# Collaborative Versus Technocratic Policymaking: California's Statewide Water Plan

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## Foreword

In 2001, the California Department of Water Resources embarked on one of the most elaborate public involvement processes in state history. Over the course of five years and 200 meetings, a 65-member Stakeholder Advisory Committee and a 350-member Extended Review Forum worked with agency staff to produce a new water plan for California. The process consumed some 23,000 person-hours in face-to-face discussions alone. Although the state had been updating its water plan approximately every five years since 1957, the 2005 process produced a dramatically different type of document. For one thing, the 2005 Update is conceptually more accurate, complex, nuanced, and comprehensive. The policy recommendations described in its strategic plan address a broader range of issues—including climate change and environmental justice—yet they engendered somewhat less political controversy than the policies identified in the 1998 Update. Moreover, there is evidence that the collaborative process used in 2001-2005 catalyzed improvements in the relationships among California's historically warring water stakeholders, and also sparked the beginnings of positive cultural changes within certain quarters of DWR.

This research report authored by Ariel Ambruster catalogues the outcomes of the 2005 Water Plan Update process and those of its predecessor, the 1998 Update. As the title of the report implies, one of its most unique contributions is in comparing a highly collaborative process to a more traditional, top-down planning process. For a number of reasons, designing comparative studies is challenging, and only a handful of such studies exist in the academic literatures on planning and public administration. Thus, social scientists to date have learned remarkably little about the comparative advantages and disadvantages of collaborative approaches to governance. Although we have made significant strides in uncovering the keys to successful collaboration, we still know very little about what collaboration is capable of achieving in comparison to alternative approaches. Put another way, we know much about how to collaborate, but less about when to collaborate. Theories from disparate disciplines maintain that the outcomes of collaborative governance are superior in a variety of ways. However, other legal and theoretical arguments challenge these claims. To test the dueling theories, we need empirical studies that compare at least one collaborative process and one alternative, and that use the same criteria to evaluate each process. The report before you represents one of the first studies of this kind.

Given the great variety of collaborative strategies, we will never achieve blanket conclusions about collaboration being “better” or “worse” across the board. On the other hand, we ought to be able to identify the types of outcomes that collaboration is comparatively effective at achieving and the types of situations where collaboration is likely to outperform the alternatives. This report makes much needed progress in addressing such questions.

The author, Ariel Ambruster, conducted the study and documented its finding in a 2007 Professional Report for the master's degree program in the Department of City and Regional Planning at the University of California, Berkeley. The Center for Collaborative Policy at California State University, Sacramento is proud to call attention to the study by publishing it as one in a series of occasional research reports.

With funding from the William and Flora Hewlett Foundation, The Center for Collaborative Policy provided a stipend for Ms. Ambruster to partially defray the costs of conducting the research. The Center also helped broker access to the stakeholders and mediators interviewed for the study. Because the Center provided the professional mediation and facilitation services for the 2005 Update (under a contract with the California Department of Water Resources), our interest in the findings of the report are more than academic. The Center's research program is designed to (a) generate candid evaluations of the Center's own public policy mediation and facilitation practice, (b) promote critical reflection upon the promise and limitations of collaborative strategies more generally, and (c) build stronger ties between theory and practice in the fields of collaborative governance and deliberative democracy. As the Center's Research Director, I provided technical advice regarding the design of the study, commented on drafts of the report, and served as an external member of Ms. Ambruster's faculty committee at UC Berkeley. The analysis and conclusions presented in the report represent the considered judgments of the author.

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## About the Center for Collaborative Policy

Established in 1992, the Center for Collaborative Policy is a self-supporting unit of the College of Social Sciences and Interdisciplinary Studies at California State University, Sacramento. The Center has three emphases:

- ***Service*** through assisting government agencies, stakeholders and communities in addressing complex public policy challenges for such issues as state fiscal reform, natural resource and energy policy, regional transportation, land use planning, and health policy through:
  - Multi-party consensus-building, negotiation, and dispute resolution;
  - Long-range strategic planning and visioning;
  - Inclusive and participatory public participation processes on emerging and controversial policy issues.
- ***Teaching*** collaborative policy development and collaborative leadership to undergraduate and graduate students at the University. The Master's program in Public Policy and Administration offers a three-course series in collaborative policy development leading to a Certificate in Collaborative Governance.
- ***Research*** focusing on theory building in the fields of collaborative governance and deliberative democracy, evaluation of the outcomes of collaborative efforts, and research on collaborative process effectiveness.

## Executive Summary

The growing use of collaboration as a tool to resolve policy disputes has spawned a debate among researchers around its efficacy and efficiency. Few studies so far have directly compared collaborative with more traditional planning methods. This research project does so, looking at one of a growing number of collaborative processes occurring in the field of water policy planning in California. It compares the outcomes of the most recent version of the California Water Plan, produced collaboratively, with the previous version, produced more traditionally by in-house staff with the aid of an advisory committee. The study considers not only the resulting plans, but, through interviews with participants, attempts to assess less tangible outcomes such as increases in social and intellectual capital and institutional change. Staff of the California Department of Water Resources (DWR) completed the earlier plan in 1998 through a relatively traditional process, developing the document with public input solicited through hearings and an agency-led advisory committee. The 1998 plan was completed on time, satisfied the bulk of legal requirements, and quantitatively evaluated several policy options. However, a lack of transparency led many stakeholders to question DWR's analysis, and environmental advocates criticized the plan for relying too heavily on dam construction rather than conservation. For the subsequent plan completed in 2005, DWR hired professional facilitators who led 65 stakeholders through 200 meetings and workshops over five years in an effort to identify consensus recommendations. The 2005 plan was completed two years late, failed to meet certain legal requirements, and fell short of quantitatively evaluating its policy recommendations. However, the 2005 plan reflects a much more complex (and arguably more accurate) understanding of California's water challenges and opportunities. The 2005 process also appears to have hastened an evolution of DWR's institutional culture toward greater transparency and interagency cooperation, opened doors for previously marginalized stakeholder groups, and improved the agency's working relationships with the public. As for other less tangible outcomes, participants of both processes reported increases in social and intellectual capital, although they tended to see more extensive increases in the later process.

## Acknowledgments

This research was partially funded by a stipend from the Center for Collaborative Policy, and was originally published in December 2007 as a Professional Report submitted in partial satisfaction of the requirements for the degree of Master of City Planning in the Department of City and Regional Planning of the University of California, Berkeley.

Special thanks go to my three committee members, for providing invaluable help: Professor Judy Innis, committee chairperson in the form of her insights, conceptual sophistication and gentle guidance; Professor Karen Christensen, whose comments helped broaden and balance my approach; and Bill Leach, Research Director of the Center for Collaborative Policy, who not only offered his support and worthy observations, but also wrote a first draft of this report's conclusions and contributed his quantitative insight to the paper's discussion of methods.

I'd also like to thank my advisor, Professor Tim Duane, who reviewed my initial research proposal and provided incisive feedback that helped me frame the research.

Thanks also to thank Judy, Bill and CCP Associate David Booher for their patience in adjusting to and coping with my physical limitations, which sporadically put the project on hold while my arms, neck and vocal cords recovered. The one benefit these limitations provided is that they kept me incapacitated long enough to give the much-delayed 2005 planning process time to near completion before I began interviewing participants.

Finally, I want to thank the stakeholders, Department of Water Resources staffers, and CCP mediators, the people who generously set aside time to walk me through the events of Water Plan Update-making and to share their assessments, experiences, insights, hopes and disappointments. Each one of them gave me a glimpse into their experience of the rather large elephant that was this daunting, multi-year process of piecing together a vision of California's water future. I hope I have succeeded in my attempt to treat each of their offerings with respect and sensitivity, and, like a successful collaborative product, to craft a report that encompasses all of their views without excluding or diminishing any.

