pumping rate, could minimize the need for the multi-year carryover storage and reduce the necessary reservoir size (and cost). To select between these two alternatives one should consider not only direct costs but also certain hydrologic information pertaining to the functional relationships between evaporative losses and the capacity and cost of each conveyance system.

- (5) Interest Rates Used for Capitalization: Annual cost estimates are extremely sensitive to the interest rate used for capitalization. As an example, consider that the total capital cost of the California State Water Plan of \$2.8 billion (1967 dollars) implied an average annual capital cost of \$35 per acre-foot, assuming a 50-year life and a 5 percent interest rate. If a 10 percent rate of interest is used, however, the annual

capital cost rises to \$64.44 per acre foot, an increase of over 80 percent.

- (6) Economies of Scale: There are substantial economies of scale to be realized in the construction of water transfer systems. There are relatively large fixed costs involved in the movement of even small amounts of water, but greater economies can be reached with larger diversions from the same source. The High Plains Importation Study cost estimates pointed this out particularly well, with each of the four proposed routes showing lower annual per acre-foot costs with larger water transfers. The annual costs per acre-foot of Route A, for example, amounted to \$468.66 for the yearly movement of 1.91 million acre-feet over 813 miles with an elevation difference of 2400 feet (up-hill). Moving 3.4 million acre-feet over the same route resulted in annual per acre-foot costs of only \$433.91. Similarly, costs calculated on a per acre-foot per mile basis revealed substantial economies to be gained over longer distances as well.
- (7) Power Recovery Potential: The extent to which power recovery is possible (by harnessing the energy of the moving water) can be an important factor in the determination of final project costs.

The foregoing discussion should amply serve to illustrate that there is no "typical water project." The cost of such projects varies directly, with numerous variables. Therefore, it is

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impossible to predict that New Mexico's water needs could be met to the year 2040 by expending X dollars on state appropriation. Rather, what can be said is that even the simplest project imaginable, insofar as it requires the extraction and development of the water resource, may be expensive. In our previous report, we illustrated the range of potential transportation costs and concluded that no project built or anticipated to be built can be guaranteed to be inexpensive. Rather, the price range for a project could vary from \$350,000 to implement a plan for appropriating water for a small rural community to \$20,000,000 to develop, treat and transport that same water over any substantial distance.

For this reason, the study team has not been able to come up with even an estimate of the ultimate cost of complete implementation of state appropriation. The foolhardiness and possible misleading nature of such an effort is not the only reason the study team has not developed such a number. There is an even more basic reason, and that is that developing such a hypothetical number would presume that every region in the state would elect to participate in a program of state appropriation. This assumption would undercut completely a basic tenet of the study, which is that the regions themselves should identify their own demand for water resources with the aid of the state grants or loans. Since it is impossible to identify that demand until the proposal-solicitation phase is complete and areas of the state have opted to participate and thereby defined their level of need, we cannot estimate the expense that they, along with the

state as a whole, would have to bear to meet that need. In summary, if the entire state elected today to participate in state appropriation and sought immediately to develop all of its water resources irrespective of demand, the costs could run into the hundreds of millions of dollars. This scenario is unlikely for two reasons: (1) it assumes development of useless infrastructures for water development before it is needed, and (2) it assumes the legislature would fund such an effort.

If, however, we assume that those projects are only developed in areas that have a present unmet demand or anticipate a scarcity within the next twenty years, a review of the previous report suggests that the costs could be met with an expenditure of much less.

F. Costs Associated with the Proposal-Solicitation Stage

In developing this section, the study team was mindful of the axiom that if there is government money to be had, someone will appear to spend it. While not quite as inevitable as the scientific proposition that "nature abhors a vacuum," the axiom comes close. For this reason, it was a difficult task to determine how much money should be allocated for this critical stage.

On the one hand, we wished to ensure that the regions have enough money to encourage them to participate in a meaningful way and be able to present a proposal to the Commission. On the other hand, we were of the mind that areas should put up some form of contribution and match to ensure that their interest was bonafide. The team thought first about attempting to allocate the money to regions by population and speculation concerning

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future water demand, the extent of unappropriated groundwater and expressed interest. Our conclusion was that this methodology might foreclose applications from areas that either have been overlooked or have developed their own creative solutions that have not thus far been considered. The study team, therefore, rejected this option. Rather, the team concluded that the state breaks down into eight hydrologic regions as indicated in Figure 1. It also concluded that \$50,000 should be allocated to each region, resulting in a total amount for proposals of \$400,000. While this amount is quite insufficient to meet the perceived needs in some of the regions, the competition for this money in terms of local match, commitment to conservation and willingness to put out the effort to obtain it may well serve as a preliminary screening process for the elimination of frivolous proposals. Given the tremendous anticipated shortfall in revenues in New Mexico, money is indeed a scare commodity for all of the state and only those with real need should be allowed to participate.

Since the administration of this proposal-solicitation stage will place additional burdens on the Interstate Stream Commission, the study also calls for additional staff to implement it. The process of developing criteria for soliciting proposals, reviewing them, reaching a decision and then preparing requests for funds for the implementation stage is calculated to take two years. For this reason, a two-year budget for costs of financing the proposal-solicitation stage under Alternatives A, B, and C is set out below in Figures 2, 3 and 4.

FIGURE 1

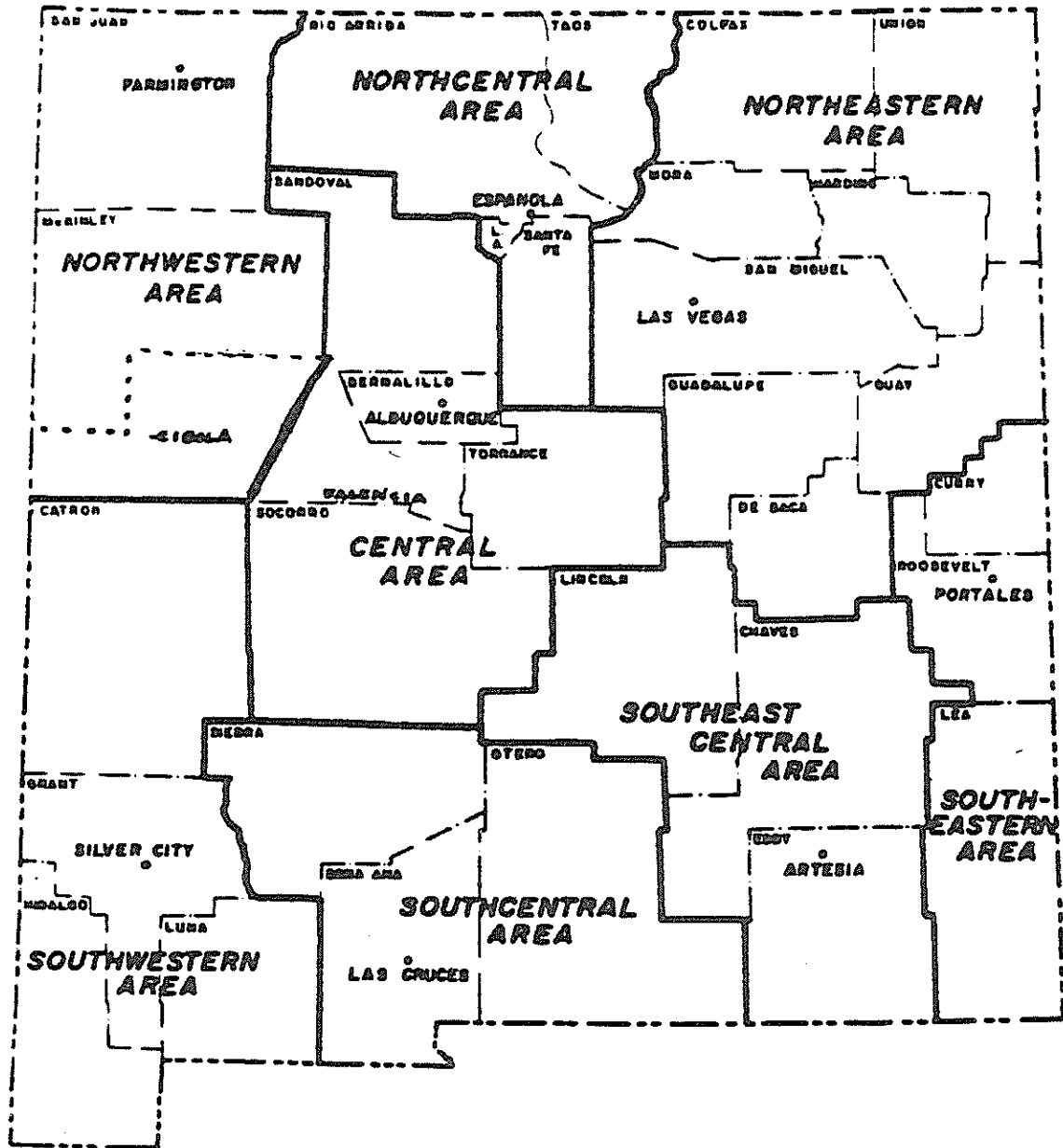


Figure 1. New Mexico's Eight Hydrologic Regions

FIGURE 2

TWO-YEAR BUDGET FOR STATE APPROPRIATION PROPOSAL FUNDING
ALTERNATIVE A

1.	<u>State Agency Administrative Costs</u>	
	Proposal Solicitation and Review:	
	1-1/4 staff at \$37,500 per year	\$ 93,750
	Secretarial Support:	
	1/2 secretary @ \$15,000 per year	15,000
	Supplies and Miscellaneous	
	@ \$5,625 per year	11,250
2.	<u>Regional Proposal Support Loans and Grants</u>	
	Funds for eight hydrologic regions	
	@ \$50,000 per region	<u>\$400,000</u>
		TOTAL \$520,000

FIGURE 3

TWO-YEAR BUDGET FOR STATE APPROPRIATION PROPOSAL FUNDING
ALTERNATIVE B

1.	<u>State Agency Administrative Costs</u>	
	Proposal Solicitation and Review:	
	1-1/4 staff at \$37,500 per year	\$ 93,750
	Secretarial Support:	
	1/2 secretary @ \$15,000 per year	15,000
	Supplies and Miscellaneous	
	@ \$5,625 per year	11,250
2.	<u>Regional Proposal Support Loans and Grants</u>	
	Funds for eight hydrologic regions	
	@ \$50,000 per region	400,000
3.	<u>Additional Staff and Support for</u> <u>Developing Criteria for Evaluating</u> <u>State Appropriation Proposals</u>	<u>30,000</u>
		TOTAL \$550,000

FIGURE 4

TWO-YEAR BUDGET FOR STATE APPROPRIATION PROPOSAL FUNDING
ALTERNATIVE C

1.	<u>State Agency Administrative Costs</u>	
	Proposal Solicitation and Review:	
	1-1/4 staff at \$37,500 per year	\$ 93,750
	Secretarial Support:	
	1/2 secretary @ \$15,000 per year	15,000
	Supplies and Miscellaneous	
	@ \$5,625 per year	11,250
2.	<u>Regional Proposal Support Loans and Grants</u>	
	Funds for eight hydrologic regions	
	@ \$50,000 per region	400,000
3.	<u>Additional Staff and Support for</u> <u>Developing Criteria for Evaluating</u> <u>State Appropriation Proposals</u>	30,000
4.	<u>Additional Staff or Support for</u> <u>Developing Criteria for Evaluating</u> <u>State Potential for Purchase of</u> <u>Water Rights</u>	<u>20,000</u>
	TOTAL	\$570,000

G. Financial Benefits of Appropriation

While the legislation directing this study does not directly call for additional discussion of the benefits of state appropriation, it is important to compare the benefits when discussing costs. The direct and indirect benefits of water for irrigation, commercial and residential uses was discussed in the 1986 Study. From a number of studies we concluded that the willingness to pay for water would be \$75 per acre-foot for agricultural users and

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\$535 to \$1,700 and up per acre-foot for municipal/industrial users.¹¹

A second critical element on the benefits side is what will the dollar benefits per acre-foot of water be at future time periods. As the economies of the west grow and as water becomes more scarce, these benefits and market prices for water will rise. An essential task of a state appropriation program is to monitor water transfers in order to determine the rate of growth of water prices and by implication the rise in benefits.

