DEVELOPING A NATIONAL WATER POLICY: PROBLEMS AND PERSPECTIVES ON REFORM

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INTRODUCTION

Countless laws, administrative procedures and regulations, administered by various regulatory institutions, allocate this nation's waters. Many of these mechanisms were devised to resolve local disputes and at the time of their design, were adequate for the tasks for which they were created. Unfortunately, the slow, uncoordinated, and narrowly focused process which produced our hodgepodge national water policy has, in itself, generated conflicts and imposed constraints on water development. Consequently, we are still grappling with yesterday's problems, while many of today's critical issues remain unattended. The time for reform is clearly at hand. However, the nature of the necessary reforms and the process for their adoption are solutions not so easily identified. The complexity of this problem is compounded by the fact that its most controversial aspects are wedded to long-standing social customs and regional biases. Local practices and customs are not easily changed, but unless they are immediately and objectively addressed, water crises of staggering and enduring scale may result.

THE NEED FOR A NATIONAL WATER POLICY

Our national "water policy," if in fact there is one, might be extracted from a plethora of federal statutes, regulations, and administrative decisions. The Reclamation Act of 1902,[1] the 1909 Rivers and Harbors Act,[2] the Flood Control Acts of 1917,[3] 1936,[4] and 1944,[5] the

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1. Reclamation Act of 1902, Pub. L. No. 161, ch. 1093, 32 Stat. 388 (codified at 43 U.S.C. § 371 *et seq.* (1976)).
2. Rivers and Harbors Act of 1909, Pub. L. No. 317, ch. 264, 35 Stat. 815.
3. Flood Control Act of 1917, Pub. L. No. 367, ch. 144, 39 Stat. 948 (codified at 33 U.S.C. §§ 702, 702h, 703 (1976)).
4. Flood Control Act of 1936, Pub. L. No. 738, ch. 688, 49 Stat. 1570 (codified at 33 U.S.C. § 701 *et seq.* (1976)).
5. Flood Control Act of 1944, Pub. L. No. 534, ch. 665, 58 Stat. 887 (codified at 16 U.S.C. §§ 460d, 825s, 43 U.S.C. § 390 (1976)).

Water Resources Planning Act of 1965,[6] the Federal Water Pollution Control Act Amendments of 1972,[7] and the Inland Waterways Revenue Act of 1978[8] are products of the uncoordinated legislative process that has been mapping our water course over the years. The most recent trends in this development can be traced to the recommendations of the National Water Commission (NWC) in 1973,[9] Congressional requests in the 1974 Water Resources Development Act for an Executive Branch study of national water policy,[10] and the Water Policy Initiatives set forth by President Carter in 1978.[11] The NWC's report urged that users share more heavily in payments for water projects; it also stressed a need for greater emphasis on the environmental impact of water resources development and emphasized concerns about restoring the quality of the nation's waters. The Executive Branch study of the Water Resources Development Act was never transmitted to Congress. As a result of Western States' fears of inadequate representation and the Carter Administration's policies, the Administration's initiative to develop a national water policy never got off to a favorable start.

Though recent programs have emphasized environmental concerns and conservation, it must be stated that conservation alone will not solve the national water problem. The need for development of new water sources still persists. Many regions in the United States are experiencing rapid growth, which demands that additional quantities of water be made available. Implementing conservation strategies may stretch present water supplies, but population growth cannot be sustained by demand reduction alone.[12] Future water developments will take advantage of more efficient water-use practices, but efficient use will only reduce demand incrementally. It cannot eliminate water supply requirements.[13] To accommodate increased supplies, additional storage capacity will have to be developed, and plans to replace aging urban water systems must be made, especially in the Northeast. In short, conservation's role in federally supported water resources programs must be placed in context with other proposed solutions to the

