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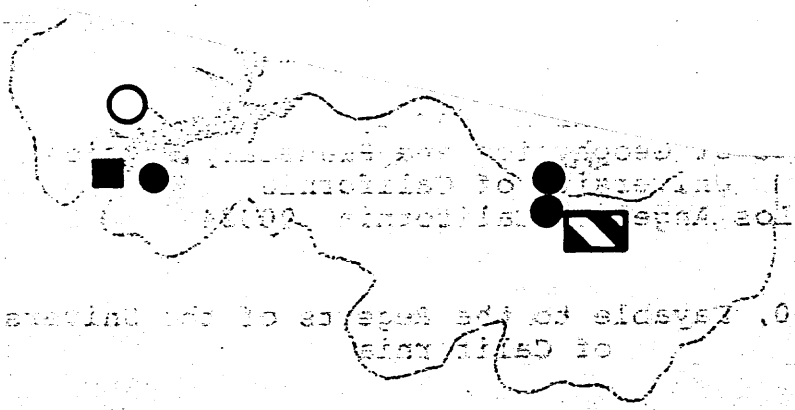

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ABSTRACT

Traditional water policy in the Colorado River Basin has been under stress as new issues of water quality and energy development have arisen. Increasing salinity, demands from Mexico for improvements in the quality of water it receives from the basin, and 1972 water quality legislation have imposed new burdens on the decision-making system. The national demand for energy has led to competition for scarce water supplies and has threatened the existing pattern of resource use and style of living. The western state publics and their leaders appear to accept energy development but fear the consequences both for the environment and for their communities. The traditional politics of water development projects remains a strong feature of present decision-making, but there are significant weaknesses in the orientation and focus. There exist numerous organizations in the Rocky Mountain States and the Colorado River Basin that provide leadership and mobilize interests, but these organizations must be strengthened in order to meet the present political, environmental, and social challenges.

WATER POLICY AND DECISION-MAKING IN THE COLORADO RIVER BASIN

WATER AND ENERGY POLICY IN THE COLORADO RIVER BASIN

Water policy in the Colorado River Basin has always reflected a complex set of political forces that transcend the boundaries of the river basin itself. The boundaries of the political system for the basin extend to state capitals of the seven states through which the Colorado's tributaries flow, to the nation's capital, to Mexico City, and potentially to the provincial and dominion capitals of Canada. The Colorado River is an international stream as well as the major stream of the southwestern part of the United States. As a western stream, it figures into water-management and resource-management thinking for the entire western part of the country. In addition, water-management policies are inevitably linked with general policy considerations in both the domestic and international spheres. Decisions on water policy affect and are affected by other policy issues, and the quality of those decisions therefore must be evaluated in a very broad context.

As vital as water policy has been and continues to be for the states of the Colorado River Basin, it is becoming increasingly difficult to discern what is the most vital issue, particularly in light of the energy needs of the country and the apparent dependence of the country on the fossil fuel resources of the West to meet those needs. Energy policy is becoming the overriding issue for the Rocky Mountain States and water policy may largely reflect the future of energy demand as it impinges on that region. Land use policy, obviously related to the energy issues, is also a critical variable in the determination of the direction in which the region will go. Two close observers of the energy picture as it is developing may be right when they assert

> It is likely that priorities set around water use will play a primary role in determining our (i.e., the Rocky Mountain States) ability to influence, alter or mitigate the impacts of development most threatening to our currently accepted regional identity.[1]

A further complexity in the water policy picture is the issue of pollution, which, in the Colorado River Basin, essentially means salinity. Since the early 1960s federal water pollution control agencies and Lower Basin interests have wrestled with the problem of increased salinity of the river. With the passage of the Federal Water Quality Act Amendments of 1972, the Environmental Protection Agency (EPA) came under increasing pressure to impose water quality standards and to require a plan of implementation to meet those standards.

Complicating the policy picture even more is the fact that the Colorado River is an international watercourse and is therefore subject to the pressures of international politics. Being the upstream nation, and despite the fact that the United States is in a position to injure Mexico with seeming impunity--a posture adopted by many upstream nations throughout the world, the United States has taken a position that reflects its overall perception of self-interest, a perception that includes far more than water matters alone.[2] Moreover, it is clear that international and domestic politics regarding the Colorado River have become firmly intertwined.

The purpose of this Bulletin is to address how the Basin States approach decision-making on water policy matters within the context of more general and sometimes overriding policy issues. It will also examine the extent to which traditional patterns of decision-making may be changing in the light of new policy considerations as they affect the region. It should be stated at the outset that the picture is a complicated one because of the swiftly moving events and the true ambivalence many people feel with respect to given policies.

THE SALINITY ISSUE

The United States has adopted a posture with respect to its relationships with Mexico on matters concerning the Colorado River that clearly reflects international consideration transcending the specific issue of water quality. The consummation of the Mexican[3] Water Treaty in 1944 and the adoption of Minute 242 in 1973 both reflected a desire on the part of the United States to obtain benefits not directly related to the Colorado River Basin itself.[4] In 1944, the goals were both international support during the prosecution of World War II and benefits to be received by U.S. interests on a different international watercourse--the Rio Grande River.[5] In guaranteeing to Mexico water only marginally lower in quality than the water arriving at Imperial Dam, the United States obviously wanted to maintain good relationships with Mexico--to avoid taking the case to the International Court of Justice, and was willing to pay a relatively high cost in order to do so. Moreover, it appears the United States did not want to re-open the treaty despite the fact that it nowhere mentions water quality. While the United States received some direct benefits--particularly because Mexico presumably waived any rights to claim compensation for damage to land in the Mexicali Valley and agreed to this "permanent and definitive" solution of the salinity problem--it appears that the United States sacrificed dollars in the interest of international comity. Those dollars are for the construction of the world's largest desalination plant at Yuma, Arizona; construction of a bypass for drainage water from the Wellton-Mohawk Project; and lining of the Coachella Canal. Capital costs were estimated at $155 million and operating costs at $10 million per year,[6] but estimates in 1976 placed capital costs at $269 million and operating costs at levels substantially above the original estimates.[7] The Commissioner of Reclamation testified in 1976 that "many of the items are still uncertain."[8]

Issues and Interests

Lacking any clear-cut standards for reference, it is difficult to evaluate whether the United States achieved adequate benefits through Minute 242. It is clear, however, that major interests in the seven Colorado River Basin States considered the agreement as a threat to their present and future development.[9] While their representatives were consulted during the negotiations, they concluded that without major legislative action within the United States, not only U.S. dollars but their own interests would be sacrificed on the alter of international comity. Their concern thereby forged a heavy link between domestic and international politics.

The dominant concerns of the seven Basin States were to protect existing developments and to pursue future water resource developments, particularly in the Upper Basin. The adjective "dominant" is used advisedly because there are numerous groups and organizations found in the Basin States which have decidedly different interests--notably in the protection of the environment--and who would forego further water resource development. But their voices are relatively muted and tend to find expression primarily outside the official circles of state and federal agencies.

The developmental interests were threatened in a number of ways that linked domestic and international politics together. Domestically, the Colorado River Basin States faced increasing pressure from the EPA to adopt stream standards for salinity. Both the 1965 Water Quality Act and the 1972 Federal Water Quality Amendments Act required the setting of water quality standards on streams, but until 1972 no standards had been set for salinity. In 1972, after a long process of bargaining, the seven Basin States and the EPA came to an agreement that water quality in terms of salinity would be set at the 1972 levels found in the lower main stem of the Colorado River.[10] The setting of those standards, while

clearly in the interest of the Lower Basin States because of the threat of ever-increasing salinity to the productivity of their lands, inevitably would severely reduce the likelihood of future developments in the Upper Basin.