## Introduction

In January 2001, California state water planners launched their periodic update of the state water plan in an unusual way: they sat on their hands and let somebody else start the work. It was all part of a new collaborative water planning process. This time, instead of embarking on their traditional practice of expert data-gathering, state Department of Water Resources (DWR) engineers, economists and planners paused to allow a diverse group of 65 farmers, environmentalists, utility district engineers, scientists, business representatives and social justice activists debate and seek consensus on how they thought state engineers should gather information and plan for California's future water needs. It was an exciting time for stakeholders, and a wrenching time for DWR planners, who were used to doing it their own way, quietly crunching numbers and incorporating them into a relatively unobtrusive informational report. This time they worked with a large and motley group. The dramatic departure of working with a committee of often conflicting voices produced a different type of water plan this time around: a plan that crunched much less data but stuck its neck out to advocate policies for the first time in years. Its action plan includes steps to fund local water recycling programs, assist California tribes to participate in statewide water planning and create plans to cope with the impacts of global climate change on water supplies.

This report compares these and other outcomes of the 2005 California Water Plan Update and its immediate predecessor, the 1998 update, produced traditionally in-house by departmental planners. California's state water planning process offers an opportunity to directly compare a collaborative planning process with a traditional technocratic planning process developed by the same agency with similar goals and codified objectives.

The aim of this comparison is to begin to shed light on some of the differences between collaborative and more traditional policymaking approaches, and to consider more specifically whether collaborative policymaking produces qualitatively different outcomes from, or different degrees of the same outcomes as, more traditional planning methods. This is a qualitative exploratory study. It seeks to provide insights into the on-the-ground workings of traditional and collaborative planning processes, and to develop further information on the ways in which each approach may unfold and may lead to various outcomes, or various levels of outcomes.

In addition, the comparison may provide further evidence supporting or contradicting existing hypotheses in the literature assessing collaborative planning. Supporters of the collaborative approach have posited that it may produce breakthroughs in intractable policy conflicts; that its consensus-based solutions may be more long-lived and sustainable because they result from a dialogue that takes all factors and points of view into account; and that such processes are fertile ground for the production of social, political and intellectual capital that build the foundation for better communication, policy analysis and further resolution of impasses. Skeptics of collaboration, on the other hand, question whether collaborative processes have proved more successful. Criticism

has come from two points of view: those who argue that collaborative processes are time consuming, may bypass laws and agency protocol, may lead to lowest common denominator agreements, and may replace objective, rational products with products tainted by the biases of lobbyists and political players. A second critique has come from some environmentalists, environmental justice advocates and indigenous groups, who are concerned that collaborative processes may not be able to ensure equality at the negotiating table and may erode hard-won public safeguards, rights and/or sovereignty. A detailing of these two planning processes and a comparison of their outcomes enables us to examine to what extent these cases validate any of the above arguments.

This is a professional report prepared for the Center for Collaborative Policy at California State University, Sacramento, an organization that provides collaborative policy, conflict resolution and public involvement services to government agencies. The Center's professional mediators facilitated the development of the 2005 Water Plan. This report was prepared for the Center's Research Division as part of an effort by the Center, assisted by The William and Flora Hewlett Foundation, to evaluate and document its work to systematically build collaborative capacity among institutions and individuals involved in California policymaking.

The report continues with a discussion of the study's conceptual context and pertinent related research before moving on to detail my research methods. It follows with historical context – a discussion of the history of water policy in California and the development of state water planning. I discuss each of the two Water Plan Update planning processes, detailing their structure and providing a narrative of how each process unfolded. Next, under findings, the report compares outcomes of the two processes: first, the products, the two plans themselves; and then other outcomes, including social and political capital, intellectual capital, and effects on participating and indirectly involved institutions. A discussion of these findings ensues.

## Conceptual Context: Collaboration in Planning

American planning and resource management have their roots in positivist philosophies emphasizing the application of logic and rejecting conclusions reached from subjective experience. In traditional planning or technocratic resource management approaches, planners serve as objective experts who provide analysis and plans aimed at implementing goals identified elsewhere, within the subjective sphere of politics – policymakers and the public. Planners take public input into consideration as they draft a plan, but the final product is largely theirs, although crafted within the subjective limitations imposed by their policy-making superiors. This traditional planning approach is seen as maximizing efficiency and rationality and minimizing the corrosive effects of politics (Bryson and Crosby 1992).

The tradition began to draw criticism in the 1960s as advocacy planners argued that "objective" planners' products were biased toward those with power, and planning processes shut out the public. In ensuing years, governments responded by developing mandated requirements for public review and input prior to final decision-making. Critics, in turn, have characterized such activities as agencies as going through the motions of seeking public input while rarely seriously digesting and incorporating public points of view.

At the same time, observers began seeing a preponderance of highly complex and intractable public policy debates, and argued for new ways of resolving these disputes that might achieve more long-term and sustainable solutions (Bryson and Crosby 1992, Susskind and Cruickshank 1987).

Collaborative planning's seeds were sown in the 1960s and 70s with the development of mediation, arbitration, and conflict resolution in the fields of industrial relations, the judicial arena and counseling therapy. From there, mediation and conciliation techniques were applied to public conflicts, such as community racial disputes. One of the areas that has been most fertile for the growth of public conflict resolution has been the planning and environmental policy arena. The first case of environmental mediation occurred in 1973, involving a conflict over the construction of a dam on the Snoqualmie River in Washington State (Dukes, 1996).

Collaboration or consensus-building is usually defined as a practice in which parties with different points of view meet in an effort to build consensus toward agreement in a conflict, or vis-à-vis policy decision-making. The process may or may not involve third-party facilitation or mediation. Collaborative decision-making is occurring in many different forms today, from negotiated rulemaking, in which regulators and affected parties engage in consensus based negotiations over proposed regulations, to multiparty, multi-agency institutions created to work towards resolution of long standing policy conflicts over complex, intractable issues.

Supporters see collaborative planning as a potentially more effective way to break policy impasses, to involve a greater range of interests in a real way in decision-making, and to find solutions that offer mutual benefits. In recent years, as environmental planners have turned more often to collaborative ways of resolving policy disputes, researchers have gathered to observe these processes and question participants. Researchers have observed a number of outcomes arising from these processes that differ from the types of results traditionally observed in planning practice. They encountered participants in collaborative processes who expressed satisfaction from their experience, even when the process did not produce agreements or breakthroughs in political gridlock. Participants said their satisfaction arose from the knowledge, social contacts and political coalitions they gained through their involvement. Researchers saw that these more elusive outcomes can help build cultures that pave the way, over the long term, to sustainable resolutions of conflicts (Innes and Booher 1999, Connick and Innes 2001, Innes and Gruber 2001, Connick 2003).

The following outcomes have been observed arising from high-quality collaborative and consensus-building processes:

- Social and Political Capital
- Agreed-on Information and Shared Understandings
- End to Stalemate
- High-Quality Agreements
- Cost-Effective Decision-Making
- Learning and Change beyond the Original Stakeholders
- Innovation
- A Cascade of Changes in Attitudes, Behaviors and Actions
- Institutions and Practices That Involve Flexibility and Networks

(Connick and Innes 2001, Innes and Booher 1999)

Skeptics have questioned how effective collaboration can be, arguing that such processes are lengthy and time-consuming, and have pointed to collaborative products that were weak because of a failure to gain sufficient consensus to support stronger action (Kenney 2000, Golten, Smith and Woodrow 2002). Those with a rational/technocratic paradigm have raised issues about the level of intellectual rigor and objectivity of collaborative products. Collaboration has been criticized for giving legitimacy to agreements reached by groups that have not made the effort to be truly representative of all interests. A particular example of this is the Quincy Library Group, an ad hoc group that negotiated a 1993 Sierra Nevada timber accord that was later endorsed by Congress, despite outcry from some national environmental groups whose perspectives had not been involved in the discussions (Duane 1997).

