

STATE WATER PLANNING: A FORUM FOR PROACTIVELY RESOLVING WATER POLICY DISPUTES¹

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ABSTRACT: In the arid West, the development and implementation of water policy often results in disputes among water users, resource managers, and policy makers. Although significant attempts have been made to improve public involvement and dispute resolution in water resources planning, the traditional planning process has not historically played this role for a variety of reasons. Water resources planning can become a forum for proactively resolving water policy disputes by employing the principles of environmental dispute resolution. The purpose of this article is to explore the role of collaborative, consensus-building planning processes in resolving water policy disputes. The Montana State Water Plan is evaluated as an example of such a process, and a model state water planning process is outlined.

(KEY TERMS: water policy; water resources planning; dispute resolution; collaborative problem-solving; consensus-building.)

INTRODUCTION

The history of western water policy is characterized by many things, but perhaps nothing more than disputes among water users, resource managers, and policymakers (Reisner, 1986; Worster, 1985). The future of water management in the West is also likely to be characterized by conflict as the demand for already scarce water increases among urban, agricultural, environmental, and other sectors (El-Ashry and Gibbons, 1988).

Over the years, there has been a significant attempt in both theory and practice to improve public participation and dispute resolution in water resources planning (Hrezo and Howe, 1985; Schierow and Chesters, 1983; Lord, 1980; Daneke, 1977; Warner, 1971; Wengert, 1971; Bishop, 1970). However, traditional planning processes have not been effective forums for resolving water policy disputes for several reasons. First, water planning has historically focused on technical solutions and has not adequately considered the political and institutional

feasibility of implementing the solutions. Second, water planning has been largely development oriented, with little focus on controversial and complex water management issues. Finally, water planning is typically a one-shot deal, often ending up as "shelf-art." It is rarely continuous, flexible, and adaptive to changing social, economic, and environmental needs and priorities.

Recently, there has been a loud call for the development of new mechanisms for water planning and dispute resolution. Getches (1988) recommends wide public participation and federal agency coordination in the development of comprehensive water plans and policies. Viessman (1988:583) suggests that future decision-making processes should foster interactive problem solving and conflict management among the public, resource management agencies, and decision-makers. Finally, Amy (1987) and Howe (1988:8) believe that mediation, facilitation, collaborative problem solving, and consensus building are increasingly needed to resolve disputes and develop water resource policies.

One response to this call for more innovative approaches to resolve water policy disputes is to employ the principles and techniques of environmental dispute resolution (MacDonnell and Painter, 1988; Bingham, 1986; Bacow and Wheeler, 1984). The purpose of this article is to explore the application of these principles and techniques during the planning process to proactively resolve water policy disputes.

The article begins by presenting some of the central concepts in the field of environmental dispute resolution. It then examines a case study where the principles and techniques of environmental dispute resolution have been integrated, to some degree, into a water planning process. The article concludes by outlining a generic model for resolving disputes

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through a collaborative, consensus-building water planning process.

ENVIRONMENTAL DISPUTE RESOLUTION

As an alternative to traditional processes for resolving disputes, environmental dispute resolution (EDR) refers collectively to a variety of approaches that allow affected parties to meet face-to-face to reach a mutually acceptable resolution of the issues in a dispute or a potentially controversial situation (Bingham, 1986). Although there are differences among the approaches, all are voluntary processes that involve some form of negotiation, joint problem-solving, and consensus-building (Cormick, 1980). By employing these principles and techniques, water resources planning can become a decision-making process to proactively resolve water resource issues before they become too controversial and affected parties too polarized.

The process of making decisions through an EDR process is guided by several well-established principles (Susskind and Weinstein, 1980:336). All the parties affected by or interested in a given issue are invited to participate in the process. Whenever necessary, an effort is made to assist parties in acquiring the expertise, information, and skills necessary for their full and equal participation in the process. Prior to discussing any substantive issues, the participants agree to the ground rules that guide and govern the process. The parties then educate each other about issues and interests through nonadversarial negotiations. The best available scientific and technical expertise is used to create a jointly acceptable data base and framework for analyzing the issues and their potential impacts (Hollings, 1978). The parties generate several options to resolve the issues, and collaboratively negotiate over the acceptability of the options. An external third party or mediator is often used to assist the parties in reaching a negotiated settlement (McCarthy and Shorett, 1984). Decisions are made or are largely influenced by the parties as they work toward mutually acceptable solutions (Bacow and Wheeler, 1984:21-41). If the parties are successful in reaching a consensus solution, it is written down and includes provisions for implementation, monitoring, enforcement, and evaluation.