The Basin States were also threatened by the apparent disinclination of the Nixon and Ford Administrations--and probably future administrations as well--to fund expensive and heavily subsidized irrigation projects. The Office of Management and Budget (OMB) has become an especially ardent opponent in its role of controlling the federal budget and reviewing projects in terms of costs and benefits. If standards were set in the Lower Basin and development projects were considered to be threats to the achievement and maintenance of those standards, OMB would be an even more vigorous and influential critic in the authorizing and appropriating processes.

Salinity Control Program

These several lines of movement in the water-policy-making process came to a climax with the passage of the Colorado River Salinity Control Act of 1974.[11] This legislation in effect forged the political linkage between the domestic political stakes of the seven Basin States and the stakes of the United States in achieving an agreement with Mexico. This legislation authorized the works required to meet the U.S. obligation to Mexico, referred to earlier, as well as four salinity control projects on tributaries to the main stem of the Colorado River above Hoover Dam. The legislation also authorized the study of 12 additional salinity control projects which might be built in furtherance of the salinity control program outlined by the Bureau of Reclamation in 1972.[12]

The circumstances under which this legislation was approved by Congress--and it was approved with little or no opposition--are instructive with respect to these domestic

and international linkages and the leverage of the Colorado River Basin States. The Nixon Administration at first vigorously opposed the salinity control projects on budgetary grounds as well as on the basis of disagreement with the general formula for cost-sharing which placed 75 percent of the burden on the general taxpayer and 25 percent on the Upper and Lower Colorado River Basins.[13] The Basin States adamantly objected to any legislation to fulfill the U.S. obligation under Minute 242 without the authorization of the salinity control projects. It was perhaps inevitable, then, that with the solemn U.S. commitment to Mexico in Minute 242 dependent on action by Congress--and the United States had formally committed itself to seek construction funds "promptly"--that the Administration would accede to the demands of the states for its salinity control projects. The bill for the construction of all the projects necessary to accomplish an effective salinity control program can only be estimated and such bills are almost always underestimated--but it will be in the range of $500 million to $1 billion.[14]

In December 1974, the EPA published in the Federal Register its salinity control policy, building on extensive negotiations with representatives of the Basin States and their recognition that the adoption of salinity standards for the river was required.[15] This policy included the adoption of water quality standards including numeric criteria for appropriate points in the Colorado River system and a plan to achieve compliance with these standards as expeditiously as possible. Subsequent to publication of that regulation, the Salinity Control Forum, a body representing the seven Basin States and including representation of both water development and water quality officials, formulated a plan that was designed to accomplish the goal of maintaining water quality in the Lower Basin at 1972 levels. The plan was approved by the Basin States after both regional and state hearings. EPA representatives worked closely with the Forum and in late 1976 EPA approved the plan.

The Plan and Its Uncertainties

The plan emphasized the construction of the salinity control projects indicated above, but included programs to reduce salinity through the application of the National Pollution Discharge Elimination System to industrial discharges, and to improve water systems management and agricultural practices.[16]

The plan devised by the Salinity Control Forum depended upon the continued willingness of Congress to appropriate money, the realization of the results predicted for such projects in terms of reduced contributions of saline water to the river, the readiness of farmers to adopt improved irrigation practices, and the provision of adequate incentives for the farmers to adopt such practices. It is not unreasonable to call the results speculative in view of the uncertainties involved. For example, when the first four salinity control projects were authorized, there were no feasibility grade reports on them; the definite plan reports presently being prepared by the Bureau of Reclamation are in effect feasibility reports. An illustration of the cost and feasibility uncertainties for the salinity control projects is found in the Crystal Geyser (Utah) project. The estimated construction costs were below $500,000 in 1974,[17] but estimates for fiscal year 1976 had risen to $565,000, and by fiscal year 1977 to $2.75 million owing largely to changes in plans.[19] It now appears that the costs so exceed the benefits of this project that it will not be built. In the 1977 fiscal year budget process, OMB expressed objections to any new projects on fiscal grounds and the Basin States, with or without EPA support, sought to convince OMB that these projects were important in achieving the nation's policy goals with respect to both water and energy while permitting energy development in the Upper Basin. Congress appropriated the money for construction of three of the four authorized projects despite Administration objections. Because of delays in

completing the plan reports, money provided for fiscal year 1977 probably will be used for purchase of rights and project design.

An additional uncertainty concerns the level of streamflow and the levels of depletions through Upper Basin development during the years up to the target date of 1990. Using streamflow figures ranging from an average of 12 maf to 16 maf and depletions ranging in increased usage in the Upper Basin from ca. 1 maf to 2.5 maf, the Work Group of the Forum predicted the ability of the Basin States to meet EPA's standard. Using the Forum's figures, it is clear that under conditions of low streamflow and/or high depletions, the standard cannot be met. The uncertainty was made clear by Myron Holburt of the Colorado River Board of California in 1969 when he demonstrated that there was only a 50-percent chance of future long-time mean flow of 14.8 maf/year, based on records extending from 1896 to 1968. Because records are too short to improve accuracy of predictions, serious errors can be made. For example, Holburt demonstrates that using the 1896-1930 period, there was less than one chance in a thousand that the following 35-year period would average as little as 13.1 maf/year. Yet the following 35-year period saw precisely that average.[20]

With the necessary legislation having been passed to get both salinity control programs on the road and agreement having been reached on standards, criteria, and a plan of implementation, there is a strong incentive to regard Minute 242 and the salinity control plan as the "permanent and definitive solution" to the salinity problem. But there are reasons for having reservations about the conclusiveness of these agreements. The agreement in Minute 242 obligates Mexico to accept water equal to the quality of the water arriving at Imperial Dam, plus or minus 115 ppm salinity. Thus, Mexico is dependent on the quality of water made available to U.S. water users at that point; if it worsens dramatically, then Mexico

must accept the lower quality water. The works constructed at Yuma are designed to deal with Wellton-Mohawk drainage and not with general salinity conditions on the river. On the other hand, Mexico, in tying its water quality to that of the waters arriving at Imperial Dam, unquestionably took into account the salinity control program agreed upon by EPA and the Basin States as a protection against excessive salinity in the Lower Basin. If the salinity control program fails to achieve the results expected by EPA and the Basin States, is it likely that Mexico will accept lower quality water indefinitely without complaint?[21]

Is it likely that the Lower Basin States, particularly California, will support indefinitely a salinity control program that fails to accomplish the goals of protecting their investment in agriculture in the Lower Basin while implicitly providing for further economic development based on water supplies in the Upper Basin? Contrariwise, if the salinity programs fail to achieve their goals, there may be pressure to reduce or alter substantially Upper Basin projects with consequent objections from Upper Basin interests. It is possible, however, that the drive for energy independence may simply override the water quality issue, justifying whatever costs or whatever degradation is necessary to make Colorado River water available to the energy industry.

THE ENERGY ISSUE AND WATER POLICY

The demand for new energy resources within the United States and the importance of western fossil fuel resources to meet that demand are well understood. The people in the Rocky Mountain States recognize both an opportunity for economic development and a serious threat to the quality of life they enjoy because of the fragile environment around them. Their enthusiasm for adoption of measures that will free them from what they regard as colonial status is tempered by a concern that the federal government's passion for energy independence will leave them most of the burdens and few of the benefits.