There are two issues bearing on placing dollar values on water benefits. The first is the effect that certainty of water availability will have on the location of new industry. While we have no doubt as to the importance of a certain water supply for development and expansion, we are unable to quantify it. A second and related benefit is value of an available but temporarily unused water resource. There is an analogy which can be made between such a water "reserve" for New Mexico and the national strategic oil reserve.

The administrative costs of state appropriation are primarily fixed and expected to grow relatively slowly. The start-up costs for a state program are administrative in nature and on a long term basis will be swamped by project costs and benefits. There is, however, a great benefit from starting now:

¹¹C. DuMars, et al., State Appropriation of Unappropriated Groundwater: A Strategy for Insuring New Mexico a Water Future 220 (NM Water Resources Research Institute & UNM School of Law, Jan. 1986).

security. Therefore, it may be argued that the initial administrative costs will become "sunk costs" once they are made. They represent a risk that the state and its residents should be willing to take.

There is yet another basis for undertaking the administrative costs. Allocating funds to appropriate groundwater for beneficial use can be visualized as an alternative investment. One need only compare where the state could best invest--in national or state financial security markets, or in capturing a natural resource which may otherwise be lost. In 1985 the state permanent fund yielded approximately 10.3 percent return on its investments. If the net benefits and market prices for water rights are increasing at an equivalent or greater rate, the state is foregoing a more productive opportunity for a less attractive one if it neglects to shepherd and capture its unappropriated water resources.

Pre-historical prices for water rights per acre-foot for four water basins are reported in Table 4. Because water transfers are private transactions and relatively few exchanges have been made from 1962 to 1982, these data are incomplete. However, it is clear that prices have been rising rapidly, and the return on their acquisition, particularly since unappropriated water is "free" may well exceed traditional permanent fund yields.

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TABLE 4

HISTORICAL PRICES OF WATER RIGHTS IN NEW MEXICO
(in current dollars)

Year	Rio Grande		Gila & San Francisco	Roswell & Artesia	San Juan Basin
	Excluding Santa Fe	Santa Fe			
1962	267.00* 285.00				
1963	214.00*	900.00 1,000.00			
1964	214.00*				
1965	267.00*	3,030.00			
1966	214.28				
1967					274.00
1968	214.28*		1,250.00		
1969	250.00	3,733.00			
1970		3,333.00		238.00	72.00
1971	335.00 214.28 214.28	4,667.00 4,667.00	843.75 470.58		
1972	280.00	11,429.00			137.00 43.00 171.00
1973	500.00		625.00 625.00 937.50 937.50 625.00 1,818.18	270.00	
1974	492.00		919.11 1,062.50 937.50 937.50 1,250.00 1,312.50	445.00	
1975	532.00	10,909.00	1,491.00 937.50 1,250.00 1,250.00		
1976	786.16		2,379.00 1,562.00	628.00	
1981	760.00**				
1982	1,000.00**				

Source; Rahman Khoshakhlagh, Lee Brown and Charles DuMars, "Forecasting Future Market Values of Water Rights in New Mexico," WRRRI Report No. 092, Nov. 1977.

NOTE

- *; extracted from the sale contracts in the State Engineer Office.
- **; extracted from the interview with John Blatnik (Appraiser) in John Blatnik & Associates, Inc.
- others; extracted from the results of questionnaires survey by Rahman Khoshakhlagh, et. al.

NOTE

1. The City of Albuquerque has a standing offer to purchase any transferable consumptive water rights anywhere within the Rio Grande Basin for \$1,000.00 per acre-foot, as of Jan. 1, 1986.
2. The Albuquerque Utilities Incorporated has pre-leased water rights within the last three years. The reported value has been from \$1,000.00 to \$2,500 per acre-foot.
3. New Mexico Utilities has purchased water rights within the Rio Grande Basin at \$1,500.00 to \$2,000.00 per acre-foot.

Thus, when the implementation stage is ready to begin, the legislature will be able to evaluate each proposal not only on the issue of efficiency, but also on an economic basis. Is this a good investment? Is the price of the commodity going to rise? In the area of acquiring water rights for the future of New Mexico, the answer to this question will likely always be yes. However, if after all the regional proposals have been reviewed the legislature concludes it is not a good investment, it always has the option of declining to pay the cost.

CHAPTER SIX
POTENTIAL FUNDING SURVEY FOR
IMPLEMENTATION STAGE

I. Background

As discussed above, state ownership of water rights in New Mexico could take place in two ways. First, New Mexico (through an appropriate governmental entity such as the Interstate Stream Commission) can apply for water rights to unappropriated surface water and groundwater. This method would require the state to go through the normal application process that is required for all other potential users of water in New Mexico. The use of this method presupposes that there are sufficient amounts of unappropriated water subject to future appropriation to make application worthwhile and that the state's purposes for appropriating the water are legally adequate to permit acquisition of such water rights.

Under a second method, New Mexico can acquire water rights by purchasing them from the current owners of the rights. These purchases can take place through voluntary sales where the state offers a price sufficient to induce the seller to sell his rights. Governmental purchase of water rights is a relatively common practice and is used in connection with government-sponsored water projects.

This study has concluded that the initial funding for solicitation of proposals by the various regions should come from the

general fund. Assuming such proposals are ultimately approved, the decision must be made as to how to fund the implementation of these proposals. While this decision will not have to be faced in the 1987 legislature, this report addresses possible sources of funding for state appropriation.

Part II of this chapter describes existing revenues available from (1) current taxes, (2) non-tax sources, and (3) borrowed funds. Part III explores the possibility of using new funding sources from (1) increases in existing taxes, (2) new taxes, (3) revenues from the leasing of state-owned water rights, and (4) investment monies from the permanent fund. Finally, Part IV makes recommendations for funding the programs that this study finds are in the best interest of the State of New Mexico.

II. Existing Revenues

A. Current Major Taxes

Like most states, New Mexico has a large number of taxes. The revenues generated by these taxes are earmarked for distribution to one of three sources: (1) the general fund, out of which the legislature makes general appropriations, (2) one or more statutorily designated funds, from which expenditures are restricted to enumerated purposes, and (3) local governments. What follows is a description of each of New Mexico's taxes and the destination of revenues generated by those taxes.

1. General Sales Taxes

The single largest source of New Mexico's tax revenues comes

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from its general sales taxes. These taxes are imposed in the form of a gross receipts tax and a compensating tax. Each of these two taxes has several components, which are the state portion and the various local portions.

a. The Gross Receipts Tax

New Mexico's gross receipts tax is a tax imposed on the privilege of doing business in New Mexico.¹ The tax base is comprised of a taxpayer's gross receipts, which are defined as the total amount of money and the value of other consideration received from selling property, leasing property, and performing services.² The current tax rate is 4.75%.³ Certain activities are exempted from the tax, in many cases because the activity is already subject to one or more other state taxes. These exemptions include wages,⁴ certain agricultural products,⁵ dividend and interest income,⁶ and most forms of mineral production and extraction.⁷

b. Compensating Tax

For the privilege of use, consumption, or storage of

¹N.M. Stat. Ann. 7-9-4(A) (Repl. Pamph. 1986).

²Id. § 7-9-3(F).

³Id. § 7-9-4(A).

⁴Id. § 7-9-17.

⁵Id. § 7-9-18.

⁶Id. § 7-9-25.

⁷Id. § 7-9-32.

tangible property in New Mexico, an excise tax equal to the amount of the gross receipts tax is imposed.⁸ One purpose of this tax is to protect New Mexico businesses from the importation of property into the state where such property has not already been subject to the gross receipts tax. If a sales tax has already been paid to another state, then that tax is a credit against the New Mexico compensating tax.⁹

c. Local Gross Receipts Taxes

Counties and municipalities have the option of imposing additional gross receipts taxes. A municipality can impose a gross receipts tax of up to 1.25% on those receipts subject to the state gross receipts tax.¹⁰ Taxpayers, however, are entitled to a partial credit of .5% against their state gross receipts tax.¹¹

⁸Id. § 7-9-7.

⁹Id. § 7-9-79.

¹⁰Id. § 7-19-4.1. For minor exceptions, see id. § 7-19-5.

¹¹Id. § 7-9-82. If the rate of the municipal gross receipts tax is .25%, then the credit is limited to that amount. Id. § 7-9-82(B).

Until February 1, 1986, municipalities with populations under 12,000 and located in class C counties; i.e., those having a population of less than 100,000 and having a full assessed valuation (for property tax purposes) of less than \$45,000.000. Id. § 4-44-1. Section 7-19-11(C) could impose an additional gross receipts tax of 1%. Id. § 7-19-12. The additional revenues can be used for the limited purpose of paying principal and interest on bonds issued to provide funding for the construction or acquisition of a municipal water supply system. Id. § 7-19-12(b), 12(G), 17(A), 18. As of February 1, 1986, only Raton and Ruidoso had imposed this tax.

Until February 1, 1986, municipalities (without regard to size or class of county) could impose a special municipal gross

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2. Destination and Volume of Revenues

a. Gross Receipts Taxes: For the fiscal year 1985-86, revenues from gross receipts taxes (combined state and local portions) totalled \$732,003,502. Of this amount, \$448,070,135 was paid to the general fund, and \$283,165,734 was paid to counties and municipalities. In addition, \$767,632 was distributed to the aviation fund.¹²

The amounts paid to counties and municipalities are comprised of two components. The first component comes directly from the state portion of the gross receipts tax. A payment of

receipts tax of up to .25%. Id. § 7-19A-3. The revenues from this tax could be used only for specified infrastructure improvements for such things as sewer lines and streets. Id. § 7-19A-3(B). For these additional taxes in place prior to February 1, 1986, the tax can continue only until July 1, 1991. Id. § 7-19A-3(H). If the municipality pledged the receipts of this tax on a bond issue, then the tax can continue until full payment of the bond issue.