6. Water Resources Planning Act of 1965, Pub. L. No. 89-80, 79 Stat. 244 (codified at 42 U.S.C. § 1962 *et seq.* (1976)).
7. Federal Water Pollution Control Act Amendment of 1972, Pub. L. No. 92-500, 86 Stat. 816 (codified at 33 U.S.C. § 1251 *et seq.* (1976)).
8. Inland Waterways Revenue Act of 1978, Pub. L. No. 95-902, 92 Stat. 1693, Title II (codified at 26 U.S.C. §§ 513, 527, 4042, 4293 (1976)).
9. NATIONAL WATER COMMISSION, FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS OF THE NATIONAL WATER COMMISSION, WATER POLICIES FOR THE FUTURE (1973).
10. Water Resources Development Act of 1974, Pub. L. No. 93-251, 88 Stat. 12, Title I (codified in scattered sections of 16, 22, 33, 42 U.S.C.).
11. ENVIRONMENT AND NATURAL RESOURCES POLICY DIVISION OF SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES, 95TH CONG., 2D SESS., AN ANALYSIS OF THE PRESIDENT'S WATER POLICY INITIATIVES (Appendix) (Comm. Print 1978) [hereinafter cited as ANALYSIS].
12. URBAN WATER RESOURCES RESEARCH COUNCIL, AMERICAN SOCIETY OF CIVIL ENGINEERS, *et al.*, PROCEEDINGS OF THE CONFERENCE ON WATER CONSERVATION: NEEDS AND IMPLEMENTING STRATEGIES 117-18 (1979).
13. W. Viessman, Jr. & C. DeMoncada, Water Policy Issues Before the 96th Congress 18 (April 1979) (report published by Library of Congress, Congressional Research Service).

water-supply problem.[14]

As a possible result of overemphasizing conservation, the last four years have witnessed little progress in development of the nation's water resources. Presidential initiatives have spurred some changes in water policy, but studies and regulations have been produced in far greater quantities than has water for cities, agriculture, industry, or energy. During this period, water policy debates between the executive and legislative branches of government generally have resulted in stalemates. Nearly every energy and water development appropriations bill in the last four years has been embroiled in controversy, including the Carter Administration's 1977 "hit list,"[15] the Presidential veto in 1978,[16] and the snail darter (Tellico Dam) issue in 1979.[17] The only significant water resource legislation in that period appears to be the authorization of Locks and Dam 26 and its accompanying waterway-user charge. At a time when water problems are escalating, the fact that no other major water resources development legislation has been enacted underscores the need for a revitalized approach to national water policy.

PHYSICAL AND INSTITUTIONAL RESTRAINTS ON THE DEVELOPMENT OF WATER RESOURCE POLICIES

Discussions of national policy generally focus on perceived shortages in water supply or on degradation of water quality. Yet, the

14. *See* Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, ch. 26, 86 Stat. 816 (codified in scattered sections of 33 U.S.C.).

15. President's Message to Congress Recommending Deletion of Funds for 19 Projects from the 1978 Fiscal Year Budget. 13 WEEKLY COMP. OF PRES. DOC. 234 (Feb. 21, 1977).

16. H.R. 12928, the Energy and Water Development Appropriation bill, funding several dams and water projects, passed the Congress in September, 1978 and was vetoed by President Carter October 5, 1978. The House refused to override the veto. (The vote was 223-179; 276 votes were needed to override.) Later, Carter signed a version of the bill modified to meet his objections (H.R.J. Res. 1139). 124 CONG. REC. H11,599 (daily ed. Oct. 5, 1978).

17. The long-running controversy over the Tennessee Valley Authority's Tellico Dam began when Congress ordered completion of the dam, the Endangered Species Act notwithstanding, and the flood gates were finally closed on November 30, 1979. *See* Energy and Water Development Appropriation Act of 1980, Pub. L. No. 96-69, 93 Stat. 437 (Sept. 25, 1979).

> The Supreme Court halted construction of the dam in 1978, arguing that it violated the act because it would destroy the habitat of the snail darter, a tiny endangered fish. Congress then amended the law, setting up a special board with the power to grant exemptions. But in January the panel refused to exempt Tellico.
>
> In June, still angered by the decision, Sen. Howard H. Baker Jr., R-Tenn. tried to get Congress to grant an exemption for Tellico. But the Senate refused to go along, and voted 43-52 against an exemption amendment offered by Baker to the Endangered Species Act reauthorization (S. 1143).
>
> However, proponents of the dam persisted in the House and successfully slipped an exemption for Tellico into the fiscal 1980 energy and water development appropriations bill (H.R. 4388).
>
> When the appropriations bill reached the Senate, members again turned down a Tellico exemption. But on Sept. 19, when it became clear House conferees would not budge, the senators reversed themselves, 48-44, and gave the go-ahead to Tellico.
>
> President Carter signed the bill Sept. 26 over the strenuous objections of environmentalists but apparently in exchange for a promise from congressional leaders that the Endangered Species Act would be reauthorized without substantive changes.