It is not possible in this Bulletin to discuss all of the ramifications of federal energy policy for the Upper Basin of the Colorado River. There are serious problems, having relatively little to do with water policy, facing the federal, state, and local governments, including land use, utility plant siting, financing the social infrastructure of new and enlarged communities, prevention of "boom and bust" towns, and impact of new industry on air quality. From papers and discussions at the October 1975 Annual Meeting of the Federation of Rocky Mountain States, it is clear that many of the governors, other state officials, local officials, and private interests are distrustful of the federal agencies--especially the Department of the Interior and the Federal Energy Administration--on both procedural and substantive grounds. They protest federal actions taken without adequate consultation with the states, pointing particularly to legislation before Congress in 1975 to authorize $6 billion for loans for synthetic fuels development.[22] This legislation passed both houses without hearings in 1975, but was defeated in the House of Representatives in September 1976 owing to intense opposition of fiscal conservatives and environmentalists and the difficulty of dealing with the complex legislation at the end of a legislative session.[23] On substantive issues, the states point to the fact that the national administration emphasizes increasing supply, with almost no attention being given to conservation and dampening of demand, and the failure to deal as yet with the issue of "front end" money for financing local services. These issues are not water policy issues but decisions with respect to them can have a decided impact on water policy.

Water Demands

On the supply side of water policy, it is clear that large-scale energy development will have a decided impact on the limited water supply. Coal mining in itself will not impose significant demands on water supplies. But significant quantities of water are required for generation of electrical

energy and for such processes as refining of oil shale or coal gasification.[24] Conveyance of coal to distant electrical generating sites by slurry line increases water use, although perhaps with less social and perhaps even general environmental impact than conveyance by the large number of unit trains required to do so otherwise. The Western States Water Council estimates that for energy production in the four Upper Basin States in 1990, there will be required in excess of 1.1 million acre-feet of water.[25]

The situation is stated succinctly by the Bureau of Reclamation in its report on energy in the Colorado River Basin. It notes that the Upper Basin is only putting 3.7 maf of its postulated 6.5 maf to use and the energy use in the Upper Basin will require an estimated 837,000 acre-feet by the year 2000.

> From the available data, it is obvious that the water supply exceeds that which is presently being utilized in the Basin. However, it is also apparent that the supply is in turn exceeded by the presently recognized rights to utilize water which have been granted by most of the states of the Basin. The obvious conclusion is that many appropriative rights granted to private parties by the various states are not being fully utilized. However, these appropriative rights remain as charges against the use of water in the Basin. Potential developers of energy resources also seem to understand that they must so proceed and that they have, for some time, been obtaining water rights in the Basin for the development of their particular oil shale or coal projects with earlier priority dates than could be obtained by current filings. In fact, there has been considerable speculative activity in some states in buying and selling water rights and much of this speculation has involved the purchase of land as well as the pertinent water rights, with the intention of transferring water rights to energy development sites (sometimes some distance away).[26]

The availability of water is clearly recognized by the states also as one of the most severe constraints on energy

development. Utah, for example, has 300,000 acre-feet of water unallocated under the Colorado River Compact, but it has applications for 1.2 maf. It is estimated that the prototype oil shale development will require between 150,000 and 200,000 acre-feet annually. Thus, Utah recognizes that "providing water for energy may require transfers, exchanges, and in some cases reallocations of water rights."[27]

But even assuming the overall water demand can be met by purchases of water rights and reallocations, reports on the general situation may obscure the specific and local problems that may be serious. As reported in the Bureau of Land Management's (BLM) Environmental Impact Statement on the Federal Coal Leasing Program,

> Most of the towns in this area have sparse population, and water supplies and waste treatment plants often are barely adequate for the present inhabitants. The increased labor force necessary to operate the mines and power plants could put severe strains on present water supply and waste treatment facilities in many small towns in this region. This could lead to water shortages and increased pollution in streams receiving waste discharge.[28]

Equally uncertain is the impact of efforts toward revegetation once an area is mined out. Such revegetation efforts will require applications of unknown quantities of water that may already be in short supply. The Western States Water Council reports the need for from 0.5 to 4 acre-feet of water per year, with some areas requiring water for two years.[29]

Local problems may arise both from the mining operation itself and from purported improvements in the water supply system supporting energy development. Mining can damage local water supplies by percolation of water through spoil material, through the creation of hardpan if revegetation is unsuccessful, through changes in the aquifer either by pumping or disturbance of the overburden in which an aquifer may be located,

particularly in alluvial valleys.[30] Reservoirs to provide water for the energy development may reduce the quantities of silt in the water, thereby causing substantial damage to the irrigation systems of the farmers who had previously used the relatively silty water.

Reallocations of Water

Given the limited supplies, it may be expected that the water for such energy developments will be obtained through purchase of existing water rights in some areas and through changes in intended allocations in areas where water resource projects are yet to be developed. In some areas this means diversion of waters from agriculture to industrial use. Present holders of water rights may simply prefer to sell their water rather than to continue in farming, and for the most part state laws permit such sales to take place.

Assuming that it is in the states' and their communities' interests to control transfers from agricultural to energy uses, the question of the mechanisms for such transfers becomes crucial. One must begin with the clear recognition that one is dealing with property rights. These rights are fortified by provisions of both federal and state constitutions and may not be denied without due process of law and without just compensation. While state law confirms public ownership of the corpus of the water itself, the appropriation doctrine generally grants rights in perpetuity to the use of that water. Individual owners of water rights may sell those rights--or sell the land to which that right pertains--and thus by individual consent and presumably in response to an appropriate economic incentive, provide a suitable exchange in accordance with current social values.[31]

It may be argued, however, that the market place does not provide appropriate incentives in terms of the prevailing social order, i.e., that there are collective values not represented by individual market transactions. Indeed, social values are implicit even in the individual decision to

sell a water right in that the sale will be permitted by courts only when others who depend on that same body of water may not be injured. Society may prefer to retain irrigation agriculture because of certain social values associated with irrigation farming and rural towns, despite the higher valued use of water for industry or energy. Governor Lamm of Colorado has repeatedly stated, for example, that he would not trade irrigation water for energy, that he wants to make sure "that energy water at $200 per acre foot doesn't dry up agriculture water at $20 per acre foot."[32] As the Western States Water Council recently put it,

> There is more to the issue than this dollar comparison would lead one to believe. The social cost of water used for energy production is the value of all those uses that are sacrificed to make water available for energy. We are coming to realize that almost no diversion of water or new use can be introduced without a sacrifice being made. Even water 'in stream' or 'in aquifer' has some value to society. Separating out these values or 'opportunity costs' is difficult and involved, yet new uses or diversions should be undertaken only when they can be justified.[33]

One alternative for the state is to buy up those rights it wishes to retain for some public purpose, thus providing fair compensation. A second alternative is to buy up development rights, in effect to purchase the value added to the water right because of alternative uses of higher economic value to which the water might be put. A third possibility involves the power of the state to zone property and to define what is the state's interest by means of an overall water plan or land use plan. It is argued in Colorado, for example, that changes in water use could be controlled either judicially or administratively by reference to these legislatively defined values much as property may be zoned and nonconforming uses may be banned.[34] Such an approach would

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unquestionably be challenged in the courts as a "taking" of private property without compensation.

In many areas, the shift from irrigation agriculture to industrial use of water will not be a dramatic shift in lifestyle. For example, in the Price-Carbon County area in Utah, mining has been the major economic activity for decades. Agricultural activity is marginal already, with most farmers having other primary occupations. In the Uintah Basin of Utah, around Vernal, and in some areas of northwestern Colorado, agriculture and ranching are more intensive and more a way of life, and the impact may therefore be more significant.

Attitudes Toward Reallocation

Public attitudes toward economic development and specifically toward energy development may be crucial factors in the process of deciding how much energy development there will be, how fast it will proceed, and specific sizes and locations of projects. The Western Governors have already accepted the inevitability of energy development in their region but have expressed their concern that it be undertaken in partnership with the Western States and with full consideration of their economic needs and environmental concerns.[35]

As one would expect, there appears to be some variability in the approach to energy development among the states and among regions within states. It appears clear, for example, that the political leadership in Utah is more firmly committed to early and rapid development than is that in Colorado, and is perhaps more committed than New Mexico and Wyoming. Governor Rampton, backed by large majorities in the Utah Legislature, vigorously backed the Kaiparowits project, protesting against the "equivocation and postponed decisions."[36] He expressed considerable bitterness toward environmentalists when Southern California Edison's decision not to pursue the project was announced. The reason for this is not entirely clear, but may be related to traditional concern about ensuring livelihoods for young and educated people who would otherwise have to find employment elsewhere.