Counties can impose two additional gross receipts tax, which can be imposed at a rate not to exceed .375%. § 7-20-3(A). The rate of .375% is composed of three .125% increments. Id. § 7-20-3(B), (C), (D). The revenues from each .125% increment are subject to various use restrictions. Id. § 7-20-3, 7-20-8. The second tax is known as the county fire protection excise tax, which permits counties to impose an additional gross receipts tax not to exceed .25% for a period of five years or less. Id. § 7-20A-1 through 7-20A-9. The revenues from this tax must be used to support fire protection programs and emergency ambulance services. Id. § 7-20A-3(B).

¹²Taxation and Revenue Department of New Mexico, Annual Report -- 74th Fiscal Year: 1985-1986, at 41 [hereafter referred to as Annual Report: 1985-1986]. The amounts paid to the aviation fund are attributable to a portion of the gross receipts tax imposed on the sale of fuel for turbo-prop and jet engine aircraft. N.M. Stat. Ann. § 7-1-6.7. The aviation fund must use its revenues for the operation of the Aviation Division in the Department of Transportation. Id. §§ 64-1-15 (Cum. Supp. 1985), 64-1-13 (1978).

1.35% of gross receipts reported in each incorporated municipality is made to that municipality.¹³ The second component is made up of the individual local add-on taxes discussed above.¹⁴

Those revenues remaining after payments to counties, municipalities, and the aviation fund are earmarked for the general fund.¹⁵ These revenues are available for appropriation by the legislature.¹⁶

b. Compensating Tax: For the fiscal year 1985-86, revenues from the compensating tax totalled \$13,433,947.¹⁷ These funds were distributed as follows: \$1,758,207 to the small cities assistance fund, \$2,197,759 to the small counties assistance fund, \$39,324 to the aviation fund, and \$9,438,656 to the general fund.¹⁸

¹³N.M. Stat. Ann. § 7-1-6.4(A) (Repl. Pamp. 1986).

¹⁴These funds are distributed to counties and municipalities under the following statutes: N.M. Stat. Ann. §§ 7-19-8, 7-19-15, 7-19A-6, 7-20-7, 7-20A-6 (Repl. Pamp. 1986).

¹⁵N.M. Stat. Ann. § 7-1-6.1 (Repl. Pamp. 1986).

¹⁶Id. § 6-4-2 (Repl. Pamp. 1983).

¹⁷Annual Report: 1985-86, supra note 12, at 41.

¹⁸Id. The amounts paid to the small cities assistance fund are equal to 8% of the revenues generated by the compensating tax. N.M. Stat. Ann. § 7-1-6.2 (Repl. Pamp. 1986). The revenues in this fund are distributed annually to certain small municipalities. A qualified municipality is one that has a population of less than 10,000, that receives less than an average share of state gross receipts tax (from the 1.35% municipal portion), and that has imposed at least a .25% municipal gross receipts tax. Id. § 3-37A-2(H). Amount range from \$15,000 to \$18,000, unless the balance in the fund is inadequate, in which case the amounts distributed are proportionately reduced. Id. § 3-37A-3(C). Any excess funds

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B. Resource Extraction Taxes

Revenues from New Mexico's various mineral extraction taxes are the second largest source of tax revenues for the state. These numerous taxes are relatively complex and are earmarked for a variety of uses.¹⁹

1. The Resources Excise Taxes

There are three separate excise taxes: the resources tax,²⁰

revert to the general fund. Id. § 3-37A-3(E). The distributions to individual municipalities are not subject to any use restrictions. Id. § 3-37A-3(F).

The amounts paid to the small counties assistance fund are equal to 10% of the revenues generated by the compensating tax. Id. § 7-1-6.5. The revenues in this fund are distributed annually to qualifying counties. Counties with populations under 42,500 are eligible if they meet certain other requirements. See id. § 4-61-2(B). Amounts range from \$55,000 to \$150,000. Id. § 4-61-3(D). The distributions to eligible counties are proportionately reduced when the balance in the fund is insufficient. Income earned on fund monies placed in temporary investments is payable to the general fund. Id. § 4-61-3(E). The excess monies in the fund revert to the general fund. Id. § 4-61-3(F).

The amounts paid to the aviation fund are attributable to a portion of the compensating tax imposed on aviation fuel. Id. § 7-1-6.7. The funds are used to pay the budget of the Aviation Division of the Department of Transportation. Id. § 64-1-15 (Cum. Supp. 1985).

Those compensating tax revenues remaining after payment to the above funds are paid to the general fund and are available for appropriation by the legislature.

¹⁹N.M. Stat. Ann. § 6-4-2 (Repl. Pamp. 1983).

²⁰Id. § 7-25-4 (Repl. Pamp. 1986).

the processors tax,²¹ and the service tax.²² These taxes apply to natural resources, which are defined as timber, timber products, metalliferous minerals, and non-metalliferous minerals.²³ The tax base is the taxable value of the mineral, which is usually the sales price of the mineral.²⁴ Excluded from these taxes are oil, natural gas, liquid hydrocarbons, and carbon dioxide.²⁵

The resources tax is imposed on any severer of natural resources in New Mexico at a rate of .75% of the taxable value of the mineral severed. A lower rate of .5% applies to potash and a rate of .125% applies to molybdenum.²⁶

The processors tax is imposed on any processor of any natural resources in New Mexico. The rate of tax is .75% of the taxable value of the mineral processed. A lower rate of tax applies in the case of timber (.375%), potash (.125%), molybdenum (.125%), and copper (.25%). For natural resources severed in another state and brought into New Mexico for processing, the taxpayer is entitled to reduce the taxable value of the processed

²¹Id. § 7-25-5.

²²Id. § 7-25-6.

²³Id. § 7-25-3(B).

²⁴Id. § 7-25-3(I).

²⁵Id. § 7-25-3(B).

²⁶Id. § 7-25-4(A).

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natural resources by the value of the natural resources imported.²⁷

The service tax is imposed on the service charge of any person severing or processing natural resources in New Mexico where the person doing the severing or processing is not the owner of the natural resources. The rate of tax is an amount equal to the tax imposed under the resources tax or the processors tax. The owner of natural resources may deduct the cost of any service charge in computing taxable value for purposes of the resources tax or the processors tax.²⁸

Destination and Volume of Revenue: The revenues derived from these taxes are paid over to the general fund²⁹ and are available for appropriation by the legislature. The revenues generated by these taxes in for the fiscal year 1985-86 were \$6,551,215.³⁰

2. The General Severance Tax

The severance tax is an excise tax imposed on the privilege of severing natural resources in New Mexico.³¹ The tax applies to timber and minerals, but does not apply to oil, natural gas,

²⁷Id. § 7-25-5.

²⁸Id. § 7-25-6.

²⁹This occurs because the revenues from these taxes are not earmarked for any specific fund. Unearmarked funds ultimately end up in the general fund.

³⁰Annual Report -- 1985-86, supra note 12, at 44.

³¹N.M. Stat. Ann. § 7-26-3 (Repl. Pamp. 1986).

liquid hydrocarbons, or carbon dioxide.³² Computation of the tax varies markedly for different minerals.

In the case of coal, the tax is imposed at a fixed sum per ton. Surface-mined coal is subject to a slightly higher rate. The rate is increased yearly to reflect increases in the consumer price index.³³ During the 1986-87 fiscal year the tax will be \$1,065 per ton of surface-mined coal and \$1,027 for underground coal.³⁴ For uranium, a severance tax of 3.5% is imposed on 50% of the sales price per pound of yellowcake (uranium oxide).³⁵ For all other natural resources, the tax base is the taxable value of the mineral.³⁶

Destination and Volume of Revenue: Revenues generated by the severance tax are distributed to the severance tax bonding

³²Id. § 7-26-2(B).

³³Id. §§ 7-26-6, 7-26-9.

³⁴Annual Report: 1985-86, supra note 12, at 31.

³⁵N.M. Stat. Ann. § 7-26-7 (Repl. Pamp. 1986).

³⁶Id. §§ 7-26-3, 7-26-4. This tax base is then subject to a specified tax rate that varies from mineral to mineral. Id. § 7-26-5. For most minerals and for timber, taxable value is the gross sales value (reduced by certain costs) determined at the first marketable point. Id. § 7-26-4(B). For potash, molybdenum, copper, lead, zinc, gold, and silver, taxable value is determined by using a statutorily defined percentage of a published price for the refined metal or mineral. Id. § 7-26-4(C) through (G). The rate of tax for the various natural resources (other than coal and uranium) are as follows: potash (2.5%); copper (.5%); timber (.125%); pumice, gypsum, sand, gravel, clay, fluospar, and other nonmetallic minerals (.125%); gold and silver (.2%); lead, zinc, thorium, molybdenum, manganese, rare earth metals, and other metals (.125%).

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fund.³⁷ The amounts in this fund are pledged for the payment of principal and interest on severance tax bonds.³⁸ The fund is maintained at a level sufficient to pay the next two semi-annual installments on the principal and interest of outstanding severance tax bonds.³⁹ Any excess amounts are transferred to the severance tax permanent fund.⁴⁰ The severance tax permanent fund⁴¹ uses its funds for investments,⁴² the income from which is deposited in the severance tax income fund.⁴³ The severance tax income fund contains monies that are then transferred to the general fund and are available for appropriation by the legislature. The revenues generated by the severance tax amounted to \$24,254,707 for the fiscal year 1985-86.⁴⁴

³⁷N.M. Stat. Ann. § 7-1-6.23 (Repl. Pamp. 1986).

³⁸Id. § 7-27-6.

³⁹Id. § 7-27-8.

⁴⁰Id.

⁴¹Id. § 7-27-3.

⁴²Id. § 7-27-5.

⁴³Id. § 7-27-4. Historically, the severance tax income fund was used as a conduit to the severance tax income bond retirement fund. This latter fund was used to issue revenue bonds. IRS has said that the structure of these two funds violated arbitrage restrictions in the Internal Revenue Code and would cause the interest on the bonds to be subject to the federal income tax. Therefore, the legislature disassembled this structure, leaving these two funds in place merely to pay off outstanding bonds. For practical purposes, the income from the severance tax permanent fund goes into the general fund. See Annual Report: 1985-86, supra note 12, at 6.

⁴⁴Annual Report: 1985-86, supra note 12, at 44.

3. The Oil and Gas Severance Tax

A severance tax is imposed on the production of all oil, natural gas, liquid hydrocarbons, and carbon dioxide.⁴⁵ The tax on natural gas is a stated amount per one thousand cubic feet (MCF). For the fiscal year 1985-86 the severance tax on natural gas was \$.163 per MCF (made up of a normal tax \$.087 plus a consumer price-indexed amount which was \$.076).⁴⁶ The tax on oil, liquid hydrocarbons, and carbon dioxide is 3.75% of the standard sales price of the product sold at the wellhead.⁴⁷

Destination and Volume of Revenue: The revenues generated by this tax are distributed to the severance tax bonding fund⁴⁸ and thereafter handled in the same manner as revenues from the severance tax described above. The oil and gas severance tax generated \$191,059,422 in revenue during the 1985-86 fiscal year. Because of a sharp decline in oil and gas prices, these revenues were 3.3% less than those of the preceding year.⁴⁹ These revenues are predicted to decline further.