37 CONG. Q. 2888 (1979).

real problem often lies with the various institutions charged with solving water-related problems. These institutions have been created by state and federal legislation, local customs, agency directives, and court actions. In some cases they have outlived their usefulness and now restrain, rather than facilitate, efficient water management. Reassessing the utility of these organizations is certain to involve legislative disputes on a state and national level, considerable cost in time and money, and assumption of some political risk. Unless reforms are made, however, future water supplies may be insufficient to meet growing regional demands.

Water Allocation among Competing Uses

The drought of 1976-77 intensified the nation's emerging water allocation problems. At issue is the distribution of scarce water resources for recreation, environmental enhancement, food and energy production, and municipal and industrial supplies. From a nationwide perspective, there is sufficient water to meet projected needs well beyond 1985.[18] This projection should be tempered, however, by a realization that national totals do not reflect geographic or seasonal variations; in fact, some severe local and regional problems can be expected. The most significant water supply problems exist or are anticipated in Southern California, the Great Basin,[19] the Lower Colorado River Basin, the Rio Grande Basin, the High Plains of Texas, and the South-Central portion of the Missouri River Basin.[20] The agricultural irrigation necessary in these areas requires consumption of great quantities of water. The possibility for water shortages increases in those regions in which mining and processing of coal and oil-shale deposits is expanding. Unless the allocation of water resources is improved, scarcity of water supplies may soon limit economic growth in these critical areas.[21]

The avenues of relief ought to include development of additional resources, reduction in the quantities of water used, and more efficient

18. U.S. WATER RESOURCES COUNCIL, 1 THE NATION'S WATER RESOURCES: 1975-2000 2 (Dec. 1978).

19. The Great Basin refers to the northern part of the Basin and Range Province of West-Central United States:

> Great Basin, the northern part of the Basin and Range Province of west central United States. It is roughly a heart-shaped area about 800 miles long, and in the north 500 miles wide. The northern boundary is formed by the Snake River district of the Columbia Plateau, and the eastern margin is the Wasatch Range and the Colorado Plateau. The narrow southern end is bordered by the Lower Colorado Basin and the Arizona Highlands, while the western boundary is the Sierra Nevada Range. This district coincides with the state of Nevada, and a small part of western Utah, southeastern Oregon, southwestern Idaho, and the extreme southeastern border of California.

11 COLLIER'S ENCYCLOPEDIA 340 (1977).

20. SENATE COMM. ON AGRICULTURE, NUTRITION AND FORESTRY, 96TH CONG., 1ST SESS., RENEWABLE NATURAL RESOURCES: SOME EMERGING ISSUES (Comm. Print April 9, 1979) [hereinafter cited as RENEWABLE NATURAL RESOURCES].

21. *Id.*

management of water-allocation plans. Implementation, however, of every option available to ease the severity of water resource problems will be a difficult task. As noted by the Senate Committee on Agriculture, Nutrition, and Forestry, obstacles to development of optimal water policy and use include:

> —the prevailing body of variant and constraining water law;
> —the failure to recognize the interdependency of surface and ground waters;
> —the artificial separation of water quality from water quantity management;
> —the belief that per-capita water use must continually increase to maintain a high standard of living; and
> —the failure to establish a price for water which is commensurate with the value of its use.[22]

Although a shift towards "total water management" has been urged by some as a solution to these problems, such a shift may not be attainable, unless there is greater cooperation among institutional entities.[23] A sound federal-state partnership has been recommended by many as the foundation for efficient water management, but it has yet to become a reality.

Water Quality

According to the tenth annual report of the President's Council on Environmental Quality (CEQ),[24] pollution and misuse continue to damage our water resources.[25] The report cites water problems throughout the country and notes that improvements in water quality and supply are lagging due to sewer overflows, urban and agricultural runoff, overloaded sewage treatment plants, and toxic-waste disposal. Nationwide measurements of five key pollutants—fecal coliform bacteria, dissolved oxygen, phosphorous, mercury, and lead—have shown little change in concentration during the period 1975 to 1978, the last period for which complete pollution data exist.[26] In particular, the CEQ criticized the slow progress of the municipal sewage treatment construction grants program. Although Congress has appropriated over twenty-eight billion dollars for the massive cleanup effort, only two and one-half billion dollars were spent on completed projects by December 1979.[27]

To date, most of the effort to improve water quality has focused on point-sources of pollution and on particular pollutants.[28] The dimen-