N. Eldon Tanner, First Counselor in the First Presidency of the Church of Jesus Christ of Latter-Day Saints expressed this sentiment in a speech in Cedar City, Utah:

> It is true that our leaders as well as our people have some fear that outsiders (Mormons or non-Mormons) will come into our community, that we might lose out to them and that their influence might not be for the good of the community. The best way to meet this fear is for the citizens themselves to take an active part in the development of the industries, and to be a part of them and to use their influence to see that everything is done to uphold and maintain the standards and environment in which we want our children and our children's children to live and carry on.
>
> New residents with know-how will be required in some areas, and they might be viewed in the positive way of bringing new ideas and new points of view, new perspective to assist in accomplishing the significant community goals which we all so much desire. These development programs will build up and stabilize our communities, and our own young people who otherwise might leave the community will remain and help strengthen our wards and stakes and community life as a whole. We must not lose by default. As I have said, our greatest natural resource and asset is our youth. We must cultivate and care for them. No other success will compensate for failure in the home, or for the loss of our youth.[37]

Governor Rampton expressed similar sentiment and added that polls taken in Kane County, the site of the Kaiparowits project, showed that 91.5 percent of the people responding were in favor of the project.[38]

In the Four Corners area of Utah, already impacted by energy development and the location of the proposed Kaiparowits plant, citizen opinion again heavily favored development. Over 80 percent of a sample of households in five communities would favor existing energy development if they had to choose again; similar percentages favored the Kaiparowits project.[39] The residents tended strongly to perceive economic

benefits to themselves in such a development.[39] Little concluded that the prevailing religious-secular norms of the dominant Mormon culture encouraged development.[40] In an earlier survey in the same Four Corners region, Albrecht found that opinions were often based on faulty or inadequate information.[41]

Surveys of public attitudes regarding energy development in other parts of the state revealed a consistently favorable view of energy development. A study of energy development in the Uintah Basin of northeastern Utah demonstrated the paradox that citizens preferred both economic growth and the preservation of the rural character of their communities.[42] More than 80 percent of a sample of the population in three communities approved of oil shale development in their basin.[43] Rather than seeing inconsistency in their preferences, the local citizens appeared to find growth as the means of maintaining their way of life rather than as a threat to it.[44]

Interviews held by the author with political leaders in Carbon, Wayne, and Emery Counties, Utah, in April 1976 strongly confirmed this general sentiment in favor of energy development. With agriculture marginal, with reduced opportunities in the timber industry, and with continuing and increasing costs of maintaining local services such as roads, these leaders were anxious to see growth associated with Utah Power and Light's (UPL) plants in Carbon and Emery Counties and the proposed Intermountain Power Project in Wayne County. They expressed confidence in their ability to control the forces that might seriously erode the quality of life in their area, pointing to ongoing studies of growth-related problems and the fashioning of master plans and institutions to impose adequate constraints. They believed that energy-related growth would provide economic opportunities for them and their children and might also attract back to their areas former residents who had found it necessary to leave for lack of opportunity.

From a mail survey conducted in 1975 with 400 residents of Carbon and Emery Counties, it was evident that there was a strong majority in favor of expanded coal-mining activity. Approximately 94 percent of the sample favored more coal mining either unconditionally or generally, while only 6 percent were generally opposed and none was opposed unconditionally.[45] Over 80 percent of the sample preferred to stay in their communities, chiefly because they enjoyed the small population, absence of pollution, good recreational opportunities, good schools, and good family environment. They perceived problems--inadequate shopping, few services, high prices, lack of cultural and recreational activities (especially for young people)--but they considered industrial development as the best alternative open to them.

While perhaps only a difference in tone and emphasis, Governor Lamm of Colorado has expressed more reservation about the benefits flowing from energy development. His language is the language of concern that the federal government is rushing headlong into a crash program, ignoring state inputs, and is unconscious of or prepared to dedicate the West as a "national sacrifice area."[46] A poll taken among residents and public officials in four Colorado counties in early 1973 revealed a generally favorable attitude toward oil shale development, especially for the jobs that would be made available and the general improvement in the economy. Residents appeared to believe that threats to the environment could be dealt with satisfactorily. Concern for overcrowding appeared to outweigh worry over pollution of the natural environment.[47] In an interview in late 1975, however, it was Governor Lamm's opinion that public opinion in that area had changed considerably toward the negative.[48]

Impacts of Change

However, if people do in fact respond to changes in their way of life, the impact will be considerable. Estimates of population growth vary widely and probably depend on the size

of area included and assumptions made about energy demand. In the Rocky Mountain region one estimate is for 450,000 additional people by 1985.[49] Governor Lamm reckoned with the possibility of a three-county area in Colorado growing from 78,700 to 310,000 people by 1985.[50] One Utah estimate for southeastern and central Utah is for an additional 34,000 energy-related jobs; using a factor of three additional persons for every job, one would have a growth of population of around 100,000 people in the area.[51]

The reason for support for industrial development in Emery County, Utah, is not difficult to find. In a BLM planning document it was reported that Emery County had a per capita income of $2141, one of the lowest in the state which overall had a per capita income of $2715. Over 14 percent of the families in Emery County had incomes below the poverty level. Emery County had a very low assessed valuation, 22 out of 29 counties in the State of Utah. The principal economic activity, other than the declining coal mines, was livestock raising, and fewer and fewer people were able to make a living in that occupation. Many retained interest in their farms while they worked at other occupations.

Like Carbon County, the population of Emery County declined substantially from 1960 to 1970, having only 5137 residents in the latter year, a decrease of 7.4 percent. Between 1970 and 1973, Emery County grew to 6800 persons, an increase of 32 percent.[52] The growth forecast in Emery County by the Department of Community Affairs indicates that by 1985 there will be 11,500 people, or more than double the 1970 figure. If the Intermountain Power Project, a 3000-MW plant proposed for adjacent Wayne County, uses Emery County coal, the population could grow as high as 18,000 by 1985.[53]

Unemployment rates in Emery County have been high in recent years, but decreased significantly with the energy crisis. In 1971, the unemployment rate stood at 10.4 percent, but by 1973 it had declined to 5.4 percent, with the largest increases

in employment coming in mining and construction. The importance of mining in Emery County is found in the fact that in 1973 mining accounted for 30 percent of the total employment.[54]

The impact of energy development may be found in the following figures representing baseline projections of personal income, projections of income under energy impact without the development of the Intermountain Power Project (IPP), and then with the Project:

	1975	1980	1985
Income Impact without IPP	$40,135,000	$63,004,000	$92,527,000
Baseline Income Difference	16,616,000	25,202,000	40,752,000
	23,519,000	37,802,000	51,775,000
Income Impact with IPP	$40,135,000	$80,425,000	$185,769,000
Baseline Income Difference	16,616,000	25,202,000	40,752,000
	23,519,000	55,223,000	145,752,000

Personal income obviously would rise by several magnitudes with the construction of the IPP plant and the use of Emery County coal, but it would more than double under the impact of energy development within its borders and without the IPP.

That energy development has already made a significant impact on the financial structure of Emery County is evident in the assessed valuation within the county. The assessed valuation of property increased from approximately $10 million in 1971 to $49.2 million in 1975.[55] The increase was almost entirely attributable to the location of powerplants in the county. The assessed valuation of power companies grew from $0.9 million in 1971 to $33.3 million in 1975. The value of mining assets increased more than three-fold during the same period but accounted for only $4.4 million in 1975.