Another concern has been raised by public interest advocates and others representing less powerful or moneyed interests who have depended on the judicial system or legislative statute to defend their interests. Such groups, including many environmental groups, environmental justice groups and Native Americans, often do not have the resources, either financial or personnel, to commit to lengthy processes with highly uncertain outcomes. There has been a concern that, through lack of sophistication or resources, or the tendency to "go along to get along," representatives might agree to collaborative products that compromise their interests.

In response to such concerns and experiences, some academics and practitioners have developed a literature of best practices to guide the development and conduct of collaborative processes (Fisher and Ury 1981, Innes and Booher 1999). These preconditions for effective and high-quality collaborative processes include:

- Conveners ensure the process is inclusive by making an effort to search out and include representatives of all interests;
- Assistance is provided to parties with fewer resources and less capacity to help ensure a level playing field;
- Participants attempt to represent their interests, as opposed to their positions;
- Participants have the power to establish ground rules, objectives, tasks and discussion topics;
- The process is engaging;
- It incorporates high-quality information and ensures that participants agree on its meaning;
- It encourages challenges to the status quo.

Additionally, researchers have also identified the type of situations in which collaboration is most likely to be successful. A situation most conducive to collaborative resolution would be one in which parties are at impasse and have relatively equivalent power, the outcome of the conflict is highly uncertain, and collaboration offers more promise than other alternatives, such as litigation (a best alternative to negotiated agreement, or BATNA). A situation assessment is conducted before launching a collaborative to ensure that such conditions exist.

Relatively few studies have directly compared collaborative and traditional policymaking approaches (Leach 2005, unpublished research). Those that have generally looked at more limited forms of collaboration, such as negotiated rulemaking in the

development of federal regulations or public participation in resource management. One notable study, comparing 22 United States estuaries, about half of which were involved in the collaborative National Estuary Program, found more diverse and extensive professional networks among stakeholders involved in the collaborative program (Lubell 2004).

Another analysis (Deitz and Stern 2005, Beierle and Cayford 2002) concluded that, while greater success can arise from more collaborative processes, this success may come at the price of inclusion: greater agreement is possible with smaller groups, as outlying viewpoints are excluded. That study underlines the importance of considering both the quality of access and input of involved stakeholders and the effort made to identify and include all those with an interest in the policy matter under discussion.

The two planning processes examined in this research, the 1998 and 2005 California Water Plan Update processes are, to a large extent, representative of, in the former case, what I am calling a traditional planning process, and in the latter case, a collaborative process. The 1998 update process was conducted traditionally, with in-house experts undertaking analysis and producing the plan. The process did include the participation of an advisory committee of public members. While DWR had no statutory obligation to take into consideration this committee's input, the presence of committee members and the time spent at meetings did create the opportunity for some kinds of collaborative interactions. The 2005 update process utilized a collaborative model in which stakeholders representing different interests are involved in a long-term face-to-face dialogue around policy issues with the aid of facilitation (Innes and Booher 1999). As in the preconditions listed above, the stakeholders seek consensus, and seek to represent their interests rather than their positions; methods are used to encourage respectful listening and communication over rhetoric. Efforts are made to ensure that the dialogue is inclusive of all relevant interests.

While much of collaborative planning in California water policy has been conducted through multiparty institutions created specifically for collaborative purposes, such as the San Francisco Estuary Program, CALFED and the Sacramento Water Forum, the 2005 Water Plan Update process was a hybrid: it was a collaborative process run by one agency, an agency that has historically approached water resource issues from the perspective of a dam builder and conveyance operator. While pledging to be open to the input provided by the collaborative, the agency retained its power to make unilateral decisions. As such, the power of collaborative decision-making lay in the goodwill of the bureaucracy and in the political capital generated by the collaborative process itself.

The 2005 California Water Plan Update collaborative process did not meet all of the ideal conditions for a high-quality collaborative process. Because of time constraints, collaborative professionals were unable to conduct a situation assessment prior to launching the collaboration to determine if conditions were ripe for a successful collaborative process. In addition, they were not involved in the initial selection of participants, although they were involved in bringing on additional stakeholders as the process progressed.

## Methods

This research uses in-depth interviews with participants of the two processes, a method aimed at gaining insight into how participants experience their involvement in

each type of planning process and how they assess both their experience and the process itself.

I gathered the information for this comparison study by interviewing stakeholders, staff and facilitators; and examining written documentation such as the plans themselves, minutes, interim products, and press coverage. In addition, because the 2005 process was underway when I began my research, I was able to attend, or listen by conference call, to several meetings and workshops during the last two years of advisory committee work.

## Interviews

I interviewed 24 participants of the two processes, including stakeholders, DWR staff, and professional mediators. Mediators of the 2005 process were interviewed in the midst of the planning process, from December 2003 to February 2004, as a means of becoming acquainted with the process; stakeholders and staff from the two processes were interviewed from June through September 2005, after release of the 2005 public draft. Interviews were semi-structured and exploratory, designed to elicit impressions, feelings and opinions without framing responses. They began from a protocol (see box), but allowed respondents to take the conversation in new directions. The interviews were conducted in person or over the telephone and varied from one to three hours, averaging about two hours each. Audio of each interview was recorded and transcribed. Each interviewee received a copy of his or her transcript and was given an opportunity to ask for corrections.

### Interview Topics

**Identify turning points or important events, from your perspective, in the planning process, and reflect on what worked well or badly. If involved in both processes, compare the two.**

**Has the respondent or respondent's organization had changes in activities, policies or structure since involvement in the process began? What has the respondent learned personally or professionally from the process?**

**Has the respondent observed changes through the process in how others operated and interacted? Were there any observable changes in positions, definitions, or conflicts over information?**

**Would the respondent become involved in such a process again? To what extent did involvement meet political objectives, and help or harm interests?**

## Sample Selection

I requested interviews from all 12 stakeholders and DWR headquarters staffers who were involved in both the 1998 and 2005 processes, in order to maximize contact with individuals who could discuss their comparative experiences and assessments. Nine (75%) of these individuals agreed to talk.

Beyond that group, I used a purposive sample with the aim of assuring heterogeneity of perspectives among my interviewees. I sought to interview a diversity of stakeholders representing the range of the various interests (agriculture, urban, environment, academic, government, business, equity, etc.) in rough proportion to their representation in the advisory committees for each process. To evaluate the representativeness of the samples, Table 1 compares the number of committee members representing each interest sector, versus the number of interviewees who represent each sector. Table 2 shows the same information for 1998. For most interest sectors, the proportion of interviewees roughly approximates the proportion of advisory committee members. However, funding limitations prevented interviewing enough stakeholders to attain sample goals for some interest categories. Urban interests, water contractors, water district interests, and government representatives had low representation for 2005, and agriculture and government representatives were underrepresented for 1998.

The 2005 advisory committee had 65 members, of which I interviewed 23 (35%). The 1998 advisory committee was about half the size with 37 members, of which I interviewed 10 (27%), a smaller percentage than those interviewed for the 2005 process.