According to the literature, EDR offers several advantages over traditional decision-making and dispute resolution processes (Cormick, 1980; Susskind and Weinstein, 1980; Bingham, 1986; Levinson, 1988). First, EDR provides for much more meaningful participation by affected and interested parties in the decision-making process. These parties no longer

simply provide input into the process, but become decision makers with opportunities to directly influence the process and its outcomes. This type of participation results in joint ownership of solutions and thereby promotes implementation. Second, because the affected parties guide the EDR process, it tends to focus more satisfactorily on the issues and concerns raised by the parties (Painter, 1988:169). It often allows for a broader and more sophisticated range of issues to be addressed than in traditional decision-making processes. Third, EDR processes promote communication, cooperation, and the sharing of values and interests (Burgess, 1981). Fourth, they encourage joint fact finding and the resolution of scientific and technical uncertainties (Ozawa and Susskind, 1985:23-39). Fifth, EDR processes are flexible and may be designed to fit the specific circumstances of a particular case (Bingham, 1986:53). Finally, EDR processes may save time and money by avoiding administrative appeals and litigation.

While EDR offers many advantages over traditional decision making and dispute resolution processes, several concerns have nevertheless been raised by a number of analysts (Golton, 1980:63-66; Lake, 1980:64-65; Shorett, 1980:59; Amy, 1983; Blackburn, 1988:564-565; Rabe, 1988:585-601). The six most common concerns raised by the critics are: (1) problems of representation; (2) difficulties of setting an appropriate agenda; (3) obstacles to joint fact-finding; (4) cooperation resulting from unequal political power or bargaining ability; (5) difficulties of binding parties to their commitments; and (6) obstacles to monitoring and enforcing negotiated agreements (Susskind, 1986). While these issues may limit the success of EDR processes in certain cases, they can be overcome with the application of innovative techniques and, where necessary, the assistance of a skillful and astute mediator (Susskind and Ozawa, 1985).

The application of EDR principles and techniques have been used to settle, or attempt to settle, at least 15 cases involving water resources (Bingham, 1986:36). However, EDR principles have been rarely applied in water resources planning to proactively resolve controversial water resource issues before they erupt into full-blown disputes. The following case study illustrates one effort to develop a comprehensive, integrative state water plan through a collaborative, consensus-building planning process.

THE MONTANA STATE WATER PLAN: A CASE STUDY

Introduction

In 1967, the Montana legislature passed the Water Resources Act, which outlines several water management goals for the state (Section 85-1-101, MCA). The legislature also called for the development of a state water plan as the mechanism to accomplish the goals (Section 85-1-101(10), MCA).

Prior to 1987, efforts to develop the state water plan focused on basin plans (Martin, 1987). While these plans resulted in volumes of technical information, they never considered the institutional and political feasibility of implementing their recommendations. Consequently, the plans provided little guidance to resource managers in resolving water management problems and ended up as "shelf art."

In 1987, the Montana Department of Natural Resources and Conservation (DNRC), responsible for developing and implementing the state water plan, embarked on a new approach to developing the state water plan. After reviewing the water planning processes of other western states, the DNRC decided to adopt an approach used by the Kansas Water Office (Section 82A-903, KSA). This approach allows individuals and groups affected by water management decisions to participate directly in the development of policies, programs, and management decisions. It is designed to develop water management solutions through collaborative problem solving and consensus building.

A Collaborative, Consensus-Building Approach

As currently envisioned, the Montana state water plan will provide a comprehensive, coordinated, and integrative framework for managing the state's water resources. It is an issue-oriented plan designed to address the full range of water management issues facing the state. The planning process recognizes that a large number of federal, Indian, state, local, and even regional entities have a role in the management of Montana's water, and that several parties are affected by water management decisions, including irrigators, municipalities, energy and industrial developers, and fish, wildlife, and outdoor enthusiasts. Accordingly, it provides an opportunity for all these parties to be involved in formulating and implementing the plan, thereby promoting coordination and cooperation in resolving water management issues. Finally, the planning process is continuous

and adaptable, allowing for changes in social, economic, and environmental objectives and needs.