22. *Id.* at 42-43.
23. *Id.* at 43.
24. PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, TENTH ANNUAL ENVIRONMENTAL QUALITY REPORT (1979) [hereinafter cited as TENTH ANNUAL REPORT].
25. *See id.* at 75-155.
26. *Id.* at 78.
27. TENTH ANNUAL REPORT, *supra* note 24, at 112.
28. Kneese, *Better Use of Water Management Tools*, in WESTERN WATER RESOURCES: COMING PROBLEMS AND THE POLICY ALTERNATIVES 96 (1979) (symposium sponsored by the Federal

sion of the non-point source pollution[29] problem, however, is such that many experts believe little new progress in cleaning up rivers and streams is attainable unless a major effort to control these diffuse sources is mounted. Non-point pollution is tied to large regional systems that are not amenable to conventional water pollution controls. For example, the CEQ reported that sediment flows from non-point sources were 360 times greater than those from municipal and industrial outlets.[30]

The trend in water quality management has focused on centralization of water management through imposition of federal uniform rules. The Water Quality Act Amendments of 1965[31] attempted an individualized description of the nation's water courses with regard to composite water quality. This approach was abandoned in favor of a "uniform technology program" that ignores the water quality problems of different geographical areas. The development of regional institutions, which can confront individual issues and manage them accordingly, must be reconsidered as part of a national water policy.

In light of the problems identified, we must undertake a careful legislative reexamination of the Clean Water Act.[32] Establishing realistic clean water goals, reducing the high costs of sewage treatment works, and determining the proper role of advanced waste treatment are issues that should be addressed. In addition, innovative options should be encouraged and implemented, including land applications of effluents and wastewater reuse. Overriding these issues is the need to clarify the roles of private industry and government at all levels, and the need to determine how realistic water quality goals may be achieved at reasonable cost to taxpayers.

Hydroelectric Development

The energy crisis has rekindled interest in the development of new hydroelectric facilities and the improvement of existing ones. In particular, the idea of installing small units on minor rivers and tributaries has become increasingly popular. With the escalating costs of other energy sources, many abandoned hydroelectric facilities now offer at-

Reserve Bank of Kansas City, Sept. 27-28, 1979) [hereinafter cited as WESTERN WATER RESOURCES].

29. An Environmental Protection Agency report defines non-point sources as the effects from urban run-off, construction, hydrologic modification, silviculture, mining, agriculture, irrigation return flows, solid waste disposal, and individual sewage disposal. *Supra* note 27, at 86, citing U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL WATER QUALITY INVENTORY-1977 REPORT TO CONGRESS, EPA-440/4-78-001, 9-15 (1978).

30. Well-stocked, undisturbed southern pine forests of the Coastal Plain may be expected to yield 200 to 300 tons of sediment per square mile per year. WATER RESOURCES RESEARCH INSTITUTE, NON-POINT SOURCES OF WATER POLLUTION 10 (July 1976) (seminar conducted by Water Resources Research Institute, Oregon State University).

31. Water Quality Act of 1965, Pub. L. No. 89-234, 79 Stat. 903 (codified at 33 U.S.C. § 1151 *et seq.* (1970)).

32. Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (codified at 33 U.S.C. § 1251 *et seq.* (1976)).

tractive possibilities for augmenting electrical energy needs.[33] Moreover, hydroelectric projects are not fuel consumptive and do not create air or water pollution problems.

In 1979 hydroelectric power was providing approximately 64,000 megawatts (MW) of electrical energy from 1,251 facilities. This was approximately thirteen percent of the country's electric generating capacity. Hydroelectric potential from existing, additions to existing, and undeveloped sites is now estimated at more than 512,000 MW.[34] Preliminary estimates of the National Hydroelectric Power Resources Study by the United States Army Corps of Engineers suggest that additional development of 4,500 feasible, undeveloped sites could raise the nation's generating capacity by approximately 354,000 MW. This would be in addition to the increase in hydroelectric power which could be generated at approximately 5,400 existing locations. Although as much as fifty percent of this potential might be difficult to realize, the remainder is significant and warrants rapid development.

Constraints on achieving the projected potential are mainly economic, environmental, and institutional, rather than technical.[35] The inadequacy of federal criteria and procedures for licensing new hydroelectric facilities, the continuing standoff between the Administration and the Congress over water project development, the difficulties encountered by small dam owners in attempting to market the energy they produce, and the uncertainty of payoff from retrofitting existing generating systems or installing new units at existing dams have acted to slow the movement toward capitalizing on this readily available and generally noncontroversial energy source.

Instream-flow Use of Water

"Instream-flow use" is the amount of water flowing through a natural channel which sustains the supply of water needed for the channel's various uses; these uses may include fish and wildlife population maintenance, outdoor recreational activities, navigation, hydroelectric generation, waste assimilation, ecosystem maintenance, and conveyance to downstream points of diversion. Water that must be maintained for instream-flow uses cannot be withdrawn for alternative purposes.

