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SELECTING ALTERNATIVES IN WATER RESOURCES PLANNING AND THE POLITICS OF AGENDAS

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The bureoning enthusiasm for "consideration of alternatives" in water resources management is perhaps comparable to previous enthusiasms over the concept of multiple use when that idea was new. The merit of each clearly derives from the expansion of opportunities which each portends, and from the potential for satisfying simultaneously a number of the objectives of participants with diverse interests. Two dilemmas are always encountered when a new approach is thrust upon the scene. First, of necessity the model is a broad and quite general one, a fact which in part leads to its adoption as symbol or reality.

Second, it must follow that as efforts are made to put the approach into practice, it is discovered that the "details" present obstacles to achievement of the interests or broad objectives embodied by the symbol. For example, while multiple use is clearly a valuable concept and useable as an approach to planning for land or water use, by definition a true wilderness is not compatible with a dense tourist trade in one and the same place, nor is a reservoir full of potential irrigation water useable for flood control at one and the same time. These illustrations suggest conflict not accommodation. Consideration of alternatives reveals similar dilemmas.

The notion of evaluating a number of alternatives in planning for water resource development and management customarily carries with it several implicit objectives. On the one hand it is argued that expanding the number of alternatives considered enhances the likelihood that the most efficient way to achieve a given objective will be found. Or, it is suggested that if a number of objectives are to be satisfied, examination of a broad range of alternatives will enhance the likelihood that the largest number of objectives will be simultaneously satisfied. These arguments imply a search for an efficient solution to a single common goal or for a common solution which will satisfy several goals. They imply a kind of general agreement about objectives, or at least an enthusiastic approach to accommodation. Opportunities rather than constraints are emphasized, and most

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importantly accommodation rather than conflict. In essence, the process of selecting alternatives for review is viewed as benign and inevitably helpful.

The problem of selecting alternatives for evaluation in water resource projects in the real world, in addition to being bound by physical and technological limitations, involves two distinct approaches, one benign and analytical stance, the other participatory or decision making. By attempting to sharply distinguish the analyst from the decision maker, much systems and planning literature presumes that the analyst can have his cake and eat it too—that is, that he can elicit objectives, summon alternatives, delineate conflicts, and turn the decision making over to the "decision maker." I suggest that this is not possible simply because the agenda of alternatives is too important. Engineering and planning discussions of the enumeration of alternatives have minimized the significance of social or ideological conflicts.[1] However, literature in the field of political science dealing with agenda building appears to provide some useful analogies to the problems involved in choosing alternatives to be evaluated in water resources along with some insight into the political significance of the process.

AGENDAS AND ALTERNATIVES, FUNDAMENTALS OF DEMOCRATIC POLITICS

A number of recent studies in political science have drawn attention to the importance of control of the agenda of issues which may be placed before the body politic for decision. It has been noted that the distribution of influence and access in any political system has inherent biases and that the range of issues and alternatives that will be considered by a policy is restricted.[2] While emphasizing that, "the most important strategy of politics"[3] is concerned with the scope of conflict, Schattschneider concludes that, "Democracy is a competitive political system in which competing leaders and organizations define the alternatives of public policy in such a way that the public can participate in the decision-making process."[4] Looked at in this way, the agenda of alternatives to be considered is not only fundamental to the democratic process but access to the agenda, rather than being simply an intellectual exercise and a pro-forma act of the

1. Ortalano, *Water Plan Ranking and the Public Interest*, 102 Am. Soc. Civ. Eng'r J. Water Res. Planning and Mngmt. 35 (1976).

2. R. Cobb and C. Elder, Participation in American Politics, The Dynamics of Agenda Building 10 (1972).

3. E. Schattscheider, The Semisovereign People 3 (1960).

4. *Id.* at 141.

planning process, represents in reality the politics of influencing or controlling the outcome of a contest or decision.

Technological or physical factors may markedly limit the range of feasible solutions or approaches to problems of water resource development and management. Not infrequently, however, what may appear to be technological or physical constraints are matters of custom or solutions preferred by those who have dominated the process of selecting alternatives deemed suitable for review.