**Table 1. Categories of Interests Represented by Members of the 2005 Advisory Committee Compared to the Sample of Interviewees†**

| Interest Category Represented | Advisory Committee Members | | Interviewees | | Ratio of percentages is comparable (within 1±0.5) |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | |
| Ag | 13 | 12% | 4 | 16% | Yes |
| Business | 4 | 4% | 1 | 4% | Yes |
| Environmental | 18 | 16% | 5 | 20% | Yes |
| Equity | 6 | 5% | 1 | 4% | Yes |
| Fish | 3 | 3% | 1 | 4% | Yes |
| Government | 13 | 12% | 2 | 8% | Yes |
| Recreation | 6 | 5% | 1 | 4% | Yes |
| Area of Origin | 6 | 5% | 3 | 12% | **No** |
| Science | 3 | 3% | 1 | 4% | Yes |
| Tribal | 3 | 3% | 1 | 4% | Yes |
| Urban | 6 | 5% | 1 | 4% | Yes |
| Water Contractor | 14 | 13% | 2 | 8% | **No** |
| Water District | 13 | 12% | 2 | 8% | Yes |
| TOTAL | 108* | 100% | 25* | 100% | N/A |

†Thanks to William Leach for statistical advice on these tables

* Some advisory committee members represent more than one interest category. The total number of advisory committee members is 65 and the total number of interviews is 23.

**Table 2. Categories of Interests Represented by Members of the 1998 Advisory Committee Compared to the Sample of Interviewees**

| Interest Category Represented | Advisory Committee Members | | Interviewees | | Ratio of percentages is comparable (within 1±0.5) |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | |
| Ag | 9 | 20% | 1 | 11% | **No** |
| Business | 3 | 7% | 1 | 11% | Yes |
| Environmental | 3 | 7% | 2 | 22% | **No** |
| Equity | 0 | 0% | 0 | 0% | Yes |
| Fish | 2 | 5% | 0 | 0% | **No** |
| Government | 8 | 18% | 1 | 11% | **No** |
| Recreation | 2 | 5% | 0 | 0% | **No** |
| Area of Origin | 0 | 0% | 0 | 0% | Yes |
| Science | 1 | 2% | 1 | 11% | **No** |
| Tribal | 0 | 0% | 0 | 0% | Yes |
| Urban | 6 | 14% | 1 | 11% | Yes |
| Water Contractor | 4 | 9% | 1 | 11% | Yes |
| Water District | 6 | 14% | 1 | 11% | Yes |
| TOTAL | 44* | 100% | 9* | 100% | N/A |

* Some advisory committee members represent more than one interest category. The total number of advisory committee members is 37 and the total number of interviewees is 9.

## Meeting Observation

I attended or listened by telephone to portions or all of the advisory committee plenary meetings held from December 2003 on, except one. I also observed or listened to four advisory committee workshops. I took handwritten notes or tape recorded the meeting and developed notes from the recording. By the time my involvement began, the bulk of the committee's work had been accomplished.

## Written Documents

For the 2005 update process, I reviewed minutes of all meetings I did not attend, and all drafts of the 2005 update: the stakeholder briefing draft, the administrative draft, a second administrative draft, and the public review draft. I also surveyed advisory committee letters and emails posted on the plan website, and media coverage.

For the 1998 process, I had expected I would augment the memories of interviewees with a thorough analysis of written documentation from the process. However, DWR had lost or misplaced the bulk of the documentation for that process during a move, including scoping workshop comments, public comments on the draft update, minutes for all but one advisory committee meeting, most in-house memos and

all interim products. Thus, the written material I reviewed was limited to the final plan itself and those documents found in a file drawer by a DWR employee. This drawer contained minutes of one advisory committee meeting, a work chart, some public or advisory committee comment letters, several internal memos, and a complete collection of press coverage after publication of the update public draft.

## Evaluation Criteria

This research examines whether, and to what extent, the collaborative process used for the 2005 update produced qualitatively different outcomes from the more traditional expert-driven process used for the 1998 document.

This study considers both traditionally-defined planning outcomes and outcomes that researchers have observed arising from collaborative processes. In the latter category, the study focuses on evaluation criteria developed by Innes and Booher (1999) and modified by Connick and Innes (2001).

A traditional approach to evaluating a planning process typically would consider such aspects as:

- The degree to which the plan satisfies goals and objectives
- The quality of the plan

Approaches to evaluating collaborative processes have considered plan quality as well as a number of additional outcomes, including:

- Policy innovations
- Social and political capital
- Agreed-on information and shared understandings, including:
  - Ability to understand others' points of view
  - Shared understanding of definitions and concepts
  - Agreement on data, models, or analysis
  - Policy-related learning and belief change
- End to stalemate
- Institutional changes in participating organizations
- Changes in attitudes, behaviors and actions
- Learning and change beyond the original stakeholders

This report looks at the degree to which these outcomes arose in both the 2005 collaborative and 1998 technocratic processes.

Another first-order outcome observed in collaborative processes has been cost-effective decision-making. This study did not attempt to research and quantify costs associated with each planning process or compare respective costs to respective achievements.

The study begins with a comparison of the structures of the 1998 and 2005 water planning processes, then continues with narratives of the processes, and follows with an examination and comparison of each process's various outcomes. In discussing comparative outcomes, I consider first the update itself as an outcome, and then move on to outcomes involving participating people and institutions.

## Methodological Limitations

This study is notable for being one of very few studies that directly compares actual examples of collaborative and traditional policymaking processes. While differences between the two processes' outcomes are extensive, a number of factors detract from the ability to attribute observed differences in outcomes to differences in the structure or design of each process.

### Unequal Timing and Scope of Observations

In an ideal comparison study, interviews would have taken place at the same point in each process. However, the 1998 process concluded six years before I began my research. Interviewees understandably therefore had cloudy memories of events around the 1998 planning process and were unable to communicate the level of rich detail that some were able to recall from the 2005 process. Interviewees tended to communicate their impressions, but were unable to remember specific incidents or some important facts, for example, whether the advisory committee had subcommittees. In addition, the 2005 process stretched over nearly five years and many participants in this process as well were beginning to forget certain details. For example, they were often off by a year or more on the timing of major events, and some expressed little concern about incidents that, according to other interviewees, had greatly angered them at the time.

In addition, direct observation of advisory committee meetings was possible for the latter part of the 2005 process (which began in 2001), but not for the 1998 process, which concluded before our study began. Researchers have concluded that the most effective way to qualitatively study a collaborative planning process is through observation, where learning and change are viewed firsthand (Innes and Gruber 2001). These types of changes can be subtle enough that they often escape the awareness of the individuals involved, so this type of material may not be available through interviewing.

Because of the concurrent timing, fresher memories and more detailed written record, I have far greater richness of material on the 2005 process.

### Different Political Contexts

The 1998 process was administered by a Republican governor; the 2005 process was begun by a Democratic administration and concluded under a Republican Governor who came to office through a midterm recall election, creating delays and uncertainty in the Water Plan process. The governor’s office can affect the ideological outlook of the Water Plan through its influence on departmental political alliances and management philosophy, among other factors.

Another historical difference between the two processes is the level of political controversy surrounding the process. The 1998 update became embroiled in jockeying over CALFED, when data and projections from the water plan were used as the foundation for CALFED environmental analyses, and thereby became fodder for the various interests at local and congressional hearings as they tried to influence what was to become the CALFED Record of Decision. The 2005 update did not play such a role in regard to CALFED.

## Different Climates for Collaboration

Collaborative culture has made great strides within the arena of California water resource policy since the San Francisco Estuary Plan began in 1988. Thus, each succeeding collaboration is built upon a widening foundation, and one can expect that participants in 2005 brought greater collaborative skills, awareness and knowledge than those involved in the 1998 process. This means their present set of collaborative skills may have developed from the influence of other collaborative processes, and not necessarily the 2005 State Water Update process. In this way, DWR's experimentation with collaboration can be seen as an outcome itself of the rooting and flourishing of collaborative culture in California water policy.

## Different Personalities

Interviewed stakeholders found the personal qualities of plan leaders to be instrumental in their participation in and appreciation of a planning process. In some cases, initially leery individuals stuck with a process because they trusted the personal integrity of key leaders. In other cases, participants expressed discouragement because they saw certain leaders as close-minded or affiliated with opposing interests. Thus, this non-process factor seemed to have a great sway over people's experiences in each process. While a handful of DWR headquarters staff were involved in both processes, a number of staffers changed assignments or retired, and were replaced. The different state and DWR leaders brought different goals, means and political sympathies to their respective planning process.