The United States Fish and Wildlife Service was given the task of quantifying instream-flow requirements for the Water Resources Council's 1975 National Assessment. Their estimates were not completely accurate or scientific, but they show that instream-flow reservations could be considerable and create major impingements on water

33. J. GLADWELL & C. WARNICK, LOW-HEAD HYDRO: AN EXAMINATION OF AN ALTERNATIVE ENERGY SOURCE (September 1978) (published by the Idaho Water Resources Research Institute) [hereinafter cited as ALTERNATIVE ENERGY SOURCE].
34. W. Viessman, Jr. & C. DeMoncada, Water Resources: Small-scale Hydroelectric Development 1 (Feb. 14, 1978, updated Jan. 9, 1981) (report published by Library of Congress, Congressional Research Service).
35. *Id.* at 4.

uses.[36] The impact of proposed instream flow reservations on energy development and expanded irrigated agriculture in the West is a case in point.

Determination of reasonable estimates of instream-flow needs and delineation of the federal government's role in resolution of regional issues present policy questions which must be answered. Another question of concern to policymakers is who should set national and regional priorities for instream-flow reservations; in this regard, the role of the Fish and Wildlife Service needs careful scrutiny. In addition, fair and practical mechanisms that maximize the compatibility of instream and offstream uses of the nation's waters must be implemented.

Ground Water Depletion

Ground water resources in some regions are being rapidly depleted due to inadequate regulation of withdrawals. In many states, the water rights system fails to recognize that ground water is related to surface water and that stream flows can be affected by ground water pumping.

Ground water management is of national importance. It is complicated by poorly devised laws, spotty regulations, lack of data, and political sensitivity. Some developments are oblivious to critical ground water-surface water interrelationships.[37] The President's water policy of 1978 recognized the problem and directed the Departments of Agriculture and Interior, through a variety of approaches, to encourage conservation and discourage ground water depletion in agricultural assistance programs which affect water consumption in water-short areas.[38]

Federal and state government should seek to develop a comprehensive program of incentives and penalties which will facilitate the wise use of groundwater resources.

ADDITIONAL FACTORS AFFECTING WATER RESOURCES POLICIES

State Water Law

Water policies in the Western States must focus attention on the need for improvement in state water law. The federal government should not be permitted to preempt or countermand state water laws. The states and the federal government, however, must achieve a level of uniformity and understanding so that critical issues of water allocation can be resolved with a minimum of conflict.

36. ALTERNATIVE ENERGY SOURCE, *supra* note 33, at 34.
37. RENEWABLE NATURAL RESOURCES, *supra* note 20, at 44.
38. ANALYSIS, *supra* note 11, at 44.

According to Emery N. Castle, western water law can best serve those holding water rights ". . . if existing rights can be defined and quantified, if the extent of third party interests can be specified, and if water rights can be transferred through the payment of compensation."[39] The trouble is that there are no mechanisms to facilitate the sale, lease, or transfer of water rights in many states. In the East, common law water rights doctrines often forbid the transfer of ground water from overlying land, and states that regulate water by means of permit systems generally prohibit transfers. In theory, many Western States can accommodate water rights transfers, but these can be difficult to effect in practice.[40] Adding to the difficulty is the uncertainty about possible adverse affects on third parties, an uncertainty which often inhibits water rights transfers that are otherwise legal.

Federal Reserved Water Rights Determination

Few water issues have caused more friction in state-federal relations than that of the "federal reserved right." This right interferes with state laws governing the acquisition, control, and distribution of water. It also permits the federal government to circumvent the states' appropriation procedures.[41] The impact of these federal reserved water rights is significant in public land states because considerable amounts of water originate on or flow through federal lands. To date, adjudication of federal reserved rights has been minimal.

In attempting to strike a water-allocation balance, special consideration must be given to the integration of federal reserved water rights into existing state water rights systems. Thereafter, these rights could be subject to court decrees, interstate compacts, or other institutional developments affecting the source of water involved.

Indian Water Rights Determination

The competition between Indian and non-Indian claims to water rights poses extraordinary problems.[42] Most Indian reservations predate the extensive water development projects in the Western United States. The use of water by Indians in significant quantities, however, has developed only in recent years.