In theory one might argue that all possible alternatives should be explored and that the selection process should reflect the potential benefits to all parties involved of a given course of action relative to its cost along with the costs of the inquiry itself. Such a calculus runs into all the usual problems of benefit-cost analysis including the difficulty of evaluating the trade offs between the gainers and losers in both economic and political terms. Given the fact that determination of alternatives to be explored is a political process, it resembles the concept of agenda building in that the objective of any interested party is either to get its alternative explored or to see to it that someone else's alternative is not explored if the participant feels that the exploration itself will weaken his own case. The alternatives which may be selected for inquiry are likely to be dominated by the values or biases and inertia of those vested with the responsibility for such inquiry.[5] The introduction of fresh alternatives is not easy. Technological change, for example, may create new opportunities, as the introduction of the science of soil mechanics and heavy earth moving equipment did on the Missouri River in the thirties. However, the introduction of a new alternative may well require the intercession of a new interest group.

Those who are content with the customary alternatives or choices which they have come to expect from Congress or executive agents do not wish the agenda of alternatives enlarged, new participants seek to secure on the agenda for analysis an alternative which it is hoped will support a new objective. Exploration of a new alternative reduces the likelihood that the solutions of the original parties will be achieved. Thus they will prefer a narrower set of alternatives and are likely to resist inclusion of new options.

Schattschneider structures the discussion of issues in the context of conflict. By analogy, the different objectives of those interested in a water program, of course, lead to controversy. According to Schattschneider four principles govern the process: 1) the outcome of conflict is determined by the extent to which the audience becomes

5. R. Cobb and C. Elder, *supra* note 2, at 10.

involved, 2) the most important strategy of politics is concerned with the scope of conflict, 3) the relative strength of contestants is likely to be known in small conflicts, and 4) the balance of forces is not fixed and that it is in the interest of a free society to maximize the contagion of conflicts.[6] These principles of conflict in the political arena and the conclusion that modern democracy requires a structure which permits citizens to influence the choice of issues and alternatives as well as the decisions about them also relate directly to the complex problem of "citizen participation." Reviewers have pointed out that current enthusiasm for public participation has a nice ring, but raises a number of knotty and fundamental social and political issues which have long concerned theorists and practitioners in democratic societies.[7] These same issues of conflicts of interest, of representation, and of the public interest also affect the selection of alternatives. Interestingly enough, one can envision circumstances in which the expansion of public participation, rather than expanding might constrict the agenda of alternatives.[8] In line with the problem of loss of control consequent upon expanding the number of participants in a controversy, those who wish to control the agenda may exercise even greater caution in enumerating alternatives in order to lessen the risk that public participation will get out of hand.

In sum, the facts of geography involving local, regional, state, and national interests as well as the pluralism of society involving individuals and interest groups automatically influence the choice of alternatives to be explored, the depth of inquiry, and the prospects for adoption of a given course of action. The literature of political science deals extensively with these issues.[9] To some degree, however, the literature in water resources is more cavalier both in adopting the symbols of planning and in accepting the rhetoric for the reality. This, of course, is only true of the literature. The reality continues to provide excellent examples of the fundamental issues surrounding decision making in a democratic society. Drawing upon a number of examples, an attempt is made here to suggest the nature of the constraints which have influenced the selection of alternatives considered in water resources development and management. Some of these illustrate the way in which the agenda of alternatives has been enlarged by expanding the arena of interests, others illustrate where this effort has failed. The "all alternatives" model is treated

6. E. Schattscheider, *supra* note 3, at 2-5.

7. Wengert, *Citizen Participation Practice In Search of a Theory,* 16 Nat. Res. J. 23 (1976).

8. M. Crenson, Information derived from personal communication (1976).

9. Wengert, *supra* note 7.

briefly not because no one else seems interested, but rather because the logic of such an approach warrants its consideration as a means of calling attention to the range and magnitude of alternatives available to achieve a given set of objectives which are not considered because a prior process, making the budget, defines the scope and money which can be used for "water resources."

AN ALTERNATIVE APPROACH

The most general approach dealing with alternatives in water resources decisions requires the identification of the objectives of all interested parties, the exploration of all alternatives which might meet these objectives, an enumeration of gains and losses to each of the parties in pursuing each alternative, and a weighing of these gains and losses, both economic and noneconomic, to arrive at a choice or course of action. Such a general picture is suggested by the matrix of objectives and alternatives for the Colorado River presented by the Committee on Water.[10] The Committee's report noted that a number of the objectives of the parties interested in developing additional water for Arizona from the Colorado River project were objectives whose achievement need not involve water at all or perhaps only remotely. Many areas are interested in water projects because it is believed that they contribute to economic improvement. To the extent that money from outside the area, for example Federal dollars derived from taxes paid by all citizens, is required for such projects, the Committee suggested that alternatives such as giving money to citizens of the area, endowing school systems or universities, or building the transportation network might accomplish the economic objective more effectively and more efficiently.