4. The Oil and Gas Conservation Tax

In substance a severance tax, the oil and gas conservation

⁴⁵Id. § 7-29-4.

⁴⁶This is comprised of a regular tax and a surtax. Id. §§ 7-29-4(A)(1), 7-29-4.7.

⁴⁷Id. §§ 7-29-4(A)(2), 7-29-4.4.

⁴⁸Id. §§ 7-1-6.23, 7-27-2.

⁴⁹Annual Report: 1985-86, supra note 12, at 44.

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tax is imposed on the taxable value of oil, natural gas, liquid hydrocarbons, carbon dioxide, uranium, coal, and geothermal energy that is severed and sold in New Mexico.⁵⁰ The rate of tax is about .2% of the taxable value of the product.⁵¹

Destination and Volume of Revenue: The revenues from this tax are paid to the oil conservation fund and to the general fund. Of the total revenues collected, 93% must be distributed to the oil conservation fund.⁵² The monies in the oil conservation fund are earmarked for several purposes. First, the amount equal to .01% of the taxable value of the mineral subject to the tax must be paid over to the oil and gas reclamation fund.⁵³ The oil and gas reclamation fund provides revenues to carry out projects authorized by the Oil and Gas Act.⁵⁴ Second, the bulk of the monies in the oil conservation fund is appropriated to the Energy and Minerals Division to pay its annual budget.⁵⁵ Third, any amounts left over after the distributions described above are

⁵⁰N.M. Stat. Ann. § 7-30-4 (Repl. Pamp. 1986).

⁵¹The rate of tax varies from between .18% to .2% depending on the valance in the oil and gas reclamation fund. Id. § 7-30-3(A), (B).

⁵²Id. § 7-1-6.21.

⁵³Id. § 7-30-14(a).

⁵⁴Id. § 70-2-37 (Cum. Supp. 1985). The statute contemplates that a major part of the funds in the oil and gas reclamation fund will be used to identify and plug abandoned oil and gas wells located on federal lands.

⁵⁵Id. § 7-30-14(A) (Repl. Pamp. 1986).

payable annually to the severance tax permanent fund.⁵⁶ During the fiscal year 1985-86, this tax generated \$8,013,665.⁵⁷

In addition to the above, there are the oil and gas emergency school tax,⁵⁸ the natural gas processors tax,⁵⁹ the oil and gas ad valorem production tax,⁶⁰ and the oil and gas production equipment tax ad valorem tax.⁶¹

⁵⁶Id. § 7-30-14(B).

⁵⁷Annual Report: 1985-86, supra note 12, at 44-45.

⁵⁸Another severance tax imposed on oil, natural gas, liquid hydrocarbons, and carbon dioxide, this tax is imposed at a rate of 3.15% of the taxable value of the minerals severed. This tax produces sizeable (although declining) revenues. N.M. Stat. Ann. § 7-31-4 (Repl. Pamp. 1986). The revenues from this tax are earmarked for the general fund, id. § 7-1-6.20, and are available for appropriation by the legislature. The revenues from this tax for the fiscal year 1984-85 were \$134,778,847 and for the fiscal year 1985-86 were \$122,877,435. Annual Report: 1985-86, supra note 12, at 44.

⁵⁹This is a tax of .45% imposed on the value of the products sold by processors of natural gas. N.M. Stat. Ann. § 7-33-4(A) (Repl. Pamp. 1986). The funds generated by this tax go into the general fund and are available for appropriation by the legislature. Id. § 7-1-6.20. The receipts from this tax are relatively small, amounting to \$9,825,025 for fiscal year 1984-85 and \$8,197,781 for fiscal year 1985-86. Annual Report: 1985-86, supra note 12, at 45.

⁶⁰This tax, levied in lieu of real property ad valorem taxes, is imposed on oil, natural gas, liquid hydrocarbons, and carbon dioxide production. N.M. Stat. Ann. § 7-32-4 (Repl. Pamp. 1986). The tax rate is set by the taxing district in which the minerals are severed. The tax base is equal to 50% of the market value of the products sold, reduced for royalties paid. The revenues from this tax are paid almost exclusively to the county treasurers around the state, with a small amount paid to the general obligation bond fund. Id. § 7-32-14(A). Of the \$31,177,675 in revenues generated by this tax during the 1985-86 fiscal year, \$28,962,862 was paid to country treasurers. Annual Report, supra note 12, at 45.

⁶¹This tax, also in lieu of real property and ad valorem taxes, is imposed on the assessed value of equipment used to

C. Income and Estate Taxes

After sales taxes and resource taxes, income and estate taxes are the next largest source of tax revenue for New Mexico. These taxes include the personal income tax, the corporate income tax, and the estate tax.

1. Individual Income Tax

New Mexico has a progressive income tax at a rate ranging from 1.8% to a top rate of 8.5%.⁶² In general, the tax base for each taxpayer is his federal taxable income.⁶³ The tax contains a number of rebates and credits. Some of the rebates and credits apply to low income taxpayers and operate to reduce the regressive nature of New Mexico's sales taxes.⁶⁴ Other credits serve to stimulate certain activities. For example, taxpayers who install qualified solar and wind energy equipment for a qualified use are eligible for a credit of up to \$4,000 over a three-year period.⁶⁵

produce oil, natural gas, liquid hydrocarbons, and carbon dioxide. N.M. Stat. Ann. §§ 7-34-4, 7-34-5 (Repl. Pamp. 1986). The tax rate is set by the local taxing district. The tax base is set at 9% of the previous year's sales. These taxes are paid over almost exclusively to the county treasurers, *id.* § 7-34-9, with a small amount paid to the general obligation bond fund. Of the \$7,184,077 in revenues generated from this tax during the fiscal year 1985-86, \$6,727,003 was paid to county treasurers. Annual Report, *supra* note 12, at 45.

⁶²N.M. Stat. Ann. § 7-2-7 (Repl. Pamp. 1986).

⁶³*Id.* § 7-2-2(M).

⁶⁴*See id.* § 7-2-14, which provides a refundable credit to low-income taxpayers.

⁶⁵*Id.* § 7-2-16(H). This credit is phased out by 1989.

Destination and Volume of Revenue: Tax revenues from the individual income tax go to the general fund⁶⁶ and are available for appropriation by the legislature. Net revenues from the individual income tax were about \$100,000,000 for the fiscal year 1985-86.⁶⁷

2. Corporate Income Taxes

For corporations doing business in New Mexico, a tax of 4.8% to 7.6% is imposed on a corporation's net income.⁶⁸ For corporations doing business in one or more states, in addition to doing business in New Mexico, net income is allocated among the two or more states based on the Uniform Division of Income for Tax Purposes Act.⁶⁹ In addition to the corporate income tax, New Mexico imposes a franchise tax of \$50 per year for each corporation.⁷⁰

⁶⁶Id. § 7-1-6.1.

⁶⁷Annual Report, supra note 12, at 41-42. Unless New Mexico modifies the definition of its income tax base or reduces its tax rate, the state can expect a sizeable increase in revenues from its income tax, beginning in years after 1986. This increase will take place because of the major changes embodied in the Tax Reform Act of 1986. The Tax Reform Act of 1986 has the general effect of increasing federal taxable income by eliminating a number of deductions, especially those relating to tax-motivated investments. The staff economist for the Taxation and Revenue Department estimates that New Mexico income tax revenues will increase about \$50-\$60 million per year after 1986 as a result of the federal Tax Reform Act of 1986. Memo dated November 17, 1986, to Scott Taylor, from Janet Peacock, staff economist.

⁶⁸N.M. Stat. Ann. § 7-2A-3 (Repl. Pamp. 1986).

⁶⁹Id. §§ 7-2A-8, 7-4-1 to 7-4-21.

⁷⁰Id. § 7-2A-5.1.

Destination and Volume of Revenue: Revenues generated by the corporate income and franchise taxes are payable to the general fund⁷¹ and are available for appropriation by the legislature. For the fiscal year 1985-86, New Mexico collected \$72,084,854 in these taxes.⁷²

3. Estate Tax

The New Mexico estate tax is imposed on all those estates that have a federal estate tax liability. The amount of the tax is equal to the amount of the state death tax credit established in the Internal Revenue Code.⁷³

Destination and Volume of Revenue: The revenues from this tax are payable to the general fund⁷⁴ and are available for appropriation by the legislature. The estate tax generated \$7,686,665 for the fiscal year 1985-86.⁷⁵

⁷¹Id. § 7-1-6.1.

⁷²Annual Report, supra note 12, at 42.

⁷³N.M. Stat. Ann. § 7-7-3(A) (Repl. Pamp. 1986).

⁷⁴Id. § 7-1-6.1.

⁷⁵Annual Report, supra note 12, at 42.

D. Selective Excise Taxes

These taxes are imposed on the sale of cigarettes,⁷⁶

⁷⁶The excise tax on cigarettes is imposed at a rate of \$.15 per pack (of 20 cigarettes). N.M. Stat. Ann. § 7-12-3 (Repl. Pamp. 1986). This tax was raised from \$.12 to \$.15 per pack of cigarettes effective July 1, 1986. Therefore, revenues from this tax should increase significantly. Of the \$.15 in tax collected per package of ciagarettes: (1) \$.01 is payable to the county and municipality recreation fund. Id. § 7-1-6.11(A). The county and munincipality recreational fund redistributes its monies to individual counties and municipalities based on their percentage share of cigarette sales. Id. § 7-12-15(A). The monies so distributed to local governments must be used for public recreational facilities and to pay the salaries of those who run the facilities. Id. § 7-12-15. (2) \$.02 is payable to the county and municipality cigarette tax fund. Id. § 7-1-6.11(B). This fund redistributes its monies to county and municipal governments based on their respective share of sales. The statute imposes no restriction on the use of the funds. Id. § 7-12-16). (3) \$.03 is payable to the health research fund. Id. § 7-1-6.11(C). These funds are earmarked for health researc administered by the medical center at the University of New Mexico. Id. § 24-20-1. (4) \$.09 is payable to the general fund. Id. § 7-1-6.1. For the fiscal year 1985-86, cigarette taxes totalled \$14,764,610. Annual Report: 1985-86, supra note 12, at 43. These revenues do not reflect the increase in tax from \$.12 to \$.15 per pack effective July 1, 1986.

Beginning on July 1, 1986, a tax of 25% is imposed on the price of tobacco sold to the first purchaser in the ordinary course of business. Id. § 7-12A-3(A), (C). This tax does not apply to cigarettes. Id. § 7-12A-2(F). The revenues generated by this tax are paid to the operating reserve fund. Id. § 7-1-6.17. The operating reserve fund contains monies to be used when current tax revenues are temporarily insufficient to meet operating costs of state government. 1966 N.M. Laws ch. 66, § 16. Because this tax became effective after the end of the 1985-86 fiscal year, no revenues were collected.