The resource potential of Indian reservations is enormous. In the Northern Great Plains, for example, large reserves of coal and other valuable minerals lie under most Indian lands. In addition, many reservations have outstanding recreational features, and several contain

39. Castle, *Keynote Address*, in WESTERN WATER RESOURCES, *supra* note 28, at 9.
40. Trelease, *Water Law, Policies, and Politics: Institutions for Decision Making, id.* at 205-06.
41. Federal reserved water rights refers to the right to sufficient water for public lands such as national parks, military posts, national forests, and wildlife refuges.
42. For a concise treatment of some of these problems, *see* NATIONAL WATER COMMISSION, WATER POLICIES FOR THE FUTURE, FINAL REPORT 473-83 (1973).

large areas suitable for agricultural development.[43] In keeping with these potentials, preliminary surveys indicate that Indian water requirements may absorb a significant portion of the annual flows of the Missouri River and its tributaries.[44] The tribes are concerned that water used for energy and other non-Indian development will adversely affect their water rights by causing depletion of supplies critical for sustaining future economic developments on their reservations. They seek assurances from the federal government that their water requirements will be properly considered in development of water resources policy.

The federal government has embarked on a ten-year plan to evaluate Indian claims to water.[45] In the meantime, important issues must be addressed. Indian claims must be coordinated with other water uses. To accommodate non-Indian developments, such as those associated with energy, mechanisms for sale, lease, or other transfer must be devised.

Rational water planning requires eventual quantification of all existing water rights and proposed water uses, including Indian claims. Until consensus on this issue is reached, estimates of future demands on water resources will be inaccurate, and decisions on tradeoffs with other uses will be difficult.

TECHNICAL SOLUTIONS TO REGIONAL PROBLEMS

Inter-basin Transfers of Water

Inter-basin transfers of water offer technical solutions to regional water problems. The concept of inter-basin transfers is not new. In a report published in the *Geographical Review*,[46] Frank Quinn surveyed 146 inter-basin transfers in the Western United States that as of 1965 totalled more than eighteen million acre-feet of water per year. Attitudes toward such undertakings range from approval to strong condemnation, especially on environmental grounds.

Many large-scale inter-basin transfer schemes have been proposed. The best known are the Pacific Southwest Plan,[47] the North American Water and Power Alliance (NAWAPA),[48] the Texas Water Plan,[49] and

43. SUBCOMM. ON ENERGY RESOURCES AND WATER RESOURCES OF THE SENATE COMM. ON INTERIOR AND INSULAR AFFAIRS, 94TH CONG., 2D SESS. WATER RESOURCES OF THE MISSOURI RIVER BASIN at x (Comm. Print 1976).
44. *Id.*
45. U.S. DEPARTMENT OF INTERIOR, OFFICE OF THE SECRETARY, FINAL REPORT ON PHASE I OF WATER POLICY IMPLEMENTATION 20 (1980).
46. Quinn, *Water Transfers*, 58 GEOGRAPHICAL REV. 108-32 (1968).
47. Warnick, *Historical Background and Philosophical Basis of Regional Water Transfer*, in ARID LANDS IN PERSPECTIVE 345 (1969), *citing* U.S. BUREAU OF RECLAMATION, PACIFIC SOUTHWEST WATER PLAN, DEPARTMENTAL TASK FORCE REPORT (1963).
48. *Id.* at 345, *citing* Ralph M. Parsons Company, North American Water and Power Alliance, Brochure 606-2934-19 (1963).
49. *Id.* at 346, *citing* Schott, *Fetching a Water Plan, Texas Style*, Wall St. J., Sept. 23, 1968, at 12;

California's large intrastate project.[50] These projects would transport up to 110 million acre-feet of water annually.[51] Many existing and anticipated water shortages could be resolved in this manner, but the necessary tradeoffs deserve careful attention.

The concept of water importation has always sounded good, especially to the receiving region, and from a regional development viewpoint there is no doubt that significant benefits might be derived. It is apparent, however, that the unit costs of imported water would be extremely high and that even if funds for construction were available, few states would be willing to sell their "birthright" without rewards so high as to preclude economic feasibility.[52] On the other hand, international water transfers might be effected, if the benefit from water development in the exporting country (Canada) could be made high enough, and if the water for export flowed north into the Arctic unused. However, environmental disruptions could be large, and solutions for such ecological problems would have to be found.

Inter-basin transfers are viewed more favorably, if the imported water is to be used for oil shale or coal development to alleviate the energy crisis.[53] In a recent study of the Upper Colorado River Basin,[54] the Colorado Department of Natural Resources found that a program for production of oil from oil shale and coal, yielding the equivalent of one and one-half million barrels of oil per day, could be developed in that region without significantly affecting other water uses through the year 2000.[55] If Mideast oil crises and national energy requirements necessitate greater production of energy by 2000, then water importation into the Upper Colorado Basin could be essential. Thus, large water-import schemes may be necessary for development of such energy projects.