Commentators on this proposal to include "all" alternatives were quick to remark that the subject was water and that once the budget for water had been established, then alternatives could be considered; in effect, that it was unfair to reopen alternatives already closed through a higher budgetary process. Thus, within the framework of opportunities afforded by water resources projects, one might consider objectives such as those specified by the Water Resources Council including economic efficiency at the national level, regional economic effects, social well-being, and environmental effects, but the alternatives to achieve these objectives must be water related. There is, of course, validity in recognizing budgetary realities. This reality, however, is simply one among many constraints which hem in the choice of alternatives.

10. U.S. Dep't of Interior, Comm. on Water, The Nation's Rivers 56 (1968).

It is interesting to note that ready acceptance of a highly compartmentalized budget and distribution of responsibility does not restrain the language of the National Environmental Policy Act which directs, "all agencies of the Federal government shall include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on alternatives to the proposed action."[11] Although the Act is supplementary to other authorizations of Federal agencies, it is not surprising that many groups seek to broaden the range of alternatives. It is equally unsurprising that anyone interested in building a dam, locating a refinery, or designing a pipeline, attempts to narrow the spectrum of alternatives in the hopes of bringing the project to fruition.

From an analytical standpoint, there is every reason why attempts should be made to free analyses from constraints in order to look at the possibilities open to the public and its decision makers, even if the realities currently preclude adoption of some of the alternatives explored. The fact that such unconstrained analysis is desirable, however, also suggests that a distinction must be drawn between analyses that may be useful in exploring public decision making and their desirability or usefulness as tools in arriving at a decision in a given case. In the latter the value of the inquiry depends heavily on the objective which one seeks and on the likelihood of a given outcome.

In the examples which follow an attempt is made to draw attention to this pervasive tension between the desire to open up the decision making machinery and the countervailing tendency to act. Schattschneider maintains that this tension between "privatization and socialization of conflict" has often been disguised as tendencies toward centralization or decentralization, or localization versus nationalization.[12] The past forty years of water resources management has, of course, seen a marked increase in nationalization and hence, presumably, socialization.[13] Clearly, conflict control is not the sole restraint on the inclusion of alternatives in considering water resources development and hence the examples cited here include a range of constraints which have acted to control or restrict the choice of alternatives in water resources management and development. They include budgetary decisions at a higher level, current ideological concepts such as growth or conservation, the high cost of

11. National Environmental Policy Act, 42 U.S.C. § 4332(2)(B) (1970).
12. Schattscheider *supra* note 3, at 12.
13. Wolman, *Crisis and Catastrophe in Water-Resources Policy*, 68 J. Am. Water Works Assoc. 136 (1976).

inquiry and limited funds available for carrying out analyses of alternatives, physiography, existing legislation, and the relative political power of different interests at different levels of the political scene. All of them are familiar to participants on the water resources scene. The illustrations overlap and contain a host of common lessons. However, they are isolated or grouped together primarily to focus upon limited points.

SOME CONSTRAINTS UPON ALTERNATIVES

A Small Microcosm

Because a neighborhood in Baltimore, Maryland, believed that the channel of Chinquapin Run, with its two square mile drainage area, in a narrow valley park was an eyesore and perhaps dangerous to small children, the City was prepared to line the channel with concrete for a distance of three or four blocks. The estimated cost of paving the entire reach was about $500,000. One improvement association and supportive city councilman from the district had received a commitment from the Mayor during a preceding election campaign to "do something" about Chinquapin Run.[14] A second neighborhood association intervened to complain that a concrete channel through the park would be uglier and an even greater potential hazard to small children than the existing channel. An independent observer, whose political base was his friendship with the Director of Public Works, suggested that more than the one alternative be looked at and enumerated: upstream storage, aesthetic plantings and wooden revetments, gabions, or maintenance of the existing natural channel. Pleading an absence of funds for analysis, the City requested and received a brief evaluation of alternatives from Soil Conservation Service personnel. In the end, concrete was preferred because of low maintenance cost, the impossibility of providng storage on the urban watershed, and the ugliness of the existing natural channel.