Although the DNRC is responsible for developing the state water plan, it has realized that the most valuable role it can play is not to determine what decision or outcome is reached, but how decisions are made. The DNRC has decided to facilitate the development of the state water plan by focusing on such concerns as who is involved in the process; how issues are identified, framed, and their consideration bounded; what information is brought to bear; how alternatives are developed and analyzed; how trade-offs are made; and what the procedures are for implementing, monitoring, enforcing, and evaluating the final decisions. Based on the principles of EDR, the state water planning process provides a forum for the broad set of interests affected by water management decisions to voluntarily sit down together, exchange information, and develop solutions through negotiation, collaboration, and consensus building.

The Montana state water plan focuses on two basic types of issues. First, the planning process is designed to document, evaluate, and revise the legal and institutional framework for resolving statewide water management issues, such as ground-water management and nonpoint source pollution. Second, the planning process will focus on basin-specific water management issues. This effort may focus on a single issue at a time, such as water pollution, or consider multiple issues at the same time. Using the legal and institutional tools developed by addressing statewide water management issues, the long-term objectives of the basin specific plans are to document available water supplies and existing uses and rights; to project future water resource needs and priorities; and to integrate water, land, environmental, social, and economic goals, identify conflicts, and assess tradeoffs in order to optimize water use within the basin.

Implementation During 1988: An Overview

During 1988, the first year of implementing this new planning approach, the governor appointed a State Water Plan Advisory Council (SWPAC) to oversee the development of the plan (Office of the Governor, 1986). The SWPAC consisted of ten members that represent a broad range of interests in water resources, including the directors of the state departments of Natural Resources and Conservation; Fish, Wildlife and Parks; and Health and Environmental Sciences; a representative from the Governor's Office; four legislators (representing agricultural, Indian, and environmental interests); and two representatives of the public (a recognized water

law expert and the manager of a large irrigation district).

With minimal public involvement, the SWPAC selected four statewide issues to address during the first planning cycle, including water data management, federal hydropower licensing and state water rights, instream flow protection, and agricultural water use efficiency. The DNRC then created Technical Advisory Committees (TACs) to address each issue. The TACs consisted of the broad range of interests affected by the issues in question. The DNRC prepared a background paper on each issue that outlined existing programs and policies, identified problems, and outlined alternative solutions.

Each TAC met to discuss the background papers during one all-day meeting. After considerable posturing and questioning their role in the planning process, the TACs focused on the contents of the background papers. In general, the TACs objected to the DNRC's attempt to identify the problems and options. Nevertheless, the TACs focused primarily on the problems and options outlined in the background papers, although several new ideas emerged through the negotiation process. In some cases, the participants on the TACs agreed to the problem, the range of options, and a recommendation. On several issues, however, the members could not reach agreement on anything.

The results of the TAC meetings were summarized in the form of "Preliminary Plan Sections," which included an introduction and background section, a policy statement, a definition of specific problems and alternative solutions, preliminary recommendations, and requirements for implementing the recommendations. The plan sections and background papers were then mailed to the SWPAC.

The SWPAC reviewed the documents and met to discuss their contents. After questioning their role in the planning process, the SWPAC debated the proposed options and recommendations. It eventually approved preliminary recommendations for each issue largely by majority voting rather than consensus decision making. The DNRC then hosted nine public meetings to receive feedback on the proposals. About 2500 people attended the nine meetings. Most of the comments focused on the instream flow protection and agricultural water use efficiency plan sections. While some people supported the recommendations in these two plan sections, the comments were overwhelmingly opposed to the recommendations. The greatest concern expressed was the fear that the state water plan was designed to take away water rights. In addition, many people commented that representation on the SWPAC and TACs was not balanced, and that the general public was not involved early enough in the process.

The DNRC summarized and evaluated the public comments and then provided recommendations to the SWPAC on how to revise the four plan sections. The DNRC's recommendations responded largely to the concerns of the agricultural community, and hence many of the more innovative preliminary recommendations in the instream flow and agricultural water use plan sections were scaled back.

The SWPAC adopted nearly all of the DNRC's recommendations for revising the plan sections, this time through consensus decision making. Three more public hearings were then held by the SWPAC on the proposed final plan sections. Approximately 300 people attended the three public hearings and the comments were generally the same as those at the first set of public meetings.