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gasoline,⁷⁷ and liquor.⁷⁸ Another tax is imposed on the private use of railroad cars.⁷⁹

⁷⁷The excise tax on gasoline and on special fuels is \$.11 per gallon of gasoline. N.M. Stat. Ann. § 7-13-3(B) (Repl. Pamp. 1986). The revenues generated by these taxes are distributed to numerous funds. The amounts generated by the sale of aviation fuel go to the aviation fund. Id. § 7-1-6.7(B). Two-tenths of 1% of gasoline taxes are paid to the motorboat fuel fund. Id. § 7-1-6.8. Under a statutory formula, about 13.5% of gasoline tax revenues are paid to counties and municipalities. Id. § 7-1-6.9. The remaining portion of gasoline tax receipts go to the state road fund. Id. § 7-1-6.10. See id. § 67-3-65 (Cum. Supp. 1986). Section 67-3-65 also states that income earned on monies in the fund shall not be transferred to another fund. The state road fund is to be used for the maintenance, construction, and improvement of state highways. Id. § 67-3-65.1. For the fiscal year 1985-86, the gasoline tax generated \$76,007,759 in revenues. Annual Report: 1985-86, supra note 12, at 43.

A Class A (Bernalillo) or a Class H (Los Alamos) county, N.M. Stat. Ann. §§ 7-24A-2(A) (Repl. Pamp. 1984), 4-44-1 (Repl. Pamp. 1986), 4-44-3 (Cum. Supp. 1985), is authorized to impose a \$.02 per gallon tax on the sale of gasoline. Id. § 7-24A-5(A) (Repl. Pamp. 1986). The funds from this tax must be used for enumerated purposes, which are bridge and road projects, public transportation programs, and vehicle inspection programs. Id. § 7-24A-3. The revenues from this tax are distributed directly to the counties imposing such a tax. Id. § 7-1-16.14. Because no counties imposed this tax during the 1985-86 fiscal year, no revenues were generated.

⁷⁸The liquor excise tax is imposed at various rates depending on the nature of the liquor. N.M. Stat. Ann. § 7-17-5 (Repl. Pamp. 1986). About half of the funds from this tax are paid to the community alcoholism treatment and detoxification fund, id. § 7-1-6.3, which is administered by the Health and Environment Department. Id. § 43-3-7 (Cum. Supp. 1985). The remaining half is distributed to the general fund and is available for appropriation by the legislature. Id. § 7-1-6.1 (Repl. Pamp. 1986). The liquor excise tax generated \$17,759,610 for the fiscal year 1985-86. Annual Report: 1985-86, supra note 12, at 43.

⁷⁹The railroad car company tax is an annual tax of 2.5% imposed on the gross earnings from the use or operation of private railroad cars in New Mexico. N.M. Stat. Ann. § 7-11-3 (Repl. Pamp. 1986). The tax is meant to apply to those railroad

E. Property Taxes

New Mexico has general property taxes that subject property located in New Mexico to a specific rate of tax levied against the assessed value of the property.⁸⁰ This tax is administered primarily at the county level. The tax rate is set by the local taxing authority.⁸¹ In addition, the taxes are payable directly to the county treasurer. Under current statute, these funds are not available for appropriation by the legislature.

The revenues generated by general property taxes are large. Figures, however, are not available for recent years.

F. State Funds

New Mexico uses a fund system for the designation of its tax revenues. As already demonstrated, the potential use of tax revenues is limited by the statutory purpose of each fund. The state's general fund is the fund out of which the legislature makes its major appropriations. The general fund, therefore, is the only existing fund containing revenues available to pay for the programs recommended by this study. In recent years, the legislature has found it increasingly necessary to squeeze

cars that escape taxation from the ad valorem property tax. Id. § 7-11-3. The revenues from this tax are paid to the general fund. Id. § 7-1-6.1. This tax generated revenues of \$651,622 for the fiscal year 1985-86. Annual Report: 1985-86, supra note 12, at 44.

⁸⁰N.M. Stat. Ann. § 7-37-2 (Repl. Pamp. 1986).

⁸¹Id. § 7-37-7. This statute places a maximum rate on the property tax.

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revenues from the general fund as far as possible. To the extent funds for the implementation stage of state appropriation are to come out of the general fund, other programs may have to be cut back or displaced. Therefore, only the proposal submission stage is recommended for funding out of the general fund.

G. Overview of Tax Revenues

Since the beginning of 1986, state revenues from extraction taxes have fallen markedly. For the fiscal year 1985-86 total extraction tax revenues fell to \$575,663,029 from \$629,480,944 for the previous fiscal year (1984-85).⁸² If oil, gas, and other energy prices remain depressed at current levels, then New Mexico can expect another substantial drop in these tax revenues for the fiscal year 1986-87.⁸³

To make up for decreasing extraction tax revenues, the legislature has already increased income and gross receipts taxes. Existing tax revenues are becoming increasingly scarce.

1. Current Non-tax Revenues

New Mexico derives sizable non-tax revenues from various sources. These sources are income from the severance tax permanent fund and income from state lands. In general, these revenues are not available to pay for the programs recommended by

⁸²Annual Report: 1985-86, supra note 12, at 66.

⁸³This results because lower prices will have been in effect for the entire fiscal year. During the fiscal year 1985-86, oil and gas prices fell at the end of 1985, which meant that extraction taxes were affected only for the second half of that fiscal year.

this study, with the possible exception of the land and water conservation fund discussed below.

a. State Severance Tax Permanent Fund

The state severance tax permanent fund is created by the state constitution.⁸⁴ By statute the monies in the permanent fund are to be invested for the dual purposes of (1) producing income and (2) stimulating the New Mexico economy.⁸⁵ Income produced by these investments is ultimately paid to the general fund and is available for appropriation by the legislature.

Income producing investments are permitted within the range defined by statute.⁸⁶ Generally speaking, these investments are aimed at producing a high yield of income in low to moderate risk investments. Economic stimulation investments are limited to enumerated purposes. The four permitted purposes are: (1) deposits in New Mexico banks,⁸⁷ (2) pass-through mortgage-backed securities,⁸⁸ (3) New Mexico business investments,⁸⁹ and (4) educational loan notes.⁹⁰

⁸⁴N.M. Const. art. VIII, § 10.

⁸⁵N.M. Stat. Ann. § 7-27-5 (Repl. Pamp. 1986).

⁸⁶Id. § 7-27-5.1.

⁸⁷Id. § 7-27-5.2.

⁸⁸Id. § 7-27-5.3.

⁸⁹Id. § 7-27-5.4.

⁹⁰Id. § 7-27-5.5.

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Deposits in New Mexico banks have the obvious purpose of making money available for borrowing by in-state businesses and consumers. Although the total amount of the permanent fund that can be deposited in New Mexico banks is not subject to a cap, various other restrictions apply.⁹¹

Investments in pass-through mortgage-backed securities are limited to mortgages on single-family, owner-occupied housing located in New Mexico.⁹² The amount invested in these securities cannot exceed \$100,000,000.⁹³

New Mexico business investments are permitted for two types of loans. The first type of investment involves loans guaranteed by the federal Small Business Administration.⁹⁴ Loans made for these purposes cannot exceed 10% of the book value of the severance tax permanent fund, and the effective yield on these loans must be at least 9.5%.⁹⁵ The second type of investments involves the purchase of corporate bonds rated at least BAA or Bbb in corporations expanding outlets or starting ventures in New Mexico.⁹⁶ These bonds must have a yield equal to the yield on a U.S.

⁹¹Id. § 7-27-5.2.

⁹²Id. § 7-27-5.3(F).

⁹³Id. § 7-27-5.3(A). The statute is unclear whether this is an annual limit or a total limit.

⁹⁴Id. § 7-27-5.4(A).

⁹⁵Id.

⁹⁶Id. § 7-27-5.4(B).

Treasury Bill of comparable maturity.⁹⁷ An investment in any single corporation cannot exceed \$20,000,000 (or 100% of the cost of the New Mexico venture if less than \$20,000,000).⁹⁸ The total amount invested in this type cannot exceed 10% of the book value of the fund.⁹⁹

The final category of investment aimed at stimulating the New Mexico economy applies to educational loan notes.¹⁰⁰ These notes provides funds for student loans. The severance tax permanent fund may invest \$10,000,000 per year in such notes, but the aggregate amount invested cannot exceed 10% of the book value of the fund.¹⁰¹ While this fund may be a potential source of revenue for the water rights purchase aspect of state appropriation, monies contained in the permanent fund cannot currently be used to purchase water rights because such a purpose is not permitted by applicable statutory provisions. Nonetheless, the legislature could add a statutory provision that would permit the use of permanent fund monies to purchase water rights. The possibility of using permanent fund monies in this way is discussed below in Part III(c).

⁹⁷ Id. § 7-27-5.4(B)(2).

⁹⁸ Id. § 7-27-5.4(B)(1).

⁹⁹ Id. § 7-27-5.4(B).

¹⁰⁰ Id. § 7-27-5.5.

¹⁰¹ Id.

b. Income from State Lands

New Mexico receives a sizable amount of revenue from leasing state lands. Most of the revenue comes from oil and gas leases, which pay substantial royalties. These oil and gas royalties amounted to \$175,324,783 for the fiscal year 1985-86 and are paid to the state permanent fund (not to be confused with the severance tax permanent fund).¹⁰² The income generated by the permanent fund is distributed to designated state institutions (mostly educational institutions).¹⁰³ These funds are committed to specific uses and are not currently available to pay for the programs recommended by this study. Finally, invested funds can be placed in enumerated investments, which do not presently include the purchase of water rights.¹⁰⁴ However a statutory amendment could make this possible.

c. Permanent Reservoirs for Irrigation Purposes Income Fund

The Interstate Stream Commission does have authority to spend money from the Permanent Reservoirs for Irrigation Purposes Income Fund¹⁰⁵ to engage in water related activities that could include state appropriation projects.¹⁰⁶ The source of revenue

¹⁰²Annual Report: 1985-86, supra note 12, at 45.

¹⁰³Id. § 19-1-20.

¹⁰⁴Id. § 6-8-9.

¹⁰⁵Id. § 19-1-17.

¹⁰⁶Id. § 72-14-19.

for this fund is income from sales and royalties from state lands.

d. Borrowed Funds

Governments requiring funds for capital investments frequently borrow funds through the issuance of bonds. In most cases, the interest paid on these bonds is exempt from the federal income tax.¹⁰⁷ Therefore, the amount that state and local governments must pay as interest is usually well below what they would otherwise pay if the interest they paid was subject to the federal income tax. Bonds issued by state and local governments are rated by national rating services. The ratings received on these bonds is intended to reflect the credit worthiness of state or local governments. A predominant factor in determining credit worthiness is the strength of the state or local government's tax base.

A large amount of state level borrowing in New Mexico is done through the severance tax bonding fund. The tax base used to pay interest and principal on these bonds are specifically designated severance taxes.¹⁰⁸ The statutory purpose of bond issues is to raise revenues (1) for constructing buildings for state institutions and (2) for funding state water projects.¹⁰⁹ In the case of state water projects, the statute requires that

¹⁰⁷I.R.C. § 103(a) (1986).

¹⁰⁸Id. § 7-27-6.

¹⁰⁹Id. § 7-27-27.

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project revenues left over after paying project operation and maintenance costs be paid to the severance tax bonding fund.¹¹⁰ Severance tax bonds, therefore, could provide a major source of revenue for funding the programs recommended by this study.