A final decision was reached which lived up to the Mayor's commitment to "do something," reduced the price, and partially satisfied, at the time of the decision, each neighborhood group. The Mayor himself decided that one half of the reach of Chinquapin Run be placed in concrete, and the other half left natural. To placate the aesthetes, the Bureau of Sewers volunteered to make the concrete grey, not white, a gesture which while consummated did not satisfy the protestants' aesthetic senses. Two years later the natural scene continued to appear ugly to some, and sores from erosion remained evident. Most of the natural reach was then reconstructed, and lined

14. T. McKeldin, Information derived from personal communication (1965).

with gabions and vegetated. The concrete remains clear and unattractive in the eyes of some, and several children have received minor injuries while playing during higher flows in the concrete section.

This case is a microcosm of them all. First, contesting parties expanded the scope of the argument and the number of participants by raising the question of additional alternatives. Second, the alternatives chosen were constrained by the cost of their review. Third, the solutions were constrained by the physical system, the urban watershed. Fourth, one alternative was precluded by the political commitment of the Mayor. Last, the solution chosen represented a compromise among many of the alternatives and included the later use of the gabions, a solution widely touted and applied within the city administration. Each of these constraints, money for analysis, the physical system, and politics, figure in every illustrative example which one can choose. Their relative importance varied, and in each case the building of an agenda of alternatives served a particular purpose or the purpose of a set of particular interests. As Schattschneider predicted, the outcome of the decision on Chinquapin Run was not one originally envisioned by the participants.[15]

Physical Constraints

Considerable progress has been made in developing alternatives to mitigate flood hazards since the pioneering work of Gilbert White suggested that adjustment to floods might include alternatives other than structural control of flood flows.[16] Recent legislation permitting consideration of the alternative of land use regulation and the gradual growth of the Federal flood insurance program attest to this progress in considering alternatives. However, the floods associated with Tropical Storm Agnes in July, 1972, on the Susquehanna Basin, for example, serve as a recent reminder of the facts of life for established communities in narrow bottomlands. Theoretically towns can be moved from the path of floods; at least one has been. However, in reality cities such as Williamsport, Scranton, or Wilkes Barre, Pennsylvania, cannot be moved from valley bottoms subject to flood. Land use alternatives may be appropriate in regulating expansion of settlement on bottom lands, but in many areas they are not an alternative or substitute for reservoirs and levees, even though in many instances it may never be possible to prevent damage from the highest floods. From the standpoint of those who live in such cities, some alternatives do not exist. Thus the national agenda of alter-

15. E. Schattscheider, *supra* note 3, at 2.

16. G. White, Human Adjustments in Floods, a Geographical Approach to the Flood Problem In the U.S., U. of Chi. Dep't of Geogr. Res., Paper 57 (1942).

natives includes alternatives which do not exist in some locations or regions.

Urban runoff control, as noted earlier, contains similar physical constraints in areas already urganized. Storage sites are not available due either to existing land uses or in some cases due to topography of very low relief which provides limited storage opportunities. The size, outlet design, and distribution of small reservoirs, is controlled by the physiography of the drainage basin as well as by the costs of land in developed or undeveloped areas. Runoff regulation is also made difficult by the fact that intervening areas of overland flow between junctions of tributaries may occupy as much as one third of the total surface area.[17] Direct runoff from such surfaces cannot be controlled by storage on tributaries.

Dam sites provide an excellent illustration of geological controls of specific options. It is not true, of course, that this restriction of options "necessitates" selection of a particular alternative. As the examples below from the Colorado and the Potomac Rivers illustrate, the use of good or even the best dam sites may be foregone. In doing so, however, one also foregoes the flood protection, water supply, recreation, or navigational opportunities which those dam sites alone permit. People who live in narrow valleys subject to flood are aware of this fact, and it is not surprising that they have not always greeted with enthusiasm the expanded agenda of alternatives, including land use regulation and flood insurance. Expansion of the national interest in mitigation of flood hazards, including protecting people from themselves, expanded the area of conflict as well as solutions. To protect their interests, the citizens of the country as a whole through Congress, and the Federal Government, and through state government must place increasingly stringent controls on local government to prevent local citizens from increasing their exposure to flood hazards.[18]