After the public hearings, the SWPAC discussed the public comments and revised some of the recommendations in the instream flow and agricultural water use plan sections. During this process, the SWPAC resorted to majority voting rather than consensus decision making. Final plan sections for each issue were then adopted by the SWPAC. Before the DNRC submitted the SWPAC's somewhat controversial final recommendations to the BNRC for their approval, the new Governor stepped in and asked to review the recommendations. Working with the DNRC, the Governor suggested several changes in the SWPAC's recommendations. Those recommendations were then presented to the BNRC and it approved the first four sections of Montana's state water plan. The legislature and other appropriate entities are in the process of implementing the recommendations in the four plan sections.

Analysis and Discussion

In this section, the implementation of Montana's state water plan during 1988 is analyzed according to the basic stages of a collaborative problem solving (CPS) process as outlined in the literature (Susskind and Weinstein, 1980; Bingham, 1986). After describing each stage and its goals, the experience in Montana is analyzed. The discussion on each stage is concluded by outlining several techniques that can be used to help achieve the designated objectives.

Initiation. Successfully initiating a CPS process is critical to the success of the entire process. While it is important to involve parties with formal decision making authority at this stage, it is also critical to include the major interests affected by water resources. The goal of this stage is simply to determine if a CPS process is desirable, recognizing that it

is not a panacea for resolving all water policy disputes.

In Montana, the state water planning process was initiated by the DNRC, with only minimal involvement of the legislative Water Policy Committee and virtually no involvement of the diversity of interests potentially affected by the process and its outcomes. The DNRC largely failed to define the need for a state water plan, along with the consequences of not having one. It also failed to explain why a collaborative approach was desired. Consequently, the affected parties and the general public did not understand why the DNRC was trying to develop a state water plan, and thus questioned the credibility of the DNRC and legitimacy of the process.

As mentioned above, the success of a CPS process depends on the early involvement of affected parties. It is also imperative to define and communicate the goals and objectives of the process and to establish and maintain the legitimacy and credibility of the initiators. A variety of techniques are available for accomplishing these purposes, including: (1) convening a broad-based committee to explore the desirability and feasibility of a CPS process; (2) drafting a "white paper" on the pros and cons of a CPS process; (3) reporting on successful CPS processes elsewhere; and (4) seeking a group of well-respected conveners and/or a facilitator (Doyle and Straus, 1976; The Conflict Clinic, undated). All of these techniques are designed to capture the attention of the affected parties and to begin exploring the idea of a collaborative approach to resolve the issues in question.

Process Design. Once a CPS process has been initiated, the initiating parties should attempt to involve representatives from all affected interests. This broad-based group should then begin to fashion a forum which all believe is appropriate and acceptable for resolving water policy disputes. The guidelines for the forum should include the size and representation of the group, its relationship to formal decision-making processes, and ground rules for interaction and communication. At the end of this stage, there should be a representative group ready to begin the CPS process.

In Montana, the DNRC attempted to design the process in-house, without broad-based participation. Once again, this raised suspicion in the mind of affected parties and the general public. Moreover, the process was not clearly defined. Although the DNRC had a general idea on how the process should unfold, there was little understanding on several major issues related to the planning process.

First, the roles and responsibilities of the participants, including the public were not clearly defined. Second, given the large number of formal actors in the

process (i.e., the legislative Water Policy Committee, the Board of Natural Resources and Conservation, the DNRC, the SWPAC, and the TACs), there was confusion over who should be making what decisions and at what point in the process the decisions should be made. Ideally, the number of formal decision makers and decision points should be limited, thereby reducing the possibilities for modifying consensus decisions made earlier in the process. Third, there was a considerable amount of criticism over the representation on the SWPAC and the TACs. The agricultural community felt that the committees and working groups did not adequately represent their interests, even though they had representatives on all the committees and groups. Representation on all committees and working groups must be perceived as being balanced for a collaborative, consensus-building process to be successful.

The legitimacy and credibility of a CPS process depends on (1) involving all the affected parties in the design of the process; and (2) clarifying the ground rules of the process. If the participants are not involved in designing the process and cannot agree to the rules for resolving water policy disputes, it is unlikely that they will agree to solutions on substantive issues. Once again, several techniques are available for accomplishing this purpose, including: (1) recording only the points of agreement between the parties; (2) employing "shuttle diplomacy" or an individual/group that moves from interest to interest in an effort to design the process; (3) studying other CPS processes; and (4) utilizing well-respected conveners and/or facilitators to help educate the diverse interests and design the process (Doyle and Straus, 1976; The Conflict Clinic, undated).