CONFLICTS IN INTERESTS AND EFFORTS: THE INSTITUTIONAL QUANDARY

As waters are designated for specific uses, the potential for conflicts among environmentalists, ranchers, irrigators, adjacent well-users, energy firms, cities, and industries escalates. For example, agricultural development in the Western United States has advanced to the point where it must compete for water supplies with the demands made by

U.S. BUREAU OF RECLAMATION, REGION 5, U.S. DEP'T OF INTERIOR, PROGRESS REPORT ON WEST TEXAS AND EASTERN NEW MEXICO IMPORT PROJECT INVESTIGATIONS (1968).

50. *Id.* at 345, *citing* Cal. Dep't of Water Resources, The California Water Plan, Bull. No. 3 (1957).
51. *Id.* (Figures represent summation of figures in last column of table 1, pp. 345-46.)
52. Schad, *Western Water Resources*, WESTERN WATER RESOURCES *supra* note 28, at 120.
53. K. Kauffman, Guns, Courts and Compromise 10 (unpublished report on file at *Journal of Legislation* office).
54. COLO. DEP'T OF NATURAL RESOURCES, DRAFT REPORT: AVAILABILITY OF WATER FOR OIL SHALE AND COAL GASIFICATION DEVELOPMENT IN THE UPPER COLORADO RIVER BASIN (1979).
55. *See* K. Kauffman, *supra* note 53, at 10.

energy production; this competition signals dry years for farmers. Water is often available but locked out of use due to regulations, laws, institutions, and fear.[56] As Governor Scott M. Matheson of Utah has commented, "The key to an effective water resources policy for the United States is in the institutions we build to manage this resource."[57]

Cost of Law Enforcement

During recent years a formidable body of laws and regulations has been enacted, most of which pertains to environmental controls; however, it impacts on water use and development as well. These laws and regulations have been monitored to assure compliance. Strict interpretation by federal agencies and courts has hampered subsequent water development. In several instances, the construction of major water projects has been foreclosed.[58]

These disjointed actions by various arms of government produce indecisiveness in the policymaking process. This uncertainty must be reduced. Environmental goals and objectives must be specified, and the means for achieving them, stabilized, for decisionmaking in the private sector responds to incentives and adjusts to regulation. Private sector performance is hampered if rules constantly shift and agencies apply regulations in an erratic manner. Furthermore, if the public sector makes dilatory determinations of permissible activities, the private sector functions at a less efficient and more costly level. According to Castle,[59] the economic cost of improving environmental quality may not be excessive, if the cost of rulemaking, enforcement, and intervention is ignored.[60] Nevertheless, these costs cannot be ignored and, therefore such regulation, must be made more consistent and predictable.

In addition, environmental laws and regulations have been used inappropriately to impede development of water and other resources. Many activities of special interest groups, including the formation of coalitions, aid the development and application of legal, economic, and social constraints to the use and acquisition of water. Calling for an end to the misuse of environmental laws, R. Keith Higginson, former Commissioner of the Water and Power Resources Service, has said:

> Congress ought to seriously consider requiring those who bring suits under NEPA or the other environmental laws to post bonds sufficient to offset the increased costs of projects when their objections are overruled. . . . The Rare and Endangered Species Act should be used to

56. Baumann & Boland, *Urban Water Supply Planning*, WATER SPECTRUM 35 (Fall 1980).
57. Matheson, *A Western Governor Looks at Water Policy*, in WESTERN WATER RESOURCES, *supra* note 28, at 103.
58. K. Kauffman, *supra* note 53, at 7.
59. Dr. Emery N. Castle is President of Resources for the Future, Inc., a leading natural resources research organization. Dr. Castle has been associated with Oregon State University, Department of Agricultural Economics.
60. Castle, *Keynote Address*, in WESTERN WATER RESOURCES, *supra* note 28, at 11.

protect significant plants and animals—not as a tool to stop projects.[61]

To the extent that state water laws are exempted from proposed "fast-track" procedures for energy development, water acquisition will become a focal point for opposition to development projects. Experience has shown that social and political resistance to a project can transform what are otherwise procedural steps into major obstacles.