## Different Goals

The two updates were drafted in response to somewhat different legislative mandates. Legislation adopted after 1998 mandated that the update analyze certain water strategies, for example, and required that assumptions and estimates used in the update be publicized a year into the planning process.

## History and Maturation

Another caveat is that, even without a change in the design of a planning process, one might expect a certain amount of improvement from one iteration of an update to the next as learning occurs. Thus, we could expect that the 2005 update, even if produced in the traditional manner, would have contained a certain number of innovations.

## Water Resources in California

The technique of collaboration has emerged in water policymaking forums, both in California and across the nation, in the last 20 year as governments and interest groups have searched for innovative tools to resolve intractable political disputes.

The political landscape of water has been particularly contentious in California because of one fact: for the large part, it does not rain in this Mediterranean region in summer. And it does not rain much in the southern half of the state at all. Water for drinking, landscaping, farms and industry must be stored for summer use, and it must be transported from wetter parts of the state to drier parts.

Until about 30 years ago, these temporal and geographic barriers were surmounted by building reservoirs and pipelines. Political conflicts over water mainly involved struggles for control among different regions or interest groups, such as the battle between hydraulic miners and farmers in the 19th Century. Then, in the 1970s, the environmental movement surged, and with it, opposition to dam and pipeline construction, and growing support for efforts to enhance the habitat of anadromous fish populations that were being harmed by reduced river flows, increased Delta salinity and the impediments to natural migration patterns caused by dams.

Federal environmental laws adopted in the 1970s gave members of the public standing to sue over effects on the environment. At the same time, the state's continuously burgeoning population began to test the limits of the state's supply of usable water. The political struggle over the state's water largely centered around three groups: urban water users, farmers, and environmentalists; jockeying took place at hearings, in courtrooms, and at the ballot box. In 1982, California voters decisively rejected a statewide ballot initiative for the Peripheral Canal, a project that would have sent more water from the Northern California's Sacramento San Joaquin Delta to the southern part of the state. Since that year, no major new water projects have been built in the state (Connick 2003).

At the same time, Californians were experiencing periodic droughts, the most notable the extended six-year drought of 1987-1992. Water districts discovered that efforts to rein in their ratepayers' water use, through tiered charges and educational campaigns, were surprisingly effective. Environmentalists championed such conservation and "demand management" approaches as cost-effective alternatives to dam-building. Against a background of potential water shortages, water districts began exploring other creative options such as desalination, recycling and storing water off stream in groundwater basins. Yet there was political conflict around how effective such strategies would be, and what methods were preferred to balance competing water demands and environmental priorities. Out of the ensuing political gridlock, California water players began to seek new forms of policymaking, and turned to a new approach that had appeared on the national policy-making scene.

In the 1980s and 1990s, federal agencies had begun to launch initiatives that incorporated interagency cooperation and the involvement of stakeholders in policymaking. Among water-related efforts, in the mid-1980s, Congress launched the National Estuary Program, an EPA-led effort to foster multi-stakeholder environmental plans at major estuaries. Other collaborative policy-making arenas arose around the

Chesapeake Bay, the Everglades and the upper Colorado River (Gerlak 2006, Scholz and Stiftel 2005).

In California, water-related collaboration began in the late 1980s with the San Francisco Estuary Program, part of the national program. In 1994, state and federal government officials agreed to a framework for coordinating major water project operations and developing a long-term strategy to solve water supply, fish and wildlife and water quality problems in the Sacramento San Joaquin Delta. This effort gradually evolved into the CALFED Bay Delta program, a multifaceted effort encompassing a number of collaborative forums involving representatives of numerous state and federal water project operators and environmental regulatory agencies, as well as a diverse range of stakeholders beyond the three big water interest groups of agriculture, urban water districts and environmentalists. During the preparation of the 1998 update, CALFED was developing its preferred alternative and preparing an environmental impact statement that attracted a great deal of political controversy. Eventually, in 2000, state and federal officials reached agreement on a vision for the Bay Delta, releasing a Framework for Action and a Record of Decision (ROD).

The "CALFED Way" (Innes, Connick, Kaplan and Booher 2006) of interagency collaboration, emphasis on transparency and decentralized decision-making has spread to other state water policy-making forums, and undoubtedly influenced the state Department of Water Resources to try collaboration in its first 21st century water plan update.

## The California State Water Plan

California's statewide water planning process is a child of the earlier, 20th Century dam-building culture. The state Department of Water Resources drafted the first state water plan in 1957 as part of the department's process of planning for California's second-largest water infrastructure project, the State Water Project, a DWR-run system of dams, power plants, pumping stations and aqueducts that channel water from the Delta and Sierra foothills to Southern California and the San Joaquin Valley. The language in the state Water Code calls for periodic updates of this water plan; legislation adopted in 1991 requires that DWR publish an update every five years. The state's Water Code, in Section 10005, defines the plan and its updates as "the master plan which guides the orderly and coordinated control, protection, conservation, development, management and efficient utilization of the water resources of the state."

As emphasis has gradually shifted away from expanding the State Water Project, the department turned the updates from planning documents into informational documents that were snapshots of uses and supplies. But as local water districts have taken over responsibility for planning and implementing solutions to water shortages, the raison d'être for the state water plan update has become less clear. The 1998 and 2005 updates can be viewed within this lens, as state planners struggle to come to terms with changing conditions in California's water world.

The first update to use an advisory committee was produced in 1993. DWR officials at the time said they felt involving a diverse group of those affected by the plan would contribute to a more technically accurate and politically balanced document (Loh 1994). The 1998 update was initially conceptualized as a replay of the 1993 document, which had made strides in its comprehensiveness and portrayal of the state's different

regions. DWR leaders decided the 1998 update would push further by beginning to step beyond pure information, by evaluating options for addressing future water shortages.

Since the development of the California Environmental Quality Act (CEQA), DWR has created Water Plan Updates that avoid specific and concrete construction recommendations, so that the updates do not trigger CEQA and require the expensive preparation of an environmental impact document.

Codes require that DWR release a preliminary draft of each update for public review and comment and consider public comments in preparing the final plan update.

Legislation adopted after the 1998 update added more requirements. The Poochigian Bill, adopted in 1999, required that DWR use an advisory committee in the planning process, and include in the update a discussion of potential strategies including development of new water storage facilities, water conservation and recycling, desalination, conjunctive use, and water transfers. The update must discuss the potential advantages and disadvantages of the strategies and identify all federal and state permits, approvals or entitlements that might be required in order to implement them.

In other legislation, the Burton Bill of 2000 required DWR to produce a report one year into the planning process detailing the assumptions that would be used in the plan. The Machado Bill, adopted in 2001, required the state to include in the update a report on the development of regional and local water projects within each hydrologic region. Lastly, the Matthews Bill of 2002 required the update to include a scenario under which agricultural production in California is sufficient to assure that California is a net food exporter and that net shipments out of state are enough to cover 25 percent of United States “table food” use plus “growth in export markets.”

## Structural Differences between the 1998 and 2005 Planning Processes

The two processes were set up and managed in significantly different ways, a reflection of the planning method and theory underlying each one.

DWR Departmental engineers, economists and planners undertook the full workload of producing the 1998 update. Although they made use of an advisory committee, and advisory committee members were allowed to sit in on update subcommittees, the advisory committee had no authority – its role was limited to reviewing draft materials, recommending changes and providing a "reality check" for the department. On the other hand, in the 2005 process, the advisory committee and DWR leaders debated and reached consensus on recommendations for how DWR should undertake the 2005 plan.