Mutual Education. The first step in a CPS process is to allow the affected parties to educate one another. This is a critical stage in the process since people come from different backgrounds, roles, and information bases. However, it is also one of the most overlooked steps because the participants, typically having worked on the issue for years, assume they know everything there is to know. During this stage of the process, the goal is to help a broad-based group develop a joint or shared understanding of the situation. This is accomplished by focusing on the problem(s), rather than potential solutions.

This stage was largely skipped during the implementation of Montana's water planning process in 1988. The only opportunity for mutual education was during the SWPAC, TAC, and public meetings, none of which were designed for this purpose. As a result, affected parties aired their opinions through a variety of indirect channels, such as newspapers and special interest group meetings. These indirect channels were

generally ineffective for mutually educating the participants. They also detracted from the process of identifying problems, alternative solutions, and reaching decisions. During the 1989/90 planning cycle, Montana's state water plan has been revised and provides ample opportunities for mutual education.

Once again, several techniques are available for allowing the parties to educate one another, including: (1) storytelling, (2) field trips, (3) briefings and interviews, and (4) collecting data and soliciting reports (Doyle and Straus, 1976; The Conflict Clinic, undated).

Problem Definition and Analysis. Once the participants have sufficiently educated each other, the group must jointly identify the problem(s) they wish to address. Specific problem statements, which may be written as questions, help determine the range of potential solutions. They should state the problem in clear, specific language; incorporate the concerns of the entire group; and present a problem that is manageable within the constraints of the group and the world.

In Montana, problems were largely defined during 1988 by the DNRC and affected parties were then asked to react to the problem statements. Although the participants generally objected to this format, they were forced, due to the time schedule, to focus primarily on the problems identified by the DNRC. However, other problems were identified and addressed during the process. During the 1989/90 planning cycle, problems are being identified by the general public, the broad-based working groups, and the SWPAC.

Once again, several techniques are available for identifying problems, including: (1) making an "is/is not" list that outlines which ideas are part of the problem and what are not; (2) diagramming different aspects of the problem; (3) analyzing the forces affecting the potential solutions to the problem(s); (4) breaking the problem into manageable chunks; (5) asking experts; and (6) employing clarification techniques (Doyle and Straus, 1976; The Conflict Clinic, undated).

Option Generation. After defining the problem(s), the group should jointly generate as many options as possible for solving the problem(s). If the group cannot generate options that genuinely solve the problem and satisfy the interests of all the participants, the process will not be successful. The purpose of this stage in the process is to creatively generate a broad list of potential solutions to the problem(s). The success of this stage depends on the participants holding back their judgments on the options.

In Montana, the majority of options during the 1988 process were initially generated by the DNRC. Although the TACs and SWPAC later provided additional options, they were initially resistant to many of the options proposed by the DNRC, simply because they did not trust the DNRC. In many cases, the participants and the public assumed that the options presented by the DNRC were also the recommendations of the DNRC. The result was that several reasonable and fair solutions to the identified problems were thrown out of the process before they received adequate evaluation. Nevertheless, many innovative ideas emerged from the process in terms of solving water management problems, particularly instream flow protection and agricultural water use efficiency. Once again, Montana's state water planning process has been revised during the 1989/90 planning cycle, and options are now being generated by the broad-based working groups and the SWPAC.

Several techniques are available for generating options, including: (1) brainstorming, (2) reviewing what others have done, and (3) using "checkerboards" and other techniques (Doyle and Straus, 1976; The Conflict Clinic, undated).

Option Evaluation. Once the group has identified all the potential solutions to the problem(s), the next step in the process is to jointly evaluate the options. While the group should focus on the substance of each option, it should also be concerned about the fairness and objectivity of the evaluation process.

In Montana, the options were initially evaluated by the TACs and later by the SWPAC. In general, the evaluation proceeded by a "seat-of-the-pants" process, rather than any formal, agreed upon method. The pros and cons of each option were discussed, along with the feasibility of their implementation. Although no formal method was employed, no one expressed a problem with the evaluation process.

During the 1988 planning cycle, the primary limitation in evaluating options was the lack of adequate time. Due to the DNRC's self-imposed deadline for completing the initial planning process within one year, several participants complained about inadequate time to evaluate alternative solutions and resolve conflicts. This limitation contributed to the polarization among the participants, to the DNRC's lack of credibility, and to the public's questioning the legitimacy of the process.