There have been no changes in the county tax rate or in the school tax rate during the same period. All but one of the eight communities in the county--all in Castle Valley--have increased their tax rate. The largest increases occurred in Castle Dale and Ferron, both of which have had significant growth as the result of the energy development in the valley.

The impact of energy development is most clearly seen in Huntington, near the site of the UPL plant. One observer described it as a "jungle," which is certainly an exaggeration, but nevertheless vividly suggests the impact of industrial growth on a community. The population has grown from 782 in 1970 to 2000 in 1976, with 400 people arriving between June 1975 and April 1976. Land values have shot up. One estimate was that a house worth $11,000 in 1969 was appraised at $52,000 in 1972. Nearly all of the growth has been in mobile-home developments, of which there are 20 ranging from 5 to 54 units each. Real estate that had not been reassessed in 15 years was reassessed in 1972 and given valuations as much as six times its previous valuation.

The streets, parks, and services in the community were clearly inadequate. Huntington is a very small community with virtually no services such as stores and recreational facilities. Its water system is old and leaky, although presumably satisfactory for the smaller population. The added growth clearly demonstrated its inadequacy, resulting in the development of a new water system, largely financed by outside resources, including the Farmers Home Administration, Utah Division of Water Resources, and a grant from UPL. UPL was uncertain about granting money for this purpose, fearing a stockholders' suit on the grounds that a utility is not in the business of providing water for local communities. Moreover, UPL wished to include the grant in calculating its rate base, and questions were raised before the Public Service Commission of Utah regarding the appropriateness of asking all of the customers of UPL to pay for the cost of a local

water system. Apparently, problems of this sort have been resolved.

Schools have been both a source of pride and a serious problem, during recent years, for the residents of Emery County. Because of the declining population, schools were being closed and children were being bussed long distances. Growth in the past several years has been dramatic: from 1350 students in 1972 to 2000 in 1976 and an expected 2300 in 1977.[56] With the increased population, the county voters approved a $6.5-million bond issue for the construction of new schools, including two new junior high schools, and either construction or renovation of three elementary schools.

Attitudes in the county toward water rights are perhaps as indicative of attitudes toward energy development as any other indicator. Holders of water rights tend to guard them jealously and to give them up only when to do so is obviously in their self-interest. Water tends to be in short supply in the sense that in some years there is simply not enough to satisfy existing rights. It is therefore necessary for a new interest having needs for water to purchase water rights from present owners. Utah water law permits such sales to take place as long as the rights of others are not interfered with.

UPL purchased shares of water in the Huntington-Cleveland Water Company in order to supply water to its Huntington plant. UPL paid $18 per share, which, at the time, was considered around double the price at which shares were then selling. It is apparent that the local residents who gave up shares--and who support energy development--nevertheless feel that UPL got a very good deal because it allegedly gained its costs back by raising the power rates charged to its customers.

The price of water has continued to escalate and it is difficult to ascertain the price of water today. Estimates

vary from $150 to $500 per share, which may translate into several times that figure per acre-foot. The owners of Ferrin Irrigation Company both sold shares and leased them to UPL for the Emery plant; UPL owns approximately 30 percent of the shares in the irrigation company. There was some controversy over arrangements for selling and leasing the water rights, but ultimately 90 percent of the shareholders participated. There was general recognition that failure to make the water available would doom the project.

The extent to which public policy--whether water or other policy--can seriously affect the character of rural areas in the Rocky Mountains remains very much problematical inasmuch as one is dealing with relatively powerful secular forces in the economy and society generally. Moffatt and Rio Blanco Counties lost population during the 1960-1970 period after gaining population in the 1950s.[57] Both suffered a precipitous decline in terms of median income with reference to the state average.[58] A report of the Colorado Rural Development Commission states:

> Frustration is perhaps the most general mood of the people of Colorado. Whether a community is growing too fast or is slowly dying, frustration exists over what can be done to counter the trend. A steady parade of commissions, government agencies, consultants, and private organizations 'studying' the causes of rural decline and uncontrollable urban growth has compounded this frustration. By now the problems should have been studied into submission.[59]

Some of the Rocky Mountain States have taken steps to deal with energy impacts, including laws requiring the prepayment of taxes, or bonding to provide for "front-end" costs of financing the local infrastructure, planning and development councils for the impacted areas, and stringent laws requiring revegetation of mined areas.[60] But it appears certain that much more will be required at federal, state,

and local levels if economic forces will not simply impel the communities along the boom-and-bust cycle. In particular, the states and local governments may have to equip themselves with enough information about the energy industry to develop a strategy that helps prevent their being involved only in decisions about how to pick up the pieces.[61]

DECISION-MAKING PROCESSES

Distributive Politics

Elsewhere the author has described the decision-making system for water politics in the West as "distributive" in character.[62] In distributive politics, decision-making takes place through interaction among multiple sets of local or regional actors who seek to form a coalition; this coalition aggregates and to some extent modifies the separate and sometimes conflicting interests through a process of bargaining. Federal agencies often perform important roles in supplying information and technical expertise, in finding solutions for potential conflicts, and in justifying projects or major programs through technical and economic analysis. Elected and appointive officials at federal, state, and local levels all play important roles in this coalition-forming process.

The goal of the actors in distributive politics is to gain their ends through reliance to a major extent on benefits from the federal treasury but without appearing to inflict an injury on other parties. The term "pork barrel" is an invidious but not wholly inappropriate term for this process. Essentially, the coalition bargains with others who have other ends to realize in order to achieve their mutually exclusive but compatible ends. Vote-trading, whether explicit or implicit, is the typical form distributive politics takes. The avoidance of injury to others comes about through reliance on general taxpayer contributions inasmuch as the taxpayer finds it difficult, if not impossible, to discover the extent to which he has subsidized the income of others.

Or Regulatory Politics

Alternative frameworks for decision-making are denoted as "regulatory" or "redistributive." In each of the latter frameworks, there is overt conflict over limited resources; in regulatory politics, there is conflict between sectors of the economy--as in competition between trucking and the railroads; in redistributive politics there is essentially class conflict--as over taxation and spending money.

The future may bring significant alterations in this process of decision-making as it applies to future water policy in the region, but the politics of salinity control suggest a continuation of the traditional pattern. The entrance of EPA and the Federal Energy Administration as major actors may alter the configuration of forces significantly in the direction of overt conflict and therefore regulatory politics. But in some ways the traditional form of decision-making appears to be reinforced by the international implications of salinity control and the energy issue. The ability of the seven Basin States to convince Congress and the Nixon and Ford Administrations, despite the latter's pronounced opposition, suggests the strength of the region's bargaining position once its constituent groups have come to agreement internally and once the Administration has perceived stakes in an agreement that will require the region's acquiescence. Similarly, the Rocky Mountain States have seen the need for unity in dealing with the insistent pressures of the federal government to expand energy production in the West.

Moreover, the region's newly found unity makes it an even more formidable agent for distributive politics. The salinity issue, to be dealt with as a basin-wide problem, has led to the forging of basin-wide positions on salinity as well as other policy matters. It is remarkable to find California, the decades-old nemesis of the Upper Basin, taking up cudgels for the Upper Basin in negotiations over the salinity issue.

The unity achieved in the Basin appears to reflect a number of converging forces. First is the legacy of Arizona v. California, a decade-long judicial battle that left scars on nearly all parties, not the least of which was California.[63] Arguably, at least, there exists a foundation for legal action between the Upper and Lower Basin States over the salinity issue but little incentive to pursue it. Secondly, EPA clearly prefers a basin-wide approach based on the strong support of the Basin States themselves. EPA could have initiated court action, indeed has been fearful that a court suit might be brought by environmentalists for failure to set stream standards, but has refused to do so in hopes of getting the states to adopt a program that will achieve results in terms of improved water quality. In this respect, EPA appears to feel it has no option but to work through the states.