In addition to the severance tax bonding fund, New Mexico has established a special fund to issue water conservation revenue bonds.¹¹¹ The proceeds from these bonds are to be used to pay for the construction and administration costs of authorized water projects.¹¹² Water projects are defined broadly and would include a state-funded water rights acquisition program initiated for the purpose of conserving or distributing water for present or future consumption for public, domestic, industrial, agricultural, and other beneficial uses.¹¹³ The projects contemplated are carried out by the Interstate Stream Commission.¹¹⁴ This statutory authority could also be used to provide funding for the programs recommended by this study.

Federal Income Tax Implications: The use of borrowed funds to purchase water rights for resale, however, will be severely limited because of restrictions contained in the Internal Revenue Code. These restrictions will cause certain bond issues to lose

¹¹⁰Id.

¹¹¹Id. § 72-14-13 & 15.

¹¹²Id. § 72-14-14.

¹¹³Id. § 72-14-33.

¹¹⁴Id. § 72-14-1, 3.

their tax-exempt status, thereby causing the interest on the bonds to be subject to the federal income tax in the hands of the investor. Presumably, New Mexico would not issue bonds for purchase and resale of water rights unless they were tax exempt. The application of these federal restrictions are outlined below.

If New Mexico were to purchase water rights with the proceeds of a bond issue and then lease those water rights to anyone for use in a trade or business (such as farming, mining, or industrial uses), then the bond would be considered a private activity bond.¹¹⁵ A private activity bond is not entitled to tax-exempt status unless a statutory exception applies.¹¹⁶ One possible exception applies to bonds issued to construct water supply projects.¹¹⁷ This exception, however, is narrow and would not apply to a simple leasing situation.¹¹⁸

¹¹⁵I.R.C. § 141(b)(1) & (2) (1986). Under this provision, a bond is a private activity bond if more than 10% of the proceeds are used for any private business use and if more than 10% of the principal will be repaid out of payments received from those using the property in a business. Proceeds of a bond issue are deemed to be used for a private business use if the property acquired with the bond proceeds is used in a trade or business. See Treas. Reg. 1.103-7(b)(3)(ii), which states that if bond "proceeds are to be used to construct facilities to be leased or sold to any nonexempt person for use in a trade or business it carries on, such proceeds are to be used in a trade or business carried on by a nonexempt person and the debt obligations comprising such issue satisfy the trade or business test."

¹¹⁶Id. § 103(b)(1).

¹¹⁷Id. § 142(a)(4).

¹¹⁸See Treas. Reg. 1.103-8(h).

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If New Mexico did not lease the water rights to any person, then the bonds used to produce the revenues to buy such water rights would have tax-exempt status.¹¹⁹ One possible way of avoiding the necessity of leasing the water rights is for New Mexico to purchase a future interest in the water right or to buy an option to purchase the water right at a stated price at some date in the future. In this way, the proceeds of the bond issue would not be used to purchase property that is then used in a trade or business.¹²⁰

If New Mexico used borrowed funds to construct a water supply project and if a significant amount of the water were available for business or agricultural purposes, then the bonds would still be private activity bonds.¹²¹ These bonds, however, would come within a specific exception for water facilities.¹²² After 1986, all types of these permitted private activity bonds will be subject to an overall cap. In 1987, New Mexico will be able to issue only a total of \$125,000,000 of permitted private activity bonds.¹²³ In 1988, the cap will drop to \$75,000,000 and remain at that level for subsequent years.¹²⁴ Therefore, borrowing for

¹¹⁹I.R.C. § 103(a) (1986).

¹²⁰Id. § 141(b)(1).

¹²¹See id.

¹²²Id. § 142(a)(4).

¹²³Id. § 146(b)(1), (d)(1)(B).

¹²⁴Id. § 146(d)(2)(B).

these types of projects may be limited depending on the other borrowing needs of the state.

IV. New Revenues

If current revenues are insufficient to pay for the programs recommended by this study, then New Mexico will have to look to new sources of revenue. Realistic sources of new revenues are (1) increases in existing taxes, (2) imposition of new taxes, (3) payments received on the lease of state-owned water rights, and (4) investment funds from the permanent fund.

A. Increases in Existing Taxes

If revenues from current taxes are insufficient, then raising existing taxes is always a possibility. In deciding what taxes to increase, the legislature should be aware of the tax capacity of New Mexico's different tax bases. The Advisory Commission on Intergovernmental Relations has issued a report in which the tax capacity of each state is analyzed. The tax capacity of each state is determined by reference to a theoretical tax system applied to actual tax bases of each state. Tax bases are adjusted to reflect the actual economic resources of each state.

The most recent information from the Advisory Commission's study applies to 1982.¹²⁵ This study shows that New Mexico has substantial tax capacity, but not in all of its tax bases. For example, general sales taxes and severance taxes are listed as

¹²⁵ Advisory Commission on Intergovernmental Relations. Tax Capacity of the Fifty States: 1982 77 (1985).

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substantially in excess of the state's tax capacity. In contrast, selective sales taxes, license taxes, and corporate income taxes are close to capacity. Finally, individual income and property taxes are listed as far below capacity. Based on the findings of the Advisory Commission's study, New Mexico would be in the best position, if it chooses to raise taxes in a general way to pay for state appropriation. This can be done by increasing income¹²⁶ or property taxes.

An increase in the income tax, however, has two basic disadvantages. First, the legislature is usually reluctant to increase the income tax on a permanent basis. Second, the funds generated by an increase in the income tax will likely be earmarked for the general fund. These increased tax revenues would be available for general expenditures. Periodic expenditures for the water programs recommended by this study would have to compete with other programs. Because the programs recommended by this study require a constant source of revenue over a substantial period of time, it is crucial that any new tax revenues be earmarked for such programs.

Likewise, an increase in property taxes may not be workable. Under the current statutory framework, property tax revenues go directly to the counties. Therefore, the state would not have available to it any additional revenue if property taxes were

¹²⁶The remaining tax capacity of the income tax in New Mexico may have decreased because of the recent increase in the income tax.

increased. For these tax revenues to be available for use in state water programs, the property tax statutes would have to be amended so that some or all of the additional tax revenue would go to the state and be earmarked for water programs.

B. New Taxes

New Mexico already imposes taxes on the traditional tax bases used by most states. The potential for the creation and imposition of new taxes is limited. Therefore, serious consideration for new taxes should be limited to taxes imposed on the beneficiaries of expanded water rights, acquisition and water use.

Water rights and water use are already subject to two forms of taxation: the property tax and the gross receipts tax. The property tax applies indirectly to water rights because these rights increase the assessed value of real property. Property tax revenues attributable to the value of water rights are not distinguished from other property tax revenues.

The gross receipts tax applies when water is sold by a water utility or local government to water consumers. These tax revenues from the sale of water to water consumers are not currently earmarked. Instead, they, along with other gross receipts tax revenues, are paid to the state for distribution to local governments, to the general fund, and to other specified funds.¹²⁷

Any new water taxes should be specifically earmarked to pay for the implementation of state appropriation programs. New

¹²⁷See discussion above, Part II(1)(a).

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water taxes should be imposed in a manner that reflects the underlying ability to pay of the beneficiaries of the program of water rights acquisition and development. The ability to pay any new tax corresponds roughly to the type of use for the water. For example, agricultural users of water consume large amounts of water relative to the revenues produced from the sale of agricultural products. Furthermore, the agricultural industry already has its water rights and is struggling to survive. An additional tax on agricultural water users is virtually inconceivable. In contrast, industrial and manufacturing uses require lesser amounts of water to produce goods of relatively higher value and could pay more in taxes. Finally, residential use of water involves relatively small amounts of consumption on a per capita basis. The price paid for city or utility-delivered water is attributable in large part to the cost of maintaining a system to pump, treat, and deliver the water. Nonetheless, a relatively nominal tax could be imposed on the quantity of water consumed without undue hardship on the consumer and could conceivably generate a great deal of revenue.

The underlying policy of any new water tax would be to generate sufficient revenues to pay for programs that will insure the availability of adequate water supplies over the long term. Therefore, those who use and consume today and who will benefit from future state growth because of the available water supply should help pay for programs that will provide adequate water supplies for future generations.

Based on the foregoing, after the proposal stage is completed and regional proposals worthy of funding are adopted, the legislature might consider imposing a new water tax along the following guidelines:

- (1) Non-agricultural Water Use Tax: This tax would apply to all non-agricultural water uses (mainly manufacturing, industrial, mining, and energy generation activities). Water uses excepted from this tax would be water used from domestic wells; water delivered through a municipal, county, or water utility system; water used for conservation purposes by federal, state, or local governmental entities; and special uses that because of their economic circumstance, the legislature concludes should not be subject to tax. The rate of tax would be imposed at a dollar rate per unit of water used. For those non-agricultural users holding water rights defined in terms of "acre foot per year," the rate of tax could be imposed at a stated dollar rate per acre foot of water rights held. In the case of leased water rights, a special rule may be necessary to eliminate the possibility of double taxing the same water right.
- (2) Residential Water Tax: This tax would apply to all residential water consumers who receive water from a municipal, county, or water utility delivery system. This tax could be imposed in one of two ways. First, the tax could be based on a stated dollar amount per unit of water consumed. Or, the tax could be levied as

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a percent of the amount charged for the water delivered. To preserve uniformity in taxation, a tax based on the quantity of water consumed would be preferable. For some residential consumers, the tax may be beyond their ability to pay. Therefore, a low income exemption should be available. The exemption could be based on guidelines currently in the statute that provides for a refundable credit for low income taxpayers. A gross receipts tax already applies to sales of water to water consumers. To avoid double taxation the legislature should consider excluding water sales from the gross receipts tax. Implementation of a specific water use tax and elimination of the gross receipts tax would lessen the overall tax burden on the residential consumption of water.

The revenues from these new taxes should be earmarked for the programs recommended by this study. A virtue of these new taxes would be that they force water users to shoulder the economic burden of insuring water supplies for subsequent generations.

A very practical problem associated with these taxes involves the cost of administering them. Any new tax entails the creation of a tax administration structure. The Department of Taxation and Revenue could administer the collection and enforcement of these taxes. The Department, however, would have to implement a new tax collection structure. The general success of any tax collection system depends on the ease of ascertaining the

tax liability and on the centralization of tax collection. The amount of the taxes outlined above would be easy to ascertain and could be collected periodically through existing tax returns. The residential water tax could be collected by the water supplier through its normal billing of customers. In any event no new burden should be placed on the tax collecting entity without funds for administration.

C. State Leasing of Water Rights

Assuming New Mexico begins acquiring a substantial amount of water rights around the state, revenue could be generated by leasing the water rights to agricultural and commercial users. The City of Albuquerque already leases some of its water rights to others for periods during which the city does not need to use its water. New Mexico could adopt the same practice.

The potential revenues generated will depend on a number of factors. First, the price of leased water will vary over time, from use to use, and from region to region. Therefore, the amount the state could charge would depend on these varying market conditions. Second, the amount of leasing that the state could undertake will depend on the quantity of water rights that the state acquires. If the state acquires a small amount of water rights, then leasing revenues will be relatively small. In contrast, sizable revenues could be generated if the state became a substantial owner of water rights. Third, the price the state actually charges may depend on policy concerns other than maximizing revenues. For example, the state may decide to make its water available at bargain prices in order to stimulate targeted

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agricultural or commercial activities. The state might very well conclude that stimulation of the state's economy is a higher priority than raising revenue through water leasing.