Prior to evaluating options, it is often useful to discuss with the group the various techniques available for evaluating options. These techniques include: (1) categorizing and prioritizing the options, (2) ranking the options from most desired to least desired, (3) listing the advantages and disadvantages of each option, (4) explaining what is liked/disliked about

each option, (5) creating a list of criteria for evaluating the options, (6) examining what others have done, and (7) asking an expert (Doyle and Straus, 1976; The Conflict Clinic, undated). Several of these techniques can be used concurrently.

Decision Making. Based on the joint evaluation of the options, the group now seeks to find a consensus in making a decision. In many cases, the participants may be able to choose more than one option or combine several options. Voting should be an absolute last resort and used if and only if other techniques fail and everyone is willing to take a vote. If a group fails to reach a decision, it is often better to go on to the next issue, if appropriate, rather than force decisions in the group.

In Montana, the participants in the process learned that it is very difficult, although not impossible, to achieve consensus. Given that consensus decision making was a new process to both the participants and the DNRC, it was approached with some caution and resistance. In addition, the lack of adequate time to negotiate over the issues limited the ability to achieve consensus and to learn more about consensus decision making. The lack of adequate staff and funding resources also limited the ability to achieve consensus.

The integrity of the decision-making process was jeopardized near the end of 1988 when the SWPAC incorporated several controversial recommendations, based on a minority of comments at the public hearings, that had been deleted earlier from the plan sections. This was one of the main reasons that the Governor stepped in to review the recommendations of the plan.

On a more positive note, the new planning process promoted communication, cooperation, and consensus on the resolution of several water management problems. The state water plan provided more opportunities for public involvement and affected parties to influence water management decisions than perhaps any natural resource planning process in the history of the state.

Several techniques are available for pursuing consensus decisions, including: (1) identifying and documenting solutions that satisfy everyone's interests; (2) selecting and combining options; (3) taking a "straw vote," one that is tentative and nonbinding; and (4) voting out options that are completely unacceptable (Doyle and Straus, 1976; The Conflict Clinic, undated).

Links to the Formal Decision Process. Once a CPS group has reached agreement, it may be necessary to link the group's work, which is often conducted in an informal setting, to formal decision-making

processes. Ideally, members of formal decision-making processes should participate in the CPS process so that the outcome will not surprise them.

In Montana, several legislators and others with responsibility to implement the recommendations of the state water plan participated in the process. As a result, the recommendations did not surprise most of these parties. However, other influential legislators, along with the Board of Natural Resources and Conservation, were not adequately involved and informed throughout the process, and consequently resisted approving the plan and passing legislation implementing some of its recommendations. During the 1989/90 planning cycle, these entities are more directly involved in the process.

In addition to not adequately involving formal decision makers, the DNRC also failed to adequately involve the public throughout the process in 1988. Consequently, the public also opposed the process and the recommendations. Perhaps the most important lesson here is the need to involve the public early on in the identification and selection of issues, and in the preliminary analysis of the issues. Once again, this lesson has been incorporated into the 1989/90 planning process by allowing the public to help identify critical water resource issues that should be addressed by the state water plan.

In addition to involving the public early on in the planning process, one should not assume the public knows more than they do. On several occasions during Montana's experience in 1988, the public misunderstood the principles and practices of water law and management, particularly in terms of water rights transfers. Although Montana's state water planning process increased the level of interest and understanding in water law and management, it is critical to provide adequate information and education for meaningful public involvement.

Finally, it is important to learn how to evaluate and incorporate public comments. In responding to public comments on the preliminary recommendations, the DNRC listened to those individuals and groups that shouted the loudest, without considering the reasonableness and fairness of the recommendations that were being criticized. In addition, the DNRC did not adequately consider minority opinions, such as those in support of instream flow protection, or the values and interests of the "silent majority," i.e., those that do not get involved in public decision making. A more balanced and objective analysis of public input should take these factors into consideration.

Implementation. The final step of a CPS process is to implement the agreements. If the decisions are not implemented, the credibility of the process will

suffer. Moreover, the ultimate test of the process is whether it solves a given problem "on-the-ground." An implementation plan should be developed during the CPS process.

In Montana, an implementation plan was prepared for each issue addressed. These plans outline what needs to be done to implement each recommendation; a deadline; and who is responsible for the action. Montana's state water planning process is also designed to monitor the implementation of the various recommendations, and provides opportunities for evaluating, revising, and updating the recommendations on a continuous basis. The recommendations outlined in the first four plan sections are in the process of being implemented.