Thirdly, past challenges to the distributive framework--challenges that would involve direct confrontation with interests in conflict with the dominant groups in the region--have either failed or have in some ways been turned to the advantage of the dominant interests in the region. Environmentalists threatened the financial and storage reservoir foundations of the Colorado River Storage Project in endeavoring to prevent the waters of Lake Powell from entering Rainbow Bridge National Monument, but they lost.[64] They also opposed dams in the Grand Canyon and, while winning that specific battle, they did not resist the Central Arizona Project, the five Upper Basin projects, or the national assumption of responsibility for fulfilling the basin's obligation to Mexico.[65] Fourth, the present energy crunch in some ways pits the region against the rest of the country because of the stake the country may have in exploiting the coal and water resources of the region without adequate protection of or compensation to the region. The states had long argued, for example, that an increased proportion of the revenues from

royalties on federal coal leases should be given the states. This quest was finally realized in 1976 with the passage of the Public Laws Management and Policy Act of 1976, in which Congress granted 50 percent of all mineral funds, an increase of 12-1/2 percent. It also removed restrictions on the purposes to which these funds could be put.[66] Finally, success is likely to provide the basin its own justification for unity. The success achieved in federal approval of the salinity control projects and EPA sponsorship of the basin-wide approach is likely to solidify the ranks of the Basin States.

Sources of Weakness

As formidable as the regional phalanx, with federal blessings, appears to be, there is no assurance it can withstand a direct assault in the event that the solution devised by the Salinity Control Forum does not achieve improved water quality in the Lower Basin and ultimately in Mexico. It appears certain that the Forum's product will not be acceptable to some environmentalists. In a communication to this investigator, a representative of The Sierra Club wrote:

> As it turns out, the Forum in my view has become nothing more than a mechanism for the coordination and application of the political power of the seven Basin States for the purpose of stultifying any efforts by EPA actually to enforce the provisions of PL 92-500. The clause quoted above [referring to the provision of the EPA regulation requiring a basin-wide approach while allowing further development of compact apportioned water] has become the charter of the Forum, which has the following objectives: (1) To use the concept that the salinity problem is basin-wide to avoid any action at all by the individual States; (2) To place all action to correct the problem on the Federal Government and the American taxpayers at large; and (3) To place emphasis on the control of natural sources of salinity rather than on the correction of man-made problems, and concurrently

> to create more man-made problems through continuing to develop their [the Basin States'] compact apportioned waters.[67]

Clearly, The Sierra Club believes further development must take a second place to improvement in water quality, that the beneficiaries and those who caused the problems should bear the cost, and that the major attack should be made on man-made pollution rather than on natural pollution. The Southwest Office of The Sierra Club expressed similar concerns in its formal comments on the Salinity Forum's plan of implementation. It cast doubt on the streamflow assumptions and the adequacy of the salinity control program to meet the standards set out in the plan. It expressed the need for definite regulations and agencies to enforce them. It expressed the view that some development may have to be foregone to achieve improved water quality in the river. On financing, it expressed concern for the high costs and argued for assumption of greater burdens of cost by those who contributed to the salinity or who benefitted from the program.[68]

It is idle to speculate whether The Sierra Club or the Environmental Defense Fund, both of which have been critical of EPA's performance in this matter, will seek judicial resolution of this difference of approach. It is clear, however, that the potentiality for litigation is there.

Two other sources of weakness in the present decision-making arrangements are also worthy of note. One is that the arrangements, especially at the state level, often fail to take account of the "formidable" water rights of the Indian tribes.[69] As Price and Weatherford note with respect to Navajo water rights:

> The fact that there was not direct Navajo representation in the formulation of the Colorado River Compacts, the fact that the Tribe is not represented on the interstate stream commissions, the fact that the consortia of power companies have close links to the relevant

> state governments but not to the tribes involved, all these are important factors in assessing how the Winters right is subject to bargain and negotiation. It is characteristic of the Southwest's ambivalence toward Navajo and other tribal sovereignty that Indian community representatives are not naturally considered part of the intergovernment units entrusted with planning for regional growth.[70]

The Indian tribes have a vital stake in the outcome of all decisions with respect to water and have the potential weapon in the Winters doctrine to vastly reorder priorities with respect to water rights and usage.[71] The Indians have thus far negotiated for their rights with respect to specific projects undertaken primarily for Anglo interests. Some of their rights are as yet unquantified and they or others might seek legislative, administrative, or judicial determination of those rights. It is now alleged that the states no longer are interested in quantification of Indian water rights or federal reserved rights in general, hoping to put water to use as quickly as possible and then to claim they did not know about the existence of the federal and Indian rights.[72] Again, Price and Weatherford express this view very well:

> Postponement of the definition of Indian rights is an understandable strategy where the non-Indian community is afflicted with the notion that the long-term hope is for the disappearance of the Indian sovereignties. If the definition of Indian rights to resources is postponed long enough, then no definition will be necessary. Postponement is also a characteristic of non-Indian interests because of the deep belief that if there is non-Indian reliance on a particular resource, the Congress and the courts will not render determinations that terminate those interests.[73]

A particular focus of state water interest opposition has been a bill proposed by Deputy Assistant Attorney General Walter Kiechel, Jr., to inventory and quantify federal water rights, including Indian water rights.[74] State water officials have expressed vigorous opposition to this legislation, arguing that the federal government would claim every drop of water in the West and that it would cost $1 billion to challenge the asserted federal and Indian rights. In a survey conducted by the Western States Water Council of litigation concerning Indian water rights in the 11 western states, a number of important cases are in litigation, among them the following: (1) in Arizona, a Papago Indian suit against various private parties, the City of Tucson, and the State of Arizona; (2) in Colorado, the Akin case on behalf of the Ute Mountain and Southern Ute Indian Tribes against 1200 named defendants; (3) in New Mexico, several cases including the suit of the Jicarilla Apaches against the United States and other parties; and (4) in Utah, individual members of the Ute Indian Tribe on two reservations, against the Secretary of the Interior and the Central Utah Water Conservancy District. As noted by several of the respondents, successful prosecution of these claims would have important implications for holders of existing water rights.[75] As stated by Thomas Fredericks, failure to include them actively in the decision-making system appears to leave their interests without adequate representation and might lead to unfortunate results for those who ignore them.[76]

Indian water rights under the Winters doctrine are a valuable bargaining tool, but in themselves do not provide benefits to the Indians. They do not provide the necessary capital or technical expertise which may be provided by Congress or by bureaus of the Department of the Interior less sympathetic with Indian objectives. Thus, the Indians may have to be cooperative with respect to definition of those rights if they are to obtain the assistance they require to make those rights meaningful in practice.[77]

Secondly, as pointed out by The Sierra Club, the apparent reluctance of the Basin States to sacrifice any basin interest in water or to bear a substantial proportion of the total cost of improving water quality is a potential weakness of considerable magnitude. Dependence on federal appropriations makes the entire structure of salinity control subject to budgetary considerations in which salinity control may take a relatively low priority. The preference for federal construction of what Kneese calls a "wildly uneconomic" approach to dealing with the salinity problems of the Mexicali Valley, i.e., the desalination plant in preference to water-saving approaches or purchase of water rights and full compensation of direct and perhaps even indirect costs of buying them at Wellton-Mohawk, is an indication of the extent to which the basin is unwilling to take any actions which suggest a contraction of their rights under the 1922 Compact in dealing with their problems.[78] To the latter proposal--that the water rights at Wellton-Mohawk be purchased--the environmental statement prepared on the works to meet the requirements of Minute 242 succinctly states: "Strong opposition to the measure would probably occur throughout the basin."[79]

In April 1976, Senator Edward Kennedy introduced legislation in effect transferring the water rights from the Wellton-Mohawk Project to the Indian tribes in central and southwestern Arizona.[80] The federal government would be authorized to purchase, exchange, or exercise its power of eminent domain to obtain the lands of the project and it would be able to sever state water rights from lands, federal or state laws to the contrary notwithstanding. Serious effort to move this legislation would undoubtedly lead to determined and concerted opposition from the seven Basin States.