In the simplest case, eliminating a reservoir from among the alternatives, while it saves the land of those who would have been flooded at the reservoir site, virtually assures flooding of some downstream lands. The balance of values in the trade-off between the two is not obvious, although protection of a city downstream at the price of inundation of farm land can be looked upon as a solution bringing the greatest good to the greatest number, an argument which sustained the building of Tuttle Creek Reservoir in the Kansas River valley. In this instance, the spirited defense of the town of Tuttle

17. L. Leopold, M. Wolman, J. Miller, Fluvial Processes in Geomorphology (1964).

18. C. McConnell, *Flood Damage Reduction*, in U.S. Water Nat'l Res. Coun., Summary: National Conference on Water 154-57 (Apr. 1976).

Creek, its cemetery, and the valley farm lands represented an expansion of conflict as the rural area sought to bring its case before a national public.

The significance of physical constraints is exhausively covered in the geographic literature on environmental determinism.[19] As the few examples cited here indicate, physiography or the physical environment does not alone control water resources development. Rather, options are limited, and a price must be paid for such limitations. Not only is the cost of alternatives likely to be higher, but eliminating physical options such as storage is likely to exacerbate conflict for two reasons; the option foregone, not using a reservoir site is easy to recognize, and a traditional bias has assumed that storage options would be used. The weight of such tradition, as the political scientists have noted, is difficult to overcome.

Explicit Political Constraints

The fifty year battle to enact a Central Arizona Project reached fruition in 1968. The deliberations and the Colorado River Basin Project Act[20] provide well known illustrations of the way in which explicit ideological and political views constrain the number of alternatives which will be considered at any moment in time. First, the Secretary of Interior, and the National Water Commission created by a concurrent act in 1968, were precluded from undertaking studies of the importation of water to the Colorado River drainage basin for a period of ten years. Second, the project was predicated on the historical assumption that additional water, not radical changes in patterns of use, was the appropriate solution to the water needs of selected regions in the Southwest. Third, throughout roughly fifty years of debate, it was taken for granted that any solution under Federal sponsorship involving western reclamation principles required the semblance of repayment through irrigation or hydroelectric power revenues.[21] To these assumptions was added explicit recognition of the commitment under the agreement between the United States and Mexico for the United States to provide Mexico with 1.5 maf of Colorado River water annually. Curiously enough the Congress saw fit to place this responsibility upon the nation as a

19. Spate, *A Study in Determinism*, 118 Geogr. J. 407 (1952).

20. Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 887 (codified at 43 U.S.C. § § 616hh, 620-620a-2, 620c-1, 620d-1, 620k, 1501, 1511-14, 1521-28, 1541-44, and 1551-56 (1970)).

21. C. Hayden, P. Fannin, Supplemental Statement, *Senate Hearings on the Central Arizona Project Before Subcomm. on Water and Power Res. of the Senate Comm. on Interior and Insular Affairs*, 90th Cong., 1st Sess., at 121-35 (1967).

whole and not upon the region where it formerly rested, a solution rather at variance with the prohibition on importation.

Each of these political or ideological views and their restraining effect represents what the political scientist might refer to as a "predecisional process."[22] Indeed, from the standpoint of the consideration of alternatives for responding to the needs of the southwestern United States, the entire agenda was circumscribed at the outset by the politics of water in the southwest as manifested in the Congress. The basic assumptions are traditional to the history of the region. Only the gradual emergence of new or rediscovered ideologies at the national level regarding conservation coupled with other regional political power from California and the Northwest resulted in modification of the classical agenda. The fact that debate about the Project did include new issues, and that authorization dealt specifically with importation from the Northwest suggests that in the decade of the sixties accepted orthodoxy, which had for decades limited alternatives, was beginning to be eroded. Nevertheless, the decision of the moment clearly reflected, not a range of alternatives, but a highly constrained set.