CONCLUSION: TOWARD A MODEL STATE WATER PLANNING PROCESS

The foregoing analysis provides a model for developing a forum that proactively resolves water policy disputes. In addition to the process-related lessons learned from Montana's experience, several other observations can be made that point toward a model state water planning process.

The mission of a model state water planning process should be to solve statewide and basin-specific water management problems in the most cost-effective and efficient manner. This mission should be pursued by focusing on several process-related goals, including: (1) involving all affected parties – water users, resource managers, and policymakers; (2) jointly identifying problems, alternatives, and solutions; (3) pursuing consensus solutions; (4) balancing competing water uses (i.e., considering both public and private values); (5) coordinating water management efforts across jurisdictions; and (6) allowing for continuous updating and revision in light of new problems and opportunities.

A model state water planning process should also consider several other factors. The focus on statewide issues should be reviewing and developing the best possible set of legal and institutional tools for solving the issues in question. Basin-specific issues should consider (1) inventorying available water supplies (both surface and ground); (2) identifying existing uses and rights; (3) projecting future needs for water and related land resources; (4) integrating water quantity/quality, surface/ground water, and water/land management; and (5) integrating social, economic, and environmental policies in basin-specific plan sections (Getches, 1988).

Organizationally, a model state water planning process needs only two major actors, a State Water

Plan/Policy Commission (SWPC) and Issue Committees. A SPWC could be created by statute and appointed by the legislature and the Governor. It should be bipartisan and include representatives from water user groups, resource management agencies, and policymakers. The SWPC should be an independent body, with its own staff, that oversees and coordinates the development and implementation of the state water plan. It should select the issues to address, approve and adopt a plan section for each issue, and make recommendations to the legislature, water management agencies, and water user groups. Although the SWPC would not have direct authority to implement plan recommendations (given the diversity of jurisdictions likely to be involved in any given issue), implementation is likely given the consent of policymakers, those with water management responsibilities, and those who can veto plan recommendations. The SPWC should report to the Governor, the legislature, and to other appropriate parties.

Issue committees should be created and appointed by the SWPC for each issue addressed in the state water plan. As with the SWPC, they should include representatives from water user groups, resource management agencies, and policymakers. The issue committees advise the SWPC by identifying problems related to each issue, generating and evaluating alternative solutions, and pursuing consensus solutions and recommendations.

The planning process for a model state water plan should include the steps outlined above. Any number of issues may be addressed during a given planning cycle, which may vary in length depending on the complexity of the issues being addressed. The process is designed to be ongoing given that water management problems and opportunities continually arise as both water supplies and demands change.

A collaborative, consensus-building approach to water resources planning and dispute resolution offers many benefits. By including affected interests in actively determining the outcome of a dispute or a potentially controversial situation, these groups have a stake in the final decision and in seeing that it is implemented. This should avoid the costly and time-consuming outcomes of unmanaged conflicts, such as administrative appeals, litigation, and political action. This approach also encourages the participating individuals and groups to focus on specific water management issues rather than assuming adversarial positions which leave little room for pursuing mutually acceptable solutions. Other benefits include the consideration of diverse perspectives and interests; the cooperative and systematic analysis of technical information; the formation of more pragmatic, equitable, and mutually acceptable goals and alternatives; and the improvement of relationships among diverse,

often competing water user groups, resource management agencies, and policymakers. Finally, this approach may be used to resolve other natural resource disputes and potentially controversial issues.