Western Political Organization

The western states, particularly those in the Rocky Mountain area, have long considered themselves to be "colonies" of

the rest of the United States. They were deemed suitable for resource exploitation and for recreation, but they did not share generally in the prosperity of the country. Lacking the population base, they were politically incapable of defending themselves or of achieving a satisfactory share of the benefits from the federal treasury.

In recognition of this problem, the western states have created a variety of political mechanisms to increase their political strength vis a vis other sections of the country and in the nation's capital. The Western Governors' Conference is one manifestation of this effort. Another is the Western Governors' Regional Energy Policy Office. Still another is the Federation of Rocky Mountain States. The latter is of particular interest in that it is a "unique voluntary combination of regional government officials, university representatives, business leaders, and federal and interest group representatives." Its Councils "identify or develop regional agreement on specific key issues, define priorities among the issues, and propose multistate policies and programs to address the issues through the use of the best available technology."[81]

The principal institutions for resolving conflicts and forging a unified position on water policy in the basin are the Committee of Fourteen, which is chiefly composed of the principal state water officials of the seven Basin States, and the Salinity Control Advisory Council, consisting of three representatives of each state who advise on the salinity control program. The Advisory Council consists of the members who formerly served on the Salinity Control Forum and thus represent those state agencies concerned with water development, administration, and pollution.

In the Upper Basin, the Upper Colorado River Commission, created by the Upper Colorado River Basin Compact, serves an important coordination function. Represented on this Commission are the principal water officials of the Upper Basin

alone. Its executive director was a key figure in the passage of the Colorado River Storage Project Act and has served in that capacity since its creation. The Commission also has the benefit of a small staff.

The Western States Water Council is one of these myriad organizations and it provides a forum for discussion and action on water issues of mutual interest and concern. It acts as a body only on the basis of a consensus of opinion among the member states. Unanimity is required on matters concerning out-of-basin transfers, but a two-thirds vote is required on all other matters. Its principal function is to serve "as a catalyst and an information gathering aid so that member states are better able to respond and represent their position on water matters" when the Council takes no action.[82]

The Council is made up of the 11 governors of the western states and 33 persons appointed by the governors. During the 1975 calendar year, the Council achieved concurrence on 11 issues, including two that had relevance to Indian water rights. The Council expressed opposition to legislation drafted by the Department of Justice providing for the quantification of federal rights and congressional legislation providing for the creation of an Indian Trust Counsel Authority outside the present federal departmental structure.[83]

These organizations are important in providing regular and structured opportunities for negotiations among the principal water interests of the respective states. Of greatest importance are the informal ties that join the water officials together because of their long experience with each other and with the familiar issues. Whatever the organizational format, the same people are involved because they are the state experts. It is not surprising, then, that the executive director of the Upper Colorado River Commission was the secretary of the Salinity Control Forum.

The quest for unity is still very clearly in the forefront of the thinking of the governors and others concerned

about the energy issue in the Rocky Mountain States. But their relationship with the federal government on energy matters is substantially different than it is on water matters alone. They are no longer supplicants for federal aid but rather defenders of the environment and a way of life. They are in a position of having to defend their interests against a federal government that appears to have a powerful hand of cards: large tracts of federally leased coal-bearing land; a perceived national energy crisis; support of what Colorado's Representative Tim Worth calls the federal-industrial complex;[84] and lots of money to hand out for research, development, and prototype construction.

There exist no formal public entities to provide for regional protection in the energy picture, just as there are none in the Colorado River Basin to deal with water supply issues. Federal agencies undertake parts of the task, but each is limited by its charter, mission, ideology, or budget. Instead, semi-public entities have come into existence to provide the mechanisms for arriving at regional positions. The Federation of Rocky Mountain States provides an overall umbrella for such regional coordination, but the governors have seen the need to expand their membership, in regard to the energy issue, to include all of the western and midwestern states having a stake in the energy question. For this reason, they created the Western Governors' Regional Energy Policy Office. Western interests have also organized at the congressional level to provide a unified legislative voice on energy matters. Given the stake of the nation in obtaining energy from the western states, it will be surprising if the states so organized are not capable of extracting a considerable measure of both concessions and financing in the undertaking. Enormous uncertainties exist with respect to the effectiveness of such political arrangements in achieving the goals of protection of communities and the environment along with economic development.

This concern was at least partially the basis for the western governors initiating an effort in 1976 to examine the complex web of interstate institutions. They wanted to ensure that the existing array was efficient, coordinated, and subject to their control. The result of this effort may well be a significant reorganization of interstate institutions in the West.

FUTURE POLICY AND DECISION-MAKING ISSUES

Most of the future policy issues have already been identified either explicitly or implicitly in the foregoing discussion: the viability of the Salinity Control Forum's plan to meet salinity standards; the extent to which the Upper Basin will be able to develop within the constraints of the standards and numeric criteria laid down in the plan; the extent to which there will be sufficient incentives to induce the various actors, particularly the irrigation farmers, to take steps to reduce the salinity of their return flows; the quantity of federal dollars forthcoming from the federal treasury for both development and salinity control projects; the speed, direction, and character of energy development; the role the states will play in such development; the roles of each level of government in protecting the environment and ensuring community values; the openness of the decision-making system to the participation of all interested parties.

The last issue--the openness of the decision-making system--may be worthy of further comment. The ad hoc arrangements presently prevailing have worked well for the major groups of the basin, given the conflicting interests and the necessity of bargaining in the achievement of acceptable solutions. But they have largely depended on the availability of federal dollars to make the bargains viable. As Mr. Brownell stated in announcing the agreement with Mexico in 1973:

> This is a project that is based on dollars not on water. I told the Western States at the beginning of the negotiations that nothing would

> be done, and nothing has been done as a result of this agreement, which would adversely affect the orderly development of the Western States. There are no limitations in the agreement which would adversely affect any of the planned programs for the development of natural resources of the Basin States.[85]

Federal dollars may yet be the medium by which the regional benefits are secured with respect to both the salinity and the energy issues. There is clearly a need and a justification for significant levels of federal expenditures to ensure that the communities of the Rocky Mountains are not simply overcome by the growth resulting from energy development. And the Colorado River Basin States will certainly endeavor to tie the salinity issue to the energy issue, arguing that salinity control projects are necessary to permit energy development in the Upper Basin without further degrading the waters that flow to the Lower Basin.

State and Local Capabilities

But there is more involved than dollars from the federal treasury. Both the federal and state governments must be concerned about policy itself. The western governors emphasize the need for a national energy policy into which western energy development would fit. They also stress the need for federal strip-mine legislation to avoid ruinous competition among the coal-producing states. However, the states have responsibilities also, both of a financial and a control nature. Cities and towns are creatures of the states and their policies can be greatly influenced and even determined by state laws. States must decide what they want to have happen in the impacted communities, and this can come about only through effective planning legislation. Such effective planning hardly exists in many of the Rocky Mountain States and has been specifically rejected by the voters of the State of Utah.

The ability of these isolated communities to control the impacts of growth for the benefit of their people may depend on the quality of local planning and the courage of local leadership. Some steps have been taken to improve the quality of planning, but the character of the leadership is yet to be demonstrated.