An immediate problem of using state leasing revenues exclusively for funding the programs recommended by this study is that some funds will be necessary in the short term to purchase water rights. If these funds are borrowed by the state through issuance of bonds, then the interest paid on the bonds will almost certainly be subject to federal income tax (see discussion above). As a result, the cost of borrowing the funds will be fairly high, perhaps prohibitive. Therefore, the state, as a practical matter, will have to use non-borrowed funds to purchase water rights it plans on leasing to others.

D. Investment Funds From the Severance Tax Permanent Fund

As noted above (see discussion, Part II(2)(a), the Severance Tax Permanent Fund contains substantial monies that the state invests to produce income. The purchasing and leasing of water rights is not currently one of the permitted investments of the permanent fund. The legislature, however, could enact a statute permitting the permanent fund to invest a stated percentage of its book value in water rights.

Investment in water rights by the permanent fund has two advantages. First, current market forces lead to the conclusion that the value of water rights will increase dramatically over the long term. Although the immediate return on its investment may be small, the state could benefit substantially by owning property whose value will increase substantially. Second, the

state, by owning some water rights, will be in a position to control the use of water for purposes most beneficial to the economy and general welfare of the state.

IV. Recommendations for Possible Funding Sources for Implementation of State Appropriation

A. Revenues Sources

1. New Water Tax

As discussed above (Part III(2)), the legislature could impose a water tax designed to generate a level of revenue sufficient to pay for the programs recommended by this study. The tax will generally apply to water users who would benefit from acquiring water reserved for the future. Partial or complete relief should be made available to low income taxpayers by way of a credit or rebate on their state income tax. The rate of tax, although relatively low for all taxpayers, will vary from use to use. Absent a dramatic economic turn around in rural areas of the state, agricultural and individual domestic users should be exempt from the tax. The revenues generated by this tax should be earmarked for use in the programs this study has recommended.

2. Gross Receipts Tax on Water Sales

Instead of a new water tax, the legislature could earmark gross receipts tax revenues generated by water sales to be used exclusively to fund the programs this study has recommended. The majority of this revenue would come from the sale of water by water utilities (whether government or privately owned). These water sales are currently subject to the New Mexico gross receipts tax.

3. Investment Funds from the Severance Tax Permanent Fund

The legislature should permit the severance tax permanent fund to purchase New Mexico water rights. As with other non-market investments, the legislature could restrict the amount of permanent fund that could be used for this purpose.

4. Borrowed Funds

As already discussed (Part II(3)), the severance tax bonding fund has the express statutory authority to issue bonds to fund water projects in New Mexico. Because any water rights purchased could not be leased to others without losing the federal income tax exemption, these borrowed funds should be used to purchase future interests in water rights. This could be done by buying a remainder interest in the water right or by purchasing an option to purchase the water right at a stated price at some future date.

B. Handling Revenues

To the extent a permanent source of tax revenues is earmarked to pay for the programs recommended by this study, a series of related special funds should be established. First, a central water fund should be established. Earmarked revenues will then be paid into this fund. Separate disbursements will then be made to individual funds having designated purposes. One fund should be established to provide operating revenues to the state agency administering specific water programs. Another fund should be established to make grants to counties and municipalities in need of planning future water needs. Finally, a third

fund should be established for the purpose of purchasing water rights on behalf of New Mexico.

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TAX INCENTIVES FOR FACILITATING STATE ACQUISITION OF WATER RIGHTS

Although not relevant to the proposal submission stage of state appropriation, the study team has included this chapter on tax incentives for facilitating state acquisition of water rights because it will be highly relevant to the implementation stage of a state appropriation program.

As a means of achieving specific policy goals, a government often uses its tax system to stimulate desired activity. For example, New Mexico has attempted to further the use of renewable energy resources by providing an income tax credit to those taxpayers who install solar energy devices in their homes or businesses.¹ In a similar way, the federal government has attempted to stimulate the rebirth of aging urban areas by providing an income tax credit for the rehabilitation of historic structures.² The purpose of this chapter is to identify current tax incentives that can be used to facilitate state acquisition of water rights. This chapter also suggests some ways that New Mexico can provide additional tax incentives.

¹N.M. Stat. Ann. 7-2-16 (Repl. Pamp. 1986).

²I.R.C. 46(a)(3), 46(b)(4)(A), 48(g) (as amended by the Tax Reform Act of 1986).

A. Charitable Contributions -- Donations of Water Rights1. Overview

A taxpayer who makes a donation of property to a governmental entity is generally entitled to a charitable contribution deduction on his federal and New Mexico income tax return.³ As a general rule, the amount of the deduction is equal to the fair market value of the property on the date of the transfer.⁴ An important exception applies to property that would generate ordinary income if the taxpayer sold the property.⁵ In such cases, the deduction is reduced by the amount of the hypothetical gain that would have been ordinary income had the taxpayer sold the property at its fair market value.⁶

For the donation to qualify as a deductible charitable contribution, the gift must be made exclusively for public purposes.⁷ In general, most gifts of property to a governmental entity

³I.R.C. § 170(a); N.M. Stat. Ann. § 7-2-2(M)(5) (Repl. Pamp. 1986). The New Mexico provision permits New Mexico taxpayers to take those itemized deductions permitted on the federal income tax return.

⁴Treas. Reg. 1.170A-1(c)(1).

⁵I.R.C. § 170(e)(1)(A). It is actually more accurate to say that this exception applies where the sale of the property would produce gain other than a long term capital gain. Therefore, this exception would apply to a water right held by a taxpayer for six months or less because the sale of such a water right at a gain would produce a short term capital gain. I.R.C. § 1222(1).

⁶I.R.C. § 170(e)(1)(A).

⁷I.R.C. § 170(c)(1).

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will be considered to be made exclusively for public purposes⁸ unless the donation directly benefits the donor/taxpayer in some way. For example, a taxpayer who contributed a water pipeline to a city could not take a charitable contribution deduction because the pipeline provided a water supply directly to the taxpayer's residence and to a subdivision that the taxpayer was developing.⁹ In contrast, a donation used to benefit the public generally will qualify. Thus, unrestricted donations to a township for the construction and operation of a water and sewer system are deductible.¹⁰ Accordingly, a taxpayer making an unrestricted gift of a water right to New Mexico should be entitled to a deduction. However, a gift probably will not qualify if the donor/taxpayer expressly requires that the state lease the water back to him.

In addition, a gift of a partial interest in property generally will not qualify as a deductible charitable contribution.¹¹

⁸IRS has adopted an expansive view in determining what activity constitutes a "public purpose." For example, a state-chartered commission engaged in studying and promoting industrial development has a public purpose. See Rev. Rul. 79-323, 1979-2 C.B. 106 (commission had authority to acquire and develop real property for use of private industries).

⁹Dockery v. Commissioner, 37 TCM (CCH) 317, 320-22 (1978). See Wolfe v. Commissioner, 54 T.C. 1707 (1970) (taxpayer donation of interest in sewer and water system not deductible because city's operation of system provided water and sewer service directly to taxpayer).

¹⁰Rev. Rul. 58-473, 1958-2 C.B. 100.

¹¹I.R.C. § 170(f)(3)(A). For a gift of a partial interest that is a life estate, an estate for a term of years, or a remainder, the transfer must meet a set of fairly strict statutory and regulatory requirements. In general, these provisions require that the property transferred produce a

The restriction on transfers of partial interests is subject to two relevant exceptions that could apply in the case of donations of water rights. First, a taxpayer can still make a qualifying donation of an undivided interest in property.¹² For this exception to apply, the taxpayer must transfer an undivided portion of his entire interest in the property such that the donee shares proportionately in each and every substantial right in the property.¹³ Essentially, New Mexico must become a tenant in common with the taxpayer. This type of transfer will produce some practical difficulties. For example, if the donor/taxpayer continued using the water right, then New Mexico, as a cotenant, would be entitled to some payment for the taxpayer's exclusive use of the water. A second exception applies to a remainder interest that is eligible for special treatment as "qualified conservation property."¹⁴ Because of the importance of this exception, it is treated below in more detail. Even when a taxpayer makes a qualifying charitable contribution, the amount of the deduction may be reduced by percentage limitations depending on the type of property and the income of the donor.

2. Qualified Conservation Contribution

As already discussed, a gift of a remainder interest in a

specified quantity of income for distribution to the beneficiary holding the income interest. See Treas. Reg. 1.170A-6.

¹²I.R.C. § 170(f)(3)(B)(ii).

¹³Treas. Reg. 1.170A-7(b)(1).

¹⁴I.R.C. § 170(f)(3)(B)(iii).

water right will not usually qualify as a charitable contribution. An important exception, however, applies to a "qualified conservation contribution."¹⁵ The practical advantages of making a gift of a remainder interest are fairly obvious. First, the taxpayer receives a current deduction¹⁶ for a transfer of property that in substance takes effect in the future. Second, the taxpayer does not relinquish the right to use the water during the period of the life tenancy or of the specified term of years. In this way, the taxpayer gets the best of both worlds: a current deduction and the right to continue using the water. Certain taxpayers will be more willing to make a donation of a water right if they can qualify their gift under the exception for a "qualified conservation contribution." To come within this exception, the contribution must meet three requirements. The transfer must be a transfer of (a) a qualified real property interest, (b) to a qualified organization, (c) exclusively for conservation purposes.¹⁷

a. Qualified Real Property Interest

To meet this requirement, the property must be an interest

¹⁵See I.R.C. § 170(h).

¹⁶The amount of the deduction is equal to the present value of the remainder interest. This value is determined by reference to the life expectancy of the life tenant and a present value calculation using an assumed discount rate. See Treas. Reg. 1.170A-14(h)(2).

¹⁷I.R.C. § 170(h)(1).

in real property that is the taxpayer's entire interest, a remainder interest, or a restriction granted in perpetuity.¹⁸ The critical question in the case of water rights is whether such rights constitute real property within the meaning of the federal statute.

The real property issue is less than clear. Neither the statute nor the applicable regulation defines real property. As a result, one may assume that Congress meant the term "real property" to have its ordinary meaning. In absence of specific federal definition, state law would define. In the case of water rights, their classification as real property does depend on local law. In New Mexico, the courts have said that water rights are a type of real property.¹⁹ Therefore, a water right should be considered a form of real property within the meaning of the federal statute. IRS, however, might contend that water rights are not the kind of real property that Congress had in mind. This ambiguity in the statute could be removed by an IRS ruling.

b. Qualified Organization

The transfer of property must be to a qualified

¹⁸I.R.C. § 170(h)(2).