Arnstein's (1969) ladder of participation can be a useful tool in comparing community involvement in the two processes. The ladder (Figure 1) consists of eight rungs, ranging from nonparticipation at the bottom to full citizen control at the top. While some of her terminology reflects the viewpoints of a social activist writing in the 1960s, Arnstein's diagram is a helpful metric for evaluating and comparing degrees of participation in policymaking. Participation in the 1998 process would come under the fifth rung, which Arnstein calls "Placation" and considers a "degree of tokenism." She defines it as inclusion in bodies such as advisory committees for the purposes of providing input, while full power for decision-making remains outside the committee. Collaborative processes had not developed at the time of Arnstein's article, but

participation in the 2005 process would most likely be described as a sixth-rung level of Partnership, the lowest level of "degrees of citizen power." At this level, power is shared between citizens and power holders, and rules of conduct established by the various parties cannot afterward be unilaterally changed. While formally, DWR retained all power to make decisions in the 2005 process, in practice the agency adopted almost all consensus decisions reached by the advisory committee. Table 3 compares a number of components of the two processes.

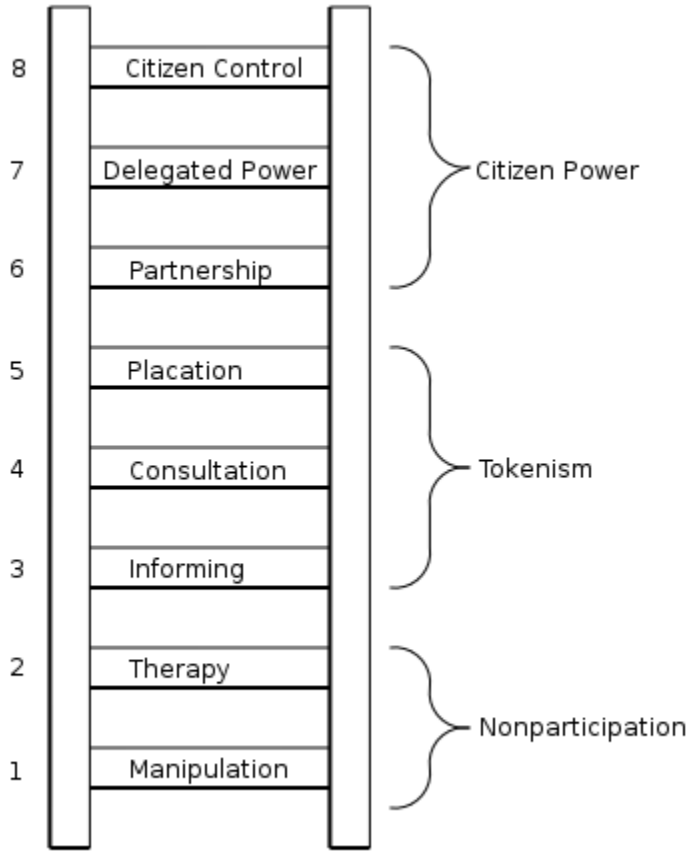


Figure 1. Arnstein's Ladder of Participation

**Table 3. Comparison of 1998 and 2005 Process Structure**

| **Components** | **1998** | **2005** |
|---|---|---|
| Who Did Planning | DWR planners; they consider AC input | DWR planners and AC |
| Where Authority Rests | With DWR | With DWR; DWR gives highest possible consideration to AC recommendations |
| AC Size | 37 | 65 |

| | | |
|---|---|---|
| AC Facilitated? | No | Yes |
| AC Chairperson? | Yes, California Chamber of Commerce rep | No |
| No. of AC Meetings | 20 | 43 |
| Average AC Meeting Length | Two days | One day |
| Activities in AC Meetings | Meetings and field trips | Meetings |
| AC participation in DWR workgroups? | Yes | Yes |
| Format of AC Meetings | AC members around large table | AC members around several small tables |
| Format of Public Hearings | Staff presentations; conversations; no public speeches – comments given to transcriber | Staff presentations, small table discussions, speeches |

Both updates were prepared under the direction of the head of Statewide Water Planning within DWR's Division of Planning and Local Assistance. The 1998 update was assembled by a group of less than 10 staff members at the headquarters office in Sacramento, who synthesized data and analysis done by other employees in Sacramento and at four regional offices. Other DWR employees outside the planning group provided assistance or studies on special topics. The 2005 update was also produced by staff at the Sacramento and four regional offices, with help from subject matter experts in other parts of DWR, but the work was organized differently. For the 1998 update, as in the past, work was organized hierarchically; staff at the Sacramento office directed the work of employees at regional offices. In the 2005 process, the Statewide Water Planning manager created content-based teams of staff from different offices, where team members had a greater degree of shared power.

As far as advisory committee work, DWR used the 1998 advisory committee to review and provide input on draft work products. Although most of the 37 members came from the big three interests, ag, urban, and environment, DWR brought in some new perspectives, including business interests and trade groups. Most of the members had been active in state water policy or local water agency planning. Meetings were chaired by a representative of the California Chamber of Commerce, chosen because his organization was not one of the traditional big three water interests. There was no hired facilitation team; instead, the update program manager set the agenda and ran the meetings, with the chairman calling upon advisory committee members who wished to speak. Advisory committee members sat around a large rectangular table with DWR staff speaking from the front of the room.

The 1998 advisory committee meetings were different from the 2005 process in one aspect: they were often held outside Sacramento, usually over two days, and often included field trips. For example, in January 1996, advisory committee members met in San Jose and the session included a tour of the San Jose/Santa Clara Water Pollution Control Plant with DWR staff.

In addition to their own meetings, 1998 advisory committee members were invited to participate in several ad hoc subcommittees, dealing with subjects such as evaluating future water management options, water demand forecasting or estimating potential future water conservation.

In the 2005 process, the advisory committee required by statute was greatly expanded from 37 to 55, and later 65, members, to represent a wider variety of viewpoints. It was given far more power than previous advisory groups. While DWR retained the authority to be the ultimate decision-maker, the agency's leaders agreed in the advisory committee charter to give the highest possible consideration to advisory committee suggestions based on substantial consensus. The department also agreed to share information and insights and make decisions in a transparent manner, with full communication to the committee.

The charter defined the collaborative process as a consensus-seeking rather than consensus-based process, meaning that advisory committee members would strive to reach consensus, but in situations where there was not enough time to resolve all fundamental concerns, facilitators would communicate to DWR the range of support and opposition to a proposal.

The consensus-seeking process was facilitated by professional mediators from the California Center for Public Dispute Resolution (later renamed the Center for Collaborative Policy) at California State University, Sacramento. The mediators' charge was to ensure an open process, thoughtful consideration of all views, and adherence to rules of conduct in which participants agree to listen, openly discuss issues, approach conflicts as problems to be solved rather than battles to be won, and refrain from personal attacks. Advisory committee members were required to keep their constituents briefed on the committee's progress.

In 2005, DWR further expanded the perspectives represented in the advisory committee. Along with the traditional agricultural, urban and environment interests, among those participating were a United Farm Workers representative, representatives from three California Indian tribes and a member of Urban Habitat, an Oakland-based non-profit representing communities of color on environmental issues. The number of environmental groups on the advisory committee also expanded greatly from 1998, from two to eight strictly environmental organizations involved, aside from environmental-friendly scientists; government representatives; environment-oriented trade and recreation groups; and public members. DWR also created a new body, the 350-member Extended Review Forum, for applicants to the advisory committee who weren't selected and other interested parties, which received regular updates and information about the planning process. In addition, facilitators held seven outreach meetings around the state to meet with California tribes.

The advisory committee met in plenary meetings every 1-2 months and in ad hoc workshops and workgroup meetings with staff, all open to the public. All but one meeting were held in Sacramento. In addition, for the first year and a half, advisory committee members discussed business through email communication. However, this stopped in June 2002 when DWR attorneys decided this might not be in keeping with state open meeting laws requiring that all decisions be made publicly.