Emery County, Utah, adopted a planning ordinance in 1970 and, in the opinion of one county commissioner, it has been effective in controlling growth outside the cities. The ordinance requires 10-acre lots for homes outside the city, and thus "prevented shanties from going up all over the valley." There have been problems, particularly in the mountainous areas where considerable housing had developed prior to adoption of the ordinance. The county has also been threatened with lawsuits over enforcement of the ordinance. Meanwhile, towns like Huntington, undergoing the impact of the UPL development, have been overwhelmed by problems associated with inadequate water supply systems, poor roads, and the influx of mobile-home parks. Many workers must commute the considerable distance from Price.

The cities have now adopted planning ordinances as well, and master plans have been or are being prepared for each city. The Southeastern Utah Economic Planning Commission, located in Price, provides some of the inspiration and staff work for this planning effort. Master plans have been prepared for the towns of Emery and Castle Dale. The county has a planner, but none of the cities is equipped with professional staffs to carry out this kind of work. With trailers going up everywhere in towns like Ferrin and Castle Dale, it will take a prodigious effort and strong will on the part of city councils to impose the kind of controls that are required. As expressed by one local official, the town political leaders will have to adopt formal, legal procedures and ordinances to deal with local issues and will not be able to rely on informal processes and good will as they have in the past.

The energy and the water supply issues are clearly linked together but both are linked to larger issues of regional development and protection. Regional efforts in the past have tended to be ad hoc in nature and the Salinity Control Forum is a good example of the traditional approach. An intricate and complex web of relationships has developed among local, state, and regional organizations, and communication does exist among them. Perhaps this is the only arrangement that can work, given the differences in the boundaries of the various problems with which the states must contend. But there must be concern that regional options far broader than either energy or water supply and pollution control are considered. The tendency to isolate issues as policies and as organizational targets means that the interrelationship among them and the overall impact of all of them may be ignored.[86]

The External Option

One of the ways of avoiding serious problems of trade-offs and limited resources is to externalize them. The salinity and the energy issues may yet provide the basis for externalizing the water problem generally through the medium of interbasin transfers or other means of increasing the water supplies such as weather modification, use of geothermal water, and desalination.[87] The issue of interbasin transfers was temporarily laid to rest in 1968 when Congress forbade the Secretary of the Interior to study interbasin transfers as a means of solving the water problems of the Colorado River for a period of ten years. The Basin States did not consider this a serious concession to Senator Henry Jackson of Washington, who feared efforts to acquire Columbia River water, because no shortages were expected to occur before near the end of the twentieth century.[88] That moratorium will end in 1978 and there are those who doubt that interbasin transfers will arise again as a serious issue in this century.[89] But if interbasin transfers are to be considered as a future solution

to water supply and quality problems in the basin by the next century, planning must begin now because of the estimated 20 to 30 years required between the time planning begins through the authorization and construction of the project.[90]

However, there already are signs that interbasin transfers will become an important issue. Alternative means (e.g., weather modification, large-scale desalination, phreatophyte control) of augmenting the water supplies of the Colorado River have lost some of their luster, whether for reasons of economics, environmental dangers, or unreliability. Interbasin transfers, on the other hand, are a known technology, and the water resources--at least to the satisfaction of Upper Basin interests--are there. Hard-fought political and economic battles in Congress, skirmishes over environmental impacts, and judicial tests over the ownership of water rights may all be expected in the debate over such large-scale transfers. As Ray Rigby of Idaho, Chairman of the Interstate Conference on Water Problems, stated in late 1975, "Undoubtedly any such attempts to export any water from the Northwest or to disturb existing water rights, by the Federal Government or anyone else, will be met by stiff resistance in the Courts, in Congress, in the state legislatures, in the news media, and by every other legal way."[91]

It may not be entirely a flight of fancy for debate over domestic interbasin transfers to escalate into debate over international transfers from Canadian river systems to the United States. The North American Water and Power Alliance--the greatest "Christmas tree" or "pork barrel" of them all--might again come in for consideration.[92] Can anyone doubt that there will be serious temptation to declare that such a project is essentially a national obligation to be paid for by all the taxpayers of the nation rather than by those who directly receive the benefits? Thus, there would be a continuation of distributive politics on an international scale.

FOOTNOTES

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2. Allen V. Kneese, "A Theoretical Analysis of Minute 242," Natural Resources Journal, Vol. 15, No. 1, January 1975, p. 135-137.
3. See Edward Weinberg, "'Salt Talks' United States and Mexico Style: A Case Study of the Lower Colorado Salinity Dispute," mimeographed draft, May 23, 1973; a case study to appear in a publication of the American Society of International Law, tentatively entitled International Responsibility for Environmental Quality.
4. Norris Hundley, Jr., Dividing the Waters: A Century of Controversy Between the United States and Mexico, University of California Press, Berkeley and Los Angeles, 1966; see also his Water and the West, University of California Press, Berkeley and Los Angeles, 1975, p. 296.
5. For an excellent discussion of the background of Minute 242, see Myron Holburt, "International Problems of the Colorado River," Natural Resources Journal, Vol. 15, No. 1, January 1975, p. 11-26; see also Herbert Brownell and Samuel D. Eaton, "The Colorado Salinity Problem with Mexico," The American Journal of International Law, Vol. 69, p. 255-271.
6. See U.S. House of Representatives, Committee on Appropriations, Public Works for Water and Power Development and Energy Research Appropriation Bill, 1976, Hearings before the Committee on Public Works, 94th Session, 1st Session, Part 4, 1975, p. 537.
7. U.S. House of Representatives, Committee on Appropriations, Public Works for Water and Power Development and

Energy Research Appropriations Bill, 1977, Hearings before a Subcommittee on Public Works, 94th Congress, 2nd Session, 1976, p. 555 and 665.

8. Ibid.
9. Ival Goslin, "Outline History of Colorado River Development," paper presented at the Annual Meeting of the American Association for the Advancement of Science, February 28, 1974, p. 52-53.
10. U.S. Environmental Protection Agency, Proceedings of the Seventh Session Reconvened of the Conference on the Matter of Pollution of the Interstate Waters of the Colorado River and Its Tributaries--Colorado, New Mexico, Arizona, California, Nevada, Wyoming, Utah, April 25-27, 1972.
11. Public Law 93-320, June 24, 1974, 88 Stat 266.
12. U.S. Department of the Interior, Bureau of Reclamation, Colorado River Water Quality Improvement Program, 1972.
13. Letter from Russell E. Train, Administrator of EPA, to Hon. James A. Haley, Chairman, House Committee on Interior and Insular Affairs, March 11, 1974, in Hearings on H.R. 12165 and Related Bills before the Subcommittee on Water and Power Resources of the House Committee on Interior and Insular Affairs, 93d Congress, 2d Session, 1974, p. 57-59.
14. For a discussion of the politics of this legislation, see my "Politics in the United States and the Salinity Problems of the Colorado River," Natural Resources Journal, Vol. 15, No. 1, January 1975, p. 113-128.
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GLOSSARY[a]

aquifer	a body of rock that contains sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs
Colorado River Basin States	Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming
maf	million acre-feet
MW	megawatt
overburden	barren rock material, usually unconsolidated, overlying a mineral deposit and which must be removed prior to mining; the loose soil, silt, sand, gravel, or other unconsolidated material overlying bedrock, either transported or formed in place
Rocky Mountain States	Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming
spoil material	waste material removed in mining, quarrying, dredging, or excavating

[a]Definitions of geological terms are from Glossary of Geology, edited by M. Gary, R. McAfee, Jr., and C. L. Wolf, American Geological Institute, Washington, D.C., 1972.

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