Perhaps an even better illustration of control of the agenda of alternatives is provided by the curious recent non-history of potential production of hydropower at dams which have been proposed on the Potomac River. In his report to Congress in 1934, the Secretary of War recommended Federal construction of an extensive system of power-storage reservoirs.[23] He quoted enthusiastically a Report of Northeast Superpower Committee:

> The large demand for power and the opportunity to replace more expensive steam generation in many localities affords an immediate market for the cheaper water power from the larger projects and *renders their development both urgent and necessary*. . . . The great water powers capable of expansion are: . . . (g) Potomac River.[24] (emphasis in original)

The proposed plan rested upon the storage to be provided for power including the opinion that flood peak reduction would also result from satisfying the power production goal.[25] No dams were constructed. Again, in 1944, the Corps of Engineers outlined a program for the Potomac involving the construction of fourteen reservoirs to

22. R. Cobb and C. Elder *supra* note 2, at 10.

23. Sec'y of War, Potomac River and Tributaries including Occoquan Creek, H.R. Doc. No. 101, 73rd Cong., 1st Sess. 495 (1934).

24. *Id.* at 24.

25. *Id.* at 20.

include storage for the production of power. Eighty-five per cent of the annual benefits were attributed to power production.[26]

There are today no major power storage reservoirs on the Potomac. Indeed, only one major dam has been constructed, yet in authorizing a comprehensive study by the Corps of Engineers in 1963 Congress included water supply, flood control, recreation and water quality. Hydropower was not mentioned.[27] In view of the enunciated policy of multiple use, this omission seems strange.

The explanation appears to lie in part in the fierce opposition in the late 1940's to expansion of public power by the Department of Interior on the Potomac and elsewhere by both private power groups and members of Congress.[28] Precise explanations for the continuing elimination of consideration of power production as an alternative are obscure. The Corps of Engineers recognized the historical, scenic, and recreational significance of Great Falls, motor parkways, and the Chesapeake and Ohio Canal and attempted to locate and design the power facilities to minimize intrusion on these resources. However, opposition to the power concept itself and to reservoirs which would drown potential parkland and farmland prevented realization of the 1946 "comprehensive plan" as the Corps referred to it.[29] Interestingly, as noted below, opposition today to construction of reservoirs at these same sites called for in the 1963 "comprehensive plan" is on the same grounds even though the purposes for which the reservoirs are intended are markedly different. As noted in the following section, current conflict involves a different, hidden set of objections. However, the demise of public power from among the alternatives considered on the Potomac, in the absence of recent analysis of the merits or demerits of the alternative, appears closely related to the process of making issues into non-issues by excluding them from the agenda.[30]

New Politics: Dissolution of Constraints

As the preceding cases suggested, water resources planning has experienced not only the inertia to change from a restricted range of alternatives, but an expansion of the agenda of alternatives as well.

26. Sec'y of War, Potomac River and Tributaries, Md., Va., W. Va., and Penn., H.R. Doc. No. 622, 79th Cong., 2d Sess., 65, 98 (1946).

27. U.S. Army Corps of Eng'rs, Potomac River Basin Report (1963).

28. G. Dondero, *Hearings (No. 11) on H.R. 3036, Amending Section 5 of the Flood Control Act of 1944 Transferring Jurisdiction of Hydroelectric Power Projects to Warrant Department and Federal Power Commission Before Senate Comm. on Public Works,* 80th Cong., 1st Sess. (1947).

29. M. Scheidt, Information derived from personal communication (1976).

30. M. Crenson, *supra* note 8 (1971).

Some of the most significant examples of these changes clearly illustrate the importance of issues or new ideas espoused by new participants in the decision making processes, in expanding the area of conflict. Whether this expansion is in fact always a virtue in a democracy, as the earlier quotation from Schattschneider implies, is touched upon later.[31] Several examples do illustrate the way in which new conflicts joined by new parties permit dissolution of some constraints and substitution of new alternatives.

During the 1950's and early 60's low flow dilution was looked upon as a useful device for water quality improvement. In addition Federal funds were available to absorb part of the costs for such an approach to water quality management. Thus the 1963 comprehensive plan for sixteen major dams on the Potomac included sufficient storage for low flow dilution to provide seven day low flow for a recurrence interval of one year in ten sufficient to maintain stream flow to support fish.[32] Roughly two-thirds of the original estimated cost of about $600 million could be attributed to such storage. At the time the Federal share for support of alternative schemes for water quality management was comparatively modest. Within a very few years, however, the country and the Congress reversed themselves on the alternatives for pollution control with Federal support moving to heavy Federal financing of sewage treatment plants, 75 per cent federal share, and downgrading of the concept of low flow dilution.[33] Thus in the fact of nationwide pressure to abandon the concept of "dilution as a cure for pollution," legal constraints inhibiting the consideration of specific alternatives were virtually reversed. Whether for good or for bad, from the standpoint of Potomac river planning, storage requirements could be lowered; thereby reducing justification for other multiple uses as well, at least under the guise of multiple use and its associated cost sharing.