At plenary meetings, advisory committee members sat at round tables that seated about eight people each. Public or staff members sat at the back of the room at long,

rectangular tables to observe. Presenters stood at the front of the meeting, while facilitators often moved around the room. Early advisory committee meetings included small-table discussion groups so stakeholders could get to know others on the committee and interact one-on-one with those holding different points of view. Workshops and workgroups were designed for more focused and intense work on specific subjects and were open to all advisory committee members interested in attending in person or through a conference call hookup.

In both the 1990 and 2005 processes, DWR reimbursed advisory committee members for travel expenses, if needed.

Each process handled public hearings differently. 1998 update Chief Janine Jones developed a new "open house" format for hearings that encouraged conversations between the public and DWR staff and discouraged speechmaking. Time was set aside for one-on-one information gathering and discussion. Members of the public were not allowed to present their comments to others assembled at the meeting, but were instead directed to sit in front of a court reporter who transcribed what they had to say.

For the 2005 update, speeches were allowed at public hearings, but, as in the 1998 process, conversation was encouraged. This time, it was encouraged among attendees, who were seated at small tables, with a DWR employee or advisory committee member present at each table. Then, each table selected a spokesperson to summarize the discussion to the entire gathering. DWR also held two nighttime phone-in meetings.

## Account of the 1998 Planning Process

When preparation for the 1998 update began in late 1994, DWR planners had already been hearing complaints from public commentators arguing that the update should be less of an informational snapshot and more of a "plan" with recommendations. To respond to such arguments, DWR established that the 1998 update's major innovation would be to move beyond information, evaluating which steps would be most effective at solving future water shortages.

They began work on the 1998 update by developing a detailed work plan. DWR held a public scoping meeting a few months later, and convened the public advisory committee in April 1995. For the first time, DWR sought advisory committee advice over what areas the bulletin should cover.

In general, DWR planners and engineers shared with the advisory committee how they were planning to undertake certain planning tasks and heard advisory committee questions, comments and suggestions. DWR also brought interim work products and draft chapters before the committee to gather input.

The bulk of DWR's planning work involved collecting and analyzing data. This plan, like the previous six before it, was largely a technical report estimating the amount of current water use and water supply, projecting population and other factors into the future, and then using models and hand aggregation to project future water demand and supply. From these projections, planners produced a "gap analysis," which predicts the amount of future water shortage.

To develop numbers on contemporary conditions, planners created estimates of urban, agricultural, industrial and environmental water use. The level of data analysis was fairly coarse. For example, to estimate current agricultural land use, the department gathered satellite information on different crop acreages in a handful of counties and

extrapolated. An accurate estimate of current water supplies is always hampered by the fact that the quantity of water in many of the state's groundwater basins is unknown. To estimate current urban water use in 1998, DWR engineers used data from an annual survey of 300 retail water agencies, modified that based on analysis of the percent of urban water used on landscaping, the amount of evapotranspiration from landscaping, the effect of the recent drought, and an estimate of industrial water use from a 1994 statewide survey of industries.

To predict future water demand, DWR used several simple computer models. Planners took future population figures from the state Department of Finance, modeled changes in agriculture to develop agricultural demand forecasts, evaluated future conservation practices to develop forecasts of urban water demand, and developed a scenario of environmental water demand based on predictions about future environmental laws. Planners calculated whether a gap was expected to exist statewide and in any of the state's 10 hydrologic regions (San Joaquin River, North Coast, etc.).

Planners used computer models to estimate certain numbers – for example, Central Valley agricultural production or urban demand forecasts. Because the various models – CALSIM and IWR-MAIN being the most prominent – were developed independently, there is not yet a smooth way to share information between them, because they use different geographic units or time scales. Doing so therefore requires using data at a more coarse scale. Certain portions of the data analysis were not modeled, but were aggregated by hand.

The 1998 update moved beyond the previous bulletin, which was solely informational, by making a first tentative step towards recommendations by evaluating ways to close a future water supply/demand gap. DWR planners compiled a list of possible water management options for each hydrologic region – including new dams and pipelines, conservation, water recycling, desalination, ground water storage – ranked these options based on five criteria (cost, feasibility, environmental impacts, third-party impacts, and legal or institutional problems) and then, based on the rankings, developed a list of the options agencies were "most likely" to undertake. DWR created an advisory committee technical subcommittee to work with staff on developing the options evaluation.

Because the 1998 update statistics were to be used in developing CALFED policy, this heightened the level of political jockeying over the 1998 plan. The 1998 planning process was colored by the philosophical conflicts over expanding water management infrastructure versus protecting and restoring the environment. Advisory committee members engaged in some intense debates, expecting that the final numbers used in the water plan could influence CALFED decisions.

The issue of greatest controversy at advisory committee meetings was projecting how effective future urban conservation might be in benefiting water supplies. Environmentalists, backed by a Pacific Institute report (Gleick 1995), argued that growing use of urban conservation methods had already shown substantial promise in reducing water use, and expanding use of such methods and technology could be expected to trim demand significantly in the future. Agricultural interests, on the other hand, advocated for construction of new reservoirs and conveyance facilities. One urban interest said her sector was positioned between the other two interests, as local water district officials didn’t want to be stuck in the future if conservation estimates were

overly optimistic and needed infrastructure wasn't built. Other topics provoking extensive discussion were defining what portion of water supplies was allocated to environmental uses, and how to calculate the amount of groundwater overdraft, given that in much of the state groundwater use is unmeasured.

DWR held to a strict schedule under orders from the governor's office, as the goal was to finish the plan on time and before Governor Pete Wilson's term ended in January, 1999. DWR staff put in long hours to make the deadlines.

Aside from the heavy work schedule, participants recalled internal conflict in the department, as well. At least part of the problem arose from a difficult institutional situation within DWR, where water plan officials depended on work from the district offices, but had no decision-making authority over the district office staff. Some said there were personality conflicts, as well.

When the public draft of the 1998 update was released, planners resisted requests by environmental organizations to extend the public comment period.

Environmentalists produced an outcry during this period, arguing that the assumptions of the report were biased against conservation and in favor of developing dams and other structural solutions to future water problems. One legislative aide issued a critique of DWR's data analysis methods at a hearing before the U.S. Senate Select Committee on CALFED. At the same time, some criticized the way DWR executives handled the public hearings, in replacing speeches with dictation to court reporters. The format was criticized by an editorial in the Bee newspapers in Fresno, Modesto, and Sacramento.

Otherwise, press coverage generally picked up on the bully pulpit aspect of the plan and its warnings about future shortages unless action was taken. A typical headline (this from the San Jose Mercury News): "State water crisis looming."

As a response to the public criticisms, new DWR managers brought in by the incoming Davis administration held workshops to dialogue with the public about controversies in the previous year's report.

## Account of the 2005 Planning Process

The Davis administration responded to criticisms of the 1998 update by radically revamping the planning process for what was to become the 2005 update (it was originally the 2003 update until lengthy deliberations and the Governor's recall and replacement pushed the date eventually to 2005, released in print in 2006). Jonas Minton, a deputy director brought in by the new administration who had directed the successful Sacramento Area Water Forum consensus-seeking effort, introduced the new technique of collaborative planning to DWR.

Because of the delay caused by filling empty DWR management spots after Gray Davis became governor, work on the water plan update was behind schedule and had to be jumpstarted with little time for preparation. Generally, the Center for Collaborative Policy conducts an assessment prior to beginning collaboration to determine if the parties and the conditions are ripe for commitment to a collaborative process. For example, key parties may not be fully committed to reach agreement if they think they can get a better deal through other means, such as litigation or traditional backroom dealing. Their Best Alternative to a Negotiated Agreement, or BATNA (see Fisher and Ury 1981), determines their willingness to devote themselves sincerely to collaborating. In addition,

the mediators leading the process will typically help shape the membership of the group, to ensure that all interested or affected stakeholders are at the table. In this case, there was no time for CCP to formally evaluate the likelihood of collaborative success. And DWR managers had already selected advisory committee members before facilitators began their work.