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LITERATURE CITED

- Amy, Douglas, 1987. *The Politics of Environmental Mediation*. Columbia University Press, New York, New York.
- Bacow, Lawrence S. and Michael Wheeler, 1984. *Environmental Dispute Resolution*. Plenum Press, New York, New York.
- Bingham, Gail, 1986. *Resolving Environmental Disputes: A Decade of Experience*. The Conservation Foundation, Washington, D.C.
- Bishop, Bruce, 1970. *Public Participation in Water Resources Planning*. U.S. Army Engineer Institute for Water Resources.
- Blackburn, J. Walton, 1988. *Environmental Mediation as an Alternative to Litigation*. *Policy Studies Journal* 16(3):562-574.
- Burgess, Heidi A., 1981. *The Delta County Quality of Life Project: Conflict Anticipation At Its Best?* Unpublished manuscript prepared for the Institute of Environmental Studies at the University of Washington.
- The Conflict Clinic (undated). *The Collaborative Problem Solving Process*. George Mason University, Fairfax, Virginia.
- Cormick, Gerald W., 1980. *The "Theory" and Practice of Environmental Mediation*. *Environmental Professional* 2(1):24-35.
- Daneke, Gregory, 1977. *Public Involvement in Natural Resources Development: A Review of Water Resources Planning*. *Environmental Affairs* 6:11-31.
- Doyle, Michael and David Straus, 1976. *How to Make Meetings Work*. Jove Books, New York, New York.
- El-Ashry, Mohammed and Diana C. Gibbons, 1988. *Water and Arid Lands of the Western United States*. Cambridge University Press.
- Getches, David H., 1988. *Water Planning: Untapped Opportunity for the Western States*. *Journal of Energy Law and Policy* 9(1): 1-45.
- Golton, Bob, 1980. *Mediation: A "Sellout" for Conservation Advocates, or a Bargain?* *Environmental Professional* 2(1):62-66.
- Hollings, C. S. (Editor), 1978. *Adaptive Environmental Assessment and Management*. John Wiley and Sons.
- Howe, Charles W., 1988. *The Role of Social/Behavioral Sciences in Water Resources Management: Summary of Conference Highlights*. The Universities Council on Water Resources Update 76.
- Hrezo, Margaret S. and Wayne J. Howe, 1985. *Social Feasibility as an Alternative Approach to Water Resources Planning*. Virginia Water resources Research Center, Virginia Polytechnic Institute and State University.
- Lake, Laura M. (Editor), 1980. *Environmental Mediation: The Search for Consensus*. Westview Press, Boulder, Colorado.
- Levinson, Alfred, 1988. *Environmental Dispute Resolution and Policymaking*. *Policy Studies Journal* 16(3):575-585.
- Lord, William B., 1980. *Water Resources Planning: Conflict Management*. *Water Spectrum* 2:1-11.
- MacDonnell, Lawrence J. and Ann Painter (Editors), 1988. *Symposium on Environmental Dispute Resolution*. *Natural Resources Journal* 28(1).
- Martin, Curt, 1987. *State Water Plan Development: A Revised Approach*. A Report to the Fiftieth Session of the Montana Legislature.
- McCarthy, Jane and Alice Shorett, 1984. *Negotiating Settlements: A Guide to Environmental Mediation*. American Arbitration Association, New York, New York.
- Office of the Governor, 1986. *Executive Order Creating the State Water Plan Advisory Council*. Executive Order No. 20-86.
- Ozawa, Connie and Lawrence Susskind, 1985. *Mediating Science-Intensive Policy Disputes*. *Journal of Policy Analysis and Management* 5(1):23-39.
- Painter, Ann, 1988. *The Future of Environmental Dispute Resolution*. *Natural Resources Journal* 28(1):145-170.
- Rabe, Barry G., 1988. *The Politics of Environmental Dispute Resolution*. *Policy Studies Journal* 16(3):585-601.
- Reisner, Marc, 1986. *Cadillac Desert: The American West and Its Disappearing Water*. Penguin Books.
- Schierow, Linda-Jo and Gordon Chesters, 1983. *Enhancing the Effectiveness of Public Participation in Defining Water Resource Policy*. *Water Resources Bulletin* 19:107-114.
- Shorett, Alice J., 1980. *The Role of Mediation in Environmental Disputes*. *Environmental Professional* 2(1):58-61.
- Susskind, Lawrence E., 1986. *A Sharper Focus: Defining the Common Issues in Dispute Resolution*. *Environmental Impact Assessment Review* 6:51-53.
- Susskind, Lawrence E. and Alan Weinstein, 1980. *Towards a Theory of Environmental Dispute Resolution*. *Boston College Environmental Affairs Law Review* 9:311-357.
- Susskind, Lawrence E. and Connie Ozawa, 1985. *Mediating Public Disputes: Obstacles and Possibilities*. *Journal of Social Issues* 4:145-159.
- Viessman, Warren, 1988. *Technology, Institutions and Social Goals*. *Water Resources Bulletin* 24(3):581-584.
- Warner, Katherine, 1971. *A State of the Arts Study of Public Participation in the Water Resources Planning Sector*. National Water Commission.
- Wengert, Norman, 1971. *Public Participation in Water Planning: A Critique of Theory, Doctrine, and Practice*. *Water Resources Bulletin* 7(1):26-32.
- Worster, Donald, 1985. *Rivers of Empire: Water, Aridity, and the Growth of the American West*. Pantheon Books.