¹⁹New Mexico Products Co. v. New Mexico Power Co., 42 N.M. 311, 77 P.2d 634 (1938); Posey v. Dove, 57 N.M. 200, 257 P.2d 541 (1953).

organization.²⁰ A qualified organization includes a governmental entity.²¹ Therefore, a transfer to an entity such as the Interstate Stream Commission would be a transfer to a qualified organization.

c. Exclusive Conservation Purpose

To be deductible, the contribution must also meet the conservation purpose requirement.²² The statute and regulation make reference to a variety of purposes that would qualify. For example, areas preserved for public recreation and education serve a conservation purpose.²³ A water right transferred to the state could be retired in order to maintain bosque areas along a river for outdoor recreation and education of the general public.

Another qualifying conservation purpose involves ecosystem preservation for fish, wildlife, or plants.²⁴ Certainly, maintaining a reservoir level would have the effect of preserving an ecosystem, which includes habitat for fish, wildlife, and plants. A reservoir ecosystem would be preserved where a donor/taxpayer transfers a remainder interest in a water right that enables retirement of the water right if stream flows feeding a reservoir become impaired. For the conservation purpose to be met in the

²⁰I.R.C. § 170(h)(1)(B).

²¹I.R.C. §§ 170(h)(3)(A); 170(b)(1)(A)(v); 170(c)(1). See Treas. Reg. 1.170A-14(c)(1)(i).

²²I.R.C. § 170(h)(1)(C).

²³I.R.C. § 170(h)(4)(A)(i).

²⁴I.R.C. § 170(h)(4)(A)(ii).

case of a transfer of a remainder interest, the life tenant must be subject to restrictions that will preserve the specific conservation values.²⁵

d. Valuation of Donation

Of primary concern to the donor/taxpayer is the amount of the charitable contribution he will be able to take as a deduction. The valuation of a remainder interest is determined by using tables prescribed by IRS.²⁶ The current tables contain an assumed interest rate of 10%.²⁷ The life expectancy tables are based on recent census data.²⁸ The more remote the remainder, the lower its present value.

Example: T gives the Interstate Stream Commission a remainder interest in water rights that have a current fair market value of \$10,000. Assume T is 50 years old and that T's water rights pass to the Interstate Stream Commission when T dies. The value of the remainder interest is \$1,525.70 based on the current regulations.

If T were 40, then the value of the remainder would be \$842.90.²⁹

3. Tax Benefits of Charitable Deduction

The potential tax savings available to a New Mexico taxpayer is a function of the tax rate of the federal and state income taxes. The higher the rate of tax, the larger the tax savings

²⁵Treas. Reg. 1.170A-14(g)(1) (second sentence).

²⁶See Treas. Regs. 1.170A-14(h)(2); 1.170A-7(c).

²⁷Treas. Reg. 20.2031-7(f).

²⁸See Treas. Reg. 20.2031-7(f), Table A.

²⁹Id.

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produced by a particular deduction. To the contrary, the lower the rate of tax, the smaller the tax savings. The potential tax savings available to a New Mexico taxpayer can be illustrated by the following example.

Example: In 1988, T is an individual who is subject to the highest federal (33%) and New Mexico (8.5%) income tax rate. At the end of 1988, T transfers a water right having a value of \$10,000 to New Mexico. T had acquired this water right 20 years before at no cost by making an application.

By making this donation to New Mexico, T will be entitled to a charitable contribution deduction on his federal and state income tax returns. The \$10,000 deduction will reduce his federal income tax by \$3,300 and his state income tax by \$850, for an aggregate tax savings of \$4,150.

If T had instead sold this water right for \$10,000 at the end of 1988, then he would have had a taxable gain of \$10,000. This \$10,000 gain would have generated a federal income tax of \$3,300 and a New Mexico income tax of \$850. The aggregate tax for 1988 would be \$4,150. Put another way, T has \$5,850 left of the \$10,000 T received from the buyer of the water right.

By comparing T's after-tax position in the two alternatives above, one notes that T is further ahead by selling the water right (\$5,850 in after-tax cash) than by making the donation (\$4,150 in reduced tax liability). Therefore, T has no economic incentive to donate the water right to New Mexico. Instead, T's motives would have to be charitable.

4. Tax Credit for Water Right Donations

In order to improve the tax benefits available to New Mexico taxpayers making donations of water rights, the legislature should consider the creation of an income tax credit measured by a percentage of the value of the water right transferred. If, in the example discussed above, T were given (in addition to the

charitable contribution deduction) a credit against his New Mexico income tax equal to 20% of the value of the water right, then T would be better advised to make the donation than to sell the water right.

Example: In addition to the facts discussed above in the last example, assume that New Mexico provides a 20% income tax credit for water rights donated to the state. If T donated a water right worth \$10,000 to New Mexico, then T would be entitled to a credit of \$2,000 against his New Mexico income tax.

T's total tax savings in 1988 would be \$6,150 (\$3,300 in federal income tax, \$850 in New Mexico income tax, and another \$2,000 in New Mexico income tax that is reduced by the credit). This tax savings would exceed the after-tax proceeds left T if he had sold the water rights. Therefore, with a 20% income tax credit, T is better advised to make the donation.

The use of an income tax credit is not without cost to New Mexico. In the example above, income tax revenues will decline by \$2,000 because of the credit. However, the state will have acquired water rights worth \$10,000 with an additional expenditure of \$2,000. The legislature may find that acquiring some water rights this way is more cost effective than purchasing water rights directly.

In the past, New Mexico has used tax credits to implement important state policies. For example, the various energy credits available to New Mexico taxpayers reduced New Mexico income tax revenues by about \$9.9 million for the tax year 1985.³⁰ Perhaps a credit for donations of water rights would be a relatively inexpensive way for New Mexico to acquire water rights. The

³⁰Taxation and Revenue Department of New Mexico, Annual Report -- 74th Fiscal Year: 1985-1986, at 48.

existence of a tax credit might induce some individuals to make donations of water rights, especially in cases where agricultural land is being converted over to nonagricultural uses.

B. Sale of Water Rights

1. Installment Sales Reporting

Where a taxpayer sells property on the installment basis, installment sale reporting of the gain may be advantageous because the taxation of the gain is postponed. Under the installment sale method of reporting income, the seller includes in income only that portion of the annual payments allocable to the actual gain.³¹

Example: Assume T sells New Mexico a water right for \$10,000. Assume further that T bought the water right five years ago for \$4,000. New Mexico agrees to pay T \$1,000 per year for 10 years, plus an amount of stated interest on the unpaid balance. In each year that T receives a \$1,000 payment (not including the interest portion), T includes \$600 in income. This amount is included because 60% of the \$10,000 sales price is made up of a \$6,000 profit (\$10,000 sales price less the \$4,000 investment equals a \$6,000 profit).

Of course New Mexico, as the buyer, will usually prefer to buy water rights on the installment basis. In that way, the state would not have to incur such large up-front costs.

After 1986, installment sale reporting of income will be subject to new and very stringent rules that have the effect of treating an installment sale as if it were wholly or partially a cash sale.³² As a result, a seller may have to report all or

³¹I.R.C. § 453.

³²See I.R.C. § 453C (added by the Tax Reform Act of 1986).

part of his total gain in the year the sale takes place, even though the seller has not received any payments. Fortunately, an important exception to this new rule applies to property used in the trade or business of farming or ranching.³³ Therefore, a farmer or rancher who sells a water right to New Mexico will still qualify for installment sale reporting and will not be subject to the new rules. Other taxpayers, however, will be subject to the new rules and may find that an installment sale to New Mexico (or to any other buyer for that matter) will produce largely negative tax consequences.

2. Treatment of Interest on Installment Sales

When a buyer purchases property by making payments in installments, he usually agrees to pay interest at a stated rate on the unpaid balance. The seller who receives this interest reports it as ordinary interest income.³⁴ In some cases, taxpayers who have sold property to governmental entities on the installment basis have been successful in treating the interest payments they receive as tax exempt.

New section 453C, which is an apt example of hyper-complexity in a tax statute, has the effect of taking a certain portion of debt that a taxpayer owes and treating all or part of it as if it were a cash payment on the installment obligation. The proper application of this section requires the use of a complicated formula.

³³I.R.C. § 453C(e)(1)(B)(ii) (added by the Tax Reform Act of 1986); I.R.C. § 2032A(e)(4).

³⁴I.R.C. § 61(a)(4).

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The tax-exempt nature of the interest payments depends on the application of IRC sec. 103. Section 103 provides, as a general rule, that interest paid on any state or local bond is excluded from federal gross income. A bond is defined as "an obligation of a state or political subdivision thereof."³⁵ Tax-exempt status is not available for "private activity bonds,"³⁶ which basically include those bonds the proceeds of which are used to acquire property that is then used in a private trade or business.³⁷ Therefore, if New Mexico purchased a water right from a farmer on the installment basis and then leased the water back to the farmer, the installment indebtedness, if it is a bond, would be treated as a private activity bond that is not eligible for tax-exempt status. If, however, New Mexico purchased the water right on an installment basis and did not lease the water for use in a private trade or business, then the interest on the installment obligation might be eligible for tax-exempt treatment.

Courts have said that an installment indebtedness issued by a governmental entity can qualify as a "bond" for purposes of section 103.³⁸ To qualify, however, the indebtedness must have a

³⁵I.R.C. § 103(c)(1).

³⁶I.R.C. § 103(b)(1).

³⁷I.R.C. § 141 (added by the Tax Reform Act of 1986).

³⁸King v. Commissioner, 77 T.C. 1113, 1121 (1981); Stewart v. United States, 86-1 USTC 83,810 (D. Ariz. 1986); Thompson v. Commissioner, 45 TCM (CCH) 693, 711 (1983).

stated interest rate and must be lawfully incurred by the governmental entity as part of its borrowing power. In at least one case, a court has held that interest on an installment indebtedness incurred by a county government did not qualify for exclusion under section 103 because the county government was not authorized to incur the debt.³⁹

The lesson to be learned, of course, is that the governmental entity that purchases water rights on an installment basis should have the express statutory authority to do so. If the Interstate Stream Commission is the governmental entity that will be purchasing water rights, then it should be authorized to acquire them by incurring an installment indebtedness.

C. Leasing of Water Rights

If New Mexico acquires water rights and then leases them for use by a taxpayer that uses them his trade or business, then the lease payments will be a deductible expense for the taxpayer.⁴⁰ The advantageous tax treatment becomes clear when one compares the position of the water lessee with that of the water purchaser. The water lessee receives a current deduction for lease payments when and as made. In contrast, the water right purchaser receives no current deduction because he has acquired a capital asset having a useful life extending beyond one year. To make matters worse, the owner of a water right is not entitled to any

³⁹Power Equipment Corp. v. United States, 748 F.2d 1130, 1137 (6th Cir. 1984).

⁴⁰I.R.C. § 162(a)(3).

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deduction for depreciation or amortization of the water right because it is a right in perpetuity. In this regard, a water right is analogous to land, for which no depreciation deduction is permitted because land has an indefinite useful life. See Treas. Reg. 1.167(a)-2. However, a taxpayer holding an exhaustible groundwater right is entitled to a deduction for depletion of the water. United States v. Shurbet, 347 F.2d 103 (5th Cir. 1965).

Because of the tax advantages of leasing, a number of farmers and ranchers may be inclined to lease water rights instead of purchasing them. This tax climate will benefit New Mexico to the extent it desires to lease water rights for use by others in a trade or business.