As the advisory committee began meeting in January 2001, DWR managers decided to postpone analyzing data on water supply and demand until stakeholders had an opportunity to work toward a consensus on how planning should proceed. After extensive discussion, the advisory committee and DWR agreed to make changes in how current conditions would be analyzed. First, the plan would use real, rather than normalized data, as had been used in the past, because there had been political controversy over assumptions and methods used to normalize data. Second, current information would be greatly expanded to include a picture of the entire hydrologic cycle for each of the 10 regions, with the aim of more accurately representing how water enters, moves through and leaves the system. And lastly, conditions would be described not only for a normal year, but also for a drought year and a wet year, so that real information on a multiplicity of water conditions would be provided.

Then, while staff gathered data for current conditions, the advisory committee moved into a lengthy discussion on how best to project future conditions and test the efficacy of water management strategies in resolving shortages. New legislation required DWR to produce a report one year into the update planning process detailing the assumptions and estimates that would be used in planning analyses. This law was aimed at requiring DWR to make its assumptions more transparent than it had in the past, but it ran afoul of the complex discussions of the collaborative process. The department missed the deadline because the advisory committee and DWR had not yet reached agreement on those specifics.

DWR had agreed to stakeholders' requests that the update analyze multiple future scenarios, and agreed to try to do analyses for multiple future years and for a normal, wet and dry year. Supporters argued that multiplicity would account for uncertainty by capturing a greater range of possible futures and allow strategies to be tested under a number of different conditions. Deliberating in workgroups, stakeholders and staff spent a great deal of time developing multiple visions of the future to reflect the range of potential uncertainties, coming up with packages of potential water management strategies to test, working on criteria with which to evaluate those strategies and debating about how to undertake modeling.

About a year and half into the expected three-year process, DWR had enough information and consensus from stakeholders to put together a table of scenarios to test.

But by this time, another thread was emerging at advisory committee discussions: approaching deadlines. How exactly would staff study these scenarios? How much analysis could be conducted in time to produce a 2003 document? Was the quality of analysis going to be sufficient for the many stakeholders who found fault with the models and data analysis procedures used in 1998? Eventually, in August 2002, DWR staff determined that they would not have the time to do such a sophisticated and complex level of analysis – a level of complexity that could require possibly 150 model runs – in time to produce the update by December 2003, the statutory deadline.

As the implications of this revelation gradually sank in, the advisory committee and DWR hit gridlock. Stakeholders asked that the deadline be extended, while DWR management insisted the statutory December 2003 time limit remain and proposed undertaking a much more limited demonstration analysis for only one region, instead of 10, using two instead of three or four scenarios. At the December 2002 meeting, one stakeholder organized a revolt, with 37% of stakeholders present voting against DWR's plan. During the upheaval, an academic stakeholder proposed a compromise plan, which was eventually adopted. Under this plan, the 2003 update would be produced without significant data analysis. It would be largely a policy document. It would be considered to be "Phase 1" of a three-phase process. In Phase 2, to be undertaken in 2004, a modeling group would meet to identify the data gaps and come up with a plan for analyzing future scenarios and responses for the next update, which at that time was expected to be published in 2008. And Phase 3, the actual modeling and analysis, would take place during preparation of that next update.

Work then proceeded on policy recommendations, recommendations that could be made without a numerical prediction of future needs and supplies. Eventually, DWR and the advisory committee agreed on 14 recommendations and they developed an implementation plan to carry them out. The recommendations reflected the changing picture of California water: they emphasized DWR's role in facilitating local efforts to develop integrated resource management; encouraging regions to develop a diverse suite of water management strategies; and working to improve data, scientific understanding and water technology in the face of current challenges and the potential effects from global climate change. In addition, the recommendations reflected the involvement of historically marginalized stakeholders and environmental justice ideas, asserting that the state must explicitly consider public trust values, and encourage and assist California tribes and the state’s disadvantaged communities to participate in water planning and access state water project funding.

The 2005 update process remained relatively undisturbed by other events in California water. Instead, the greatest disturbance came from the change in governors midstream, which caused a significant delay and led to a certain amount of change in the update's content. Governor Gray Davis was recalled in October 2003 and Arnold Schwarzenegger replaced him the next month. The ideological shift took some time to be felt, as executive positions in the Department of Water Resources opened and then remained unfilled for many months. Through much of 2004, DWR staffers played a waiting game; the advisory committee met less frequently and focused on less controversial parts of the update while new officials were selected, took their seats and evaluated where to take the water plan.

Eventually, the Schwarzenegger administration embraced the collaborative water planning process. While the bulk of the update remained the same, DWR officials did make some changes. They made a significant change in the wording of one recommendation from "California needs to rehabilitate and maintain its aging water infrastructure" to "Improve Aging Water Infrastructure." While the wording change may appear subtle, “improve” tends to be interpreted as “expand” or “build upon,” rather than maintain and repair. The change in terminology appears to reflect a Republican administration's greater enthusiasm for construction of dams and other infrastructure projects.

The Schwarzenegger administration also packaged the update to emphasize selected recommendations: improving facilities, flood management and Delta levees, and promoting integrated regional water management.

New DWR Director Lester Snow also required a significant change in the data analysis method used to estimate future water demand. Previously, the draft update had used back-of-the-envelope figures roughed out by a now departed DWR official. Snow wanted to see numbers derived from some type of modeling. DWR staff partnered with a student from the Pardee RAND Graduate School to develop a simple spreadsheet model of demand, which produced similar figures, but through a documented, modeled method.

Along with policy recommendations and an action plan, the update, released in draft form in mid-2005, in final form on the web in December 2005 and in print in Spring 2006, includes a description of 25 water management strategies, with potential costs and benefits listed for each; a description of each of the 10 hydrologic regions, developed from locally provided data; and tables and diagrams of detailed current water conditions (called the "water portfolio"). Stakeholders were extensively involved in helping to draft the strategies and regions chapters.

As far as future data and analysis, the update includes a range of estimated benefits of eight of the 25 resource management strategies. It also includes a projection of water use in 2030 under not just one scenario, as in the 1998 update, but three scenarios: “current trends continued,” “less resource intensive” future, and “more resource intensive” future. Staff members were unable to complete a projection of future water supplies or run any computer models.

Press coverage of the 2005 water plan focused on its new endorsement of water conservation as a significant and cost-effective way to meet demand, among a smorgasbord of other options. Articles also touched on the surprising lack of doom and gloom in the new report: "... for a change, most of the news is encouraging," said an op-ed in the Los Angeles Times entitled "A Shocking Water Noncrisis."

In the past, during the public comment period, water conservation supporters have produced competing reports to the update, showcasing analyses underscoring the argument that conservation can meet future needs and further dams or canals won't be required. The conservation-endorsing Pacific Institute once again published a competing report, but this time was joined by a handful of others. Jonas Minton, who as a DWR deputy director had launched and shepherded the 2005 update collaborative process before leaving when Gray Davis was recalled, produced a pro-conservation report for the nonprofit Planning and Conservation League. And, for the first time, the Association of California Water Agencies (ACWA), representing urban and agricultural public water purveyors, produced a report titled "No Time to Waste" that proposes $3 billion in new spending on dams, pipelines and reservoirs. ACWA leaders said the report was "born of frustration" with the state's failure in the 2005 update to push dams more aggressively, and the 2005 planning process had "substituted process for leadership" (Hacking 2005a, 2005b). A fourth report, "