

WATER MANAGEMENT IN THE NEXT CENTURY

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REFERENCE: *Proceedings of the 1991 Georgia Water Resources Conference*, held March 19 and 20, 1991 at The University of Georgia. Kathryn J. Hatcher, Editor, Institute of Natural Resources, The University of Georgia, Athens, Georgia.

INTRODUCTION

Water management policies are products of knowledge, modified by political forces. They are born of human perception of need, or confrontation with crisis. Federal and state statutes, case laws, regulations, and administrative actions define U.S. water policies. New courses of action reflect changing times and perspectives, but old ones cling to traditions and many are associated with institutions having parochial rather than global outlooks. Furthermore, many outdated policies linger on interminably, often conflicting with contemporary beliefs. The issues identified herein concern Georgia and every other state.

WATER MANAGEMENT ISSUES

Although the U.S. has been a leader in identifying, understanding, and dealing with water management issues, new and more sophisticated thrusts are in order if we are to meet the challenges that lie ahead. Yesterday's policies are inadequate for dealing with today's problems. Action must be taken now to see that water resources that have escaped human manipulation are protected, and that those we have despoiled are restored to a more amenable state. If we do not strike out in that direction, it is not likely that our descendants will enjoy an enviable quality of life.

Modern water policies must embrace resource-related and institutional issues. The physical properties and distribution of water are keystones, but legal, political, social, economic, and environmental building blocks must be crafted into these policies as well.

The water policies of the past were mainly development oriented (Holmes, 1972). Today, water policy is focused on how to best manage this vital resource. Unfortunately, many of the problems identified over the years by a succession of panels, committees, and commissions are still unsolved (National Water Commission, 1973). Major issues include: providing a national forum; providing regional forums; coordination of water resources plans and programs; educating the

public and decision making bodies; modernizing institutions and agency roles; paying for water management; blending technology with public policy; defining beneficial use; protecting and enhancing the environment; and looking ahead (Peterson, 1988; Viessman and Welty, 1985).

Public views on water policy have changed significantly since the 1960's. Non-structural management is stressed, new definitions of the beneficial use of water are emerging, and joint considerations of land and water interactions are becoming more common. And with these changes has come a renewed concern about re-examining past policies and institutions so that needed reforms can be championed when they are needed. There is, however, much that remains to be done.

There is a need for effective regional planning and management. Many problems cannot be solved within the bounds of a single governmental boundary. The true spatial dimensions of problems must be recognized and they must be dealt with accordingly.

Formulating water policies which maximize efficiency and effectively address public views requires providing the right forums for the circumstances. In some cases existing forums are adequate, city councils, state legislatures, and public interest group committees are examples of these. There are, however, numerous occasions and/or issues that require non-traditional approaches. In general, two classes of needs are apparent, those related to resolving or avoiding conflicts (consent building), and those related to solving problems that transcend normal political and/or agency boundaries (system-encompassing). The first category of forum is needed to address points of contention, whereas the second is needed to analyze issues in their proper context. Historically, we have not done very well in organizing either type of forum, although there is increasing evidence of the design and application of such forums for planning and management purposes. To deal effectively with conflicting interests, the principal stakeholders must be brought together in an atmosphere that encourages cooperation and an exchange of views. Building consent among the affected parties and identifying common grounds should be the objective. The

first step is that of identifying the affected parties, those whose consent is necessary to formulate an acceptable action, the second step is getting them to the table, the third step is keeping them there until an agreement is reached. Where the stakes are high, it is important to do everything you can to make certain that each of the parties has a lot to lose and that they know it. Furthermore, making leaving more painful than staying is a good rule to follow. The key is to establish negotiation rather than litigation as the vehicle for resolving conflicts and designing acceptable alternative courses of action. Analyses of how conflicts have been dealt with in the past should be more adequately documented so that they can be used effectively as instructional vehicles. And curricula related to environmental problem solving should more fully address subjects such as consent building, decision making processes, working with the public and governmental bodies, policy analysis, and vehicles for fostering interactive approaches to problem solving.

Water resources protection, development, and management processes must be designed to address potential conflicts, up-front, and to incorporate mechanisms for dealing with them that have a high probability of being accepted by all of those having a stake in the issue of concern. Furthermore, scientific and engineering expertise must be introduced more effectively into the arenas where conflicts are dealt with, otherwise, the outcomes of these forums may be technologically deficient. Strategies are needed to facilitate identifying conflict potentials in advance, so that prevention of conflict rather than its resolution might be the order. Conflict management techniques should be incorporated directly in water resources planning and management processes, and the ability of scientists and engineers to deal more effectively with the various publics must be enhanced.

Forums for Coordination of Water Management

System-encompassing forums are needed to address situations where political subdivisions are too small to deal comprehensively with the dimensions of the resource management problems they face, and/or the facilities and/or missions of several agencies are involved. For example, locally perceived water problems are often regional in scale and they should be analyzed in that context. In that way, problem-solving options that might not otherwise be recognized are more likely to be identified, with efficiencies resulting that could not be realized through constrained solutions. Successes with such an approach for the Washington, D.C. metropolitan area, demonstrate that the gains can be substantial and that special ad hoc regional reforms can result. In the North Platte River Basin, water shortages might be cut by 50 percent, or more, if the system were operated to meet demands rather than to conform to prevailing water rights

policies. Formation of regional organizations such as Florida's Water Management Districts, the Metropolitan Water District of Southern California, and the Nebraska Natural Resource Districts is another approach that can provide an expansive forum, given the right local conditions for acceptance.

Unfortunately, few individuals have any appreciation for the benefits that could be achieved by integrating the management of water resources systems (Sheer, 1989). In general, there is no single agency or individual who controls all of the components of the water management system of most river basins. To overcome this problem will require joint and coordinated decision making and comprehensive system-wide analyses. Institutions with special responsibility for investigating the integrated management of multi-party water management systems must be designed and funded. Objective, system-encompassing forums must become more common and approaches to forming them identified. The payoff could be staggering.

Better coordination among planning agencies and greater consistency among plans is also a requisite. Piecemeal approaches to many of today's problems are intolerable. Planning and management contexts must be consistent with the issues they must address.

The 1982 demise of the Water Resources Council left a vacuum at the federal level that has never been filled. The state-federal forum and the regional forum the Council provided are essential to a holistic view of water management and to a cooperative effort among planning and management partners (U.S. Congress, 1975). Some type of council or water board is needed to aid in the development of federal, state, and local government water policy, to provide a forum for airing and resolving water-related problems, to coordinate federal water resources planning functions, to assess the status of the nation's waters, to provide a broad overview, to forecast future water supply-demand scenarios, to facilitate water research, and to provide guidance and support to state water planning and management programs.

During the last decade, the Administration and the Congress have taken the view that the states should assume a greater portion of the national water management budget. It has not been as clear what the federal role in that shift should be (Lamm, 1988; Viessman and Biery-Hamilton, 1986). Undoubtedly, the federal government has a role to play. Some aspects of managing the nation's waters will require a sustained federal effort. The states should be provided some federal aid and guidance as they take on an expanded role. The federal government should work with them to facilitate the development of workable financing options and first-class professional cadres for carrying out effective water resources planning/management programs.

CONCLUSIONS

Comprehensive water resources plans should become the foundation for water resources decision making. Planning should be proactive, guide water management actions, and drive regulatory programs. Otherwise, regulatory measures and court rulings will serve to chart the future. Such practices are inefficient at best, and destructive at worst.

Finally, water policies of the future must take on a global dimension, and reflect a more holistic view. More emphasis must be placed on regional planning and management and regional institutions to accommodate this must be devised.

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