Legislative Delays

Congressional initiatives to protect, develop, or manage national water resources are often subject to delays and stoppages due to overlaps in committee jurisdiction in the House and to a lesser degree in the Senate.[62] For example, programs of the Corps of Engineers are under the jurisdiction of the House and Senate Public Works Committees, while those of the Water and Power Resources Service are under the jurisdiction of both the House Interior Committee and the Senate Committee on Energy and Natural Resources. The related issues of water-quality management and water supply are placed within the jurisdiction of different subcommittees, exacerbating the separatism problem. Herein lies a fundamental weakness in developing a comprehensive water policy.

ALTERNATIVE MECHANISMS FOR CHARTING REFORM

One possibility for reform lies in Congressional restraint from detailed decisionmaking, in favor of a more programmatic approach to water rights policy.[63] With regard to small, non-controversial projects that require a minor commitment of federal funds, Congress has been willing to let federal agencies make decisions.[64] This practice could be extended. Constituency relationships at the local level would still need to be monitored, since such a change could actually decrease the level of Congressional support for water projects. Nevertheless, delays in authorizations and reductions in appropriations would probably be reduced by such a process. Congress would also be free to set priorities more carefully and assess the merits of major programs and projects, using this more general approach to water policy.

As previously noted, Congress needs a more unified and efficient system for developing water policy. Committee assignments are not based upon subject matter of the proposal but upon the identity of the sponsoring agency. To deal more directly with river basin planning, therefore, Congressional practices must be modified through incremen-

61. National Water Line (Oct. 31, 1980) (available from the Nat'l Water Resources Ass'n).
62. *Water Resources Development Act of 1979: Hearings before the Subcomm. on Water Resources of the Senate Comm. on Environment and Public Works*, 96th Cong., 1st Sess., pt. 5, at 37 (1980).
63. *Id.* at 39.
64. *Id.* at 40.

tal changes in jurisdiction. Concerned committees could also hold joint hearings on comprehensive river plans.

The United States Senate recognized this need in April of 1959, when it created a Select Committee on National Water Resources.[65] The authorizing resolution directed the Committee

> [to] make exhaustive studies of the extent to which water resources activities in the United States are related to the national interest, and the extent and character of water resources activities, both governmental and nongovernmental, that can be expected . . . to provide the quantity and quality of water for use by the population, agriculture, and industry between the present time and 1980, along with suitable provision for related recreational and fish and wildlife values.[66]

In its report, the Committee defined water resources in the United States in terms of gross water supply and water use for the entire country and in terms of twenty-four water-resources regions into which the contiguous United States had been divided. It made five general recommendations for action deemed necessary to permit the nation to meet the future demands on its water resources.

Although the report of the Senate Select Committee contained relatively few recommendations,[67] it provided the basis for legislative action. Out of that study emerged the Water Resources Council, the Office of Water Research and Technology, and the existing national assessment process. The Senate Select Committee effected progressive reforms, for it was composed of members of the Congress who believed in their findings and were instrumental in seeing them implemented.

CONCLUSION: PROPOSAL FOR CONGRESSIONAL ACTION

The many complex issues reviewed in this paper demand the development of an effective strategy for their resolution. This strategy must be implemented on a broad scale, taking into account federal, state, and local governments and all facets of water policy. To effect such a change, Congress must become directly involved in this process, as it was in the late 1950's during the existence of the Senate Select Committee.

In order to avoid massive shortages of water and resulting economic disruptions, we must devise a sound water policy posthaste. This policy must take into consideration competing water uses, social custom, environmental quality, and the development of new sources of energy. Moreover, it is the Congress which must initiate the process by eliminating the current bottlenecks in its committee system and procedure that currently stymie efforts at reform.

To this end, I propose a joint committee whose members represent

65. S. Res. 48, 86th Cong., 1st Sess., 105 CONG. REC. 6302 (1959).
66. *Id.*
67. S. Rep. No. 29, 87th Cong., 1st Sess. 17-19 (1961).

the key water resources committees of Congress. This joint committee would be charged with the task of producing a water strategy capable of being implemented within the shortest time frame possible. It would call for participation of state agencies in a determined effort to provide a plentiful supply of water in all parts of America, a supply adequate to meet the needs of every reasonable use.

It is time for us to realize that we do not have to choose between economic growth and environmental quality or between extreme individualism and collective paralysis. Rather, what is needed is a marshalling of our talents to provide for a coordinated effort to further all of our legitimate concerns. This is the task that lies before the architects of our nation's water policy. The time for action is now. I believe that if the task is to be done, the most knowledgeable and influential members of Congress must be at the vanguard.