The re-emergence of a strong environmental conservation movement is also reflected in the elimination of specific alternatives for flood control and water supply which resulted from the reception given the same Corps of Engineers study of the Potomac. The Corps proposed that a major dam and reservoir be built in the gorge of the Potomac River above Washington, this time primarily for flood control and water supply for Washington, D.C., with additional benefits for recreation and water quality management in the estuary. Major dam sites on the Potomac are limited, and sites close to Washington

31. E. Schattscheider, *supra* note 3.
32. U.S. Army Corps of Eng'rs *supra* note 27.
33. Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1282 (Supp. 1974).

which could best serve the stated objectives demand use of the steep narrow reach in the Fall Zone. Opposition to such a reservoir was vocal and came from many sources. These included country squires in Virginia and Maryland who were concerned, but did not say so publicly, about crowds from the city recreating on the lake, and others who believed that the natural waterway was preferable to a long lake.

Two ideological factors of recent national emergence were added to the debate, preservation of the environment and preservation of the national heritage. Alternative sources of water supply involving the use of the estuary, upstream reservoirs, and importation of water from the Susquehanna Basin were all invoked to mitigate the necessity for a large reservoir above the City of Washington.[34] Preservation was given a significant boost by the celebrated hike of a party of environmental enthusiasts led by Justice Douglas of the Supreme Court. The hike traversed the path of the old Chesapeake and Ohio Canal to demonstrate the existence of this national treasure and the importance of its preservation. No alternatives exist to the preservation of such an historical monument. Similarly, no physical systems exist which could provide as satisfactory storage for flood control to protect the District of Columbia or for water supply as the large reservoir close to Washington. The idea of a major reservoir was abandoned in favor of preservation of the natural river and the historical C & O Canal. A new national public having adopted the symbol of preservation, eliminated an alternative in favor of what was deemed to be a different and higher value for use of the land and water.

The change from dilution to effluent control as the dominant thrust of water quality management in a few short years is exceeded in alacrity by the switch in policy regarding financing reimbursement of reclamation projects in the West which accompanied approval of the Central Arizona Project. An earlier plan for the Colorado River formulated by the Department of the Interior called for several large dams in the Grand Canyon. One primary function of the dams was not the storage of water per se, but rather the provision of hydroelectric power for pumping on the Project, and to provide revenues which were required for repayment of Federal investments in the project. Senator Allott, referring to the need for repayment of many costs, likened a Colorado River Project without "Hualapai dam . . . to a cart without a horse."[35]

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34. U.S. Dep't of Interior, *supra* note 10.
35. G. Allott, *Senate Hearings, Central Arizona Project, supra* note 21.

National opposition to dams in the Grand Canyon in the name of preservation of the scenic wild gorge was stimulated by the Sierra Club. What had been primarily a regional issue involving the Colorado Basin states became a national issue of wilderness preservation coupled with an interregional issue involving the possible transfer of water from the northwest to the southwest. Expansion of the conflict coupled with commitment of the Administration to support a water plan for Arizona demanded a solution which did not require two new dams in a wild stretch of the Colorado River. An altnerative had to be found which would allow for the generation of electric energy without hydropower. Several years after proposing a plan that included provision of hydropower in accord with reclamation practice, the Secretary of Interior found it possible to present a new plan calling for Federal participation in private construction of a fossil fuel power plant.[36]

Again, the policy change was brought about by inclusion of a new issue on the public agenda. Preservation of natural areas, not necessarily a vital interest of many westerners, had become a part of the national agenda. Its invocation in the Colorado River controversy required creation of a new alternative in water resources planning, an alternative to the historical method of Federal financing of water projects. Thus, expansion of the conflict broadened the range of political options without altering the reliance on more water as a dominant feature of development planning. Momentarily, at least, irrigators in Arizona, preservationists in New York, and energy users in the southwest all appear to have been served. The process of alternative selection was initially controlled by historical precedents and agency predilections. New participants changed both, although principal control of the agenda remained within the region.

CONCLUSIONS

While little of the literature in water resources deals specifically with agenda building, the list of alternatives to be considered in water resource planning is directly analagous to the political scientist's agenda of issues. The search for completeness represents an important approach to inquiry about the options which might be available to society to solve certain problems using all that is known of technology, science, and system. This process of inquiry, however, is not synonymous with nor should it be confused with the process of decision making. A scientist or engineer may and should conceive

36. S. Udall, Statement by the Secretary of the Interior on Central Arizona Project, *Senate Hearings, Central Arizona Project, supra* note 21.

of all kinds of alternatives which could conceivably be used to solve a set of problems or to reach a set of objectives as he believes they have been defined. Such analyses can indeed illuminate options, define areas of conflict, and suggest modes of accommodation or trade-offs. Analytical approaches unfettered by politics may be essential to consideration of long-run issues of policy. At the same time, unfettered inquiry, by definition, may be irrelevant to a particular decision or downright pernicious in the eyes of some participants in a controversy. As Greenberger, Crenson and Crissey have suggested, explicitness in politics may be devisive rather than conducive to accommodation and decision.[37] In addition, if the elucidation of alternatives is viewed as enlarging the area of conflict in a democratic society, it is more than likely that additional alternatives will offer new avenues of entree into the decision making process and frustrate the objectives of those with older or prior interests.

The common examples cited here from experiences in water resources planning clearly establish the points raised by political scientists concerned with the relationship of agenda building to democratic action. There is the customary inertia of agencies and their supporters happy with the mission as defined over the years and reluctant to change their ways; there are the outs, environmentalists previously called "bird and bunny boys," now become the ins by virtue of enlarging the conflict not only to include new goals but a new constituency interested in such goals; there are the seemingly inviolate constraints altered by political action resulting in new agenda items including the environment; there is the expansion from local to state to national visibility of arguments over channels and swamps; and there is the legitimacy of these new agenda items representing the rise to power of new interests.

Emergence of concepts of multiple use, public participation, and illumination of alternatives as symbols of desirable political goods must represent a movement toward what would be defined as a more democratic society. Movement, however, does not define stability or equilibrium and clearly there are costs involved. For example, the customary response to the observation that control at the national level, whether of floodplain usage or of water quality, must of necessity lead to subjugation of local and state autonomy is that from the standpoint of the nation as a whole there is (or must be) a net gain. Politically speaking, this may be true; at least the choice appears to have been a democratic one. Clearly, for some, however, enlargement of the arena of conflict has changed the outcome, and not only big

37. M. Greenberger, M. Crenson, B. Crissey, Models in the Policy Process (1976).

irrigators or power companies but cities, towns, or villages must pay a higher price in dollars and in control for their autonomy or for the support they receive than they did for a time, at least, when they received a freer bounty from the national treasury.

More alternatives and more participants can stymie decision making. Legitimate and illegitimate local interests, or for that matter legitimate or illegitimate national interests, can frustrate the public's business in the name of the public unless there is some common agreement that broader interests, even a common interest, may exist. In moving toward more open processes, we are momentarily heavy on the capacity to withhold approval at many levels and weak on mechanisms for decisions. Conceivably channelization, dredging, reservoir construction, and levee building, in the words of Pooh-Bah, "never would be missed."[38] For some purposes and in some places, however, there are no alternatives.

No simple rules exist for determining which alternatives are admissible or inadmissible in the evaluation of water resources plans and programs. Two features are evident, however; first, selection of alternatives for review is rarely, if ever, without political implication; second, it is not evident that the changes of the recent past in the process of selecting alternatives can automatically be extrapolated as guidelines for the future in a changing world. This would only be so if the definition of democracy in a modern pluralistic society was simple and the requisites for its functioning agreed upon.

Because the process of selecting alternatives for consideration is at the heart of the democratic process, the rules of the alternatives game will be determined by the kind of democracy we choose to fashion. Statements about what the agenda of alternatives should be are not neutral if one is interested in having the alternatives seriously examined by society. This in itself should not discourage analysts from pursuing illumination of the broadest range of alternatives in water resources management. It should, however, inure them to the shock of having their inquiries ignored.

38. W. Gilbert, A. Sullivan, The Mikado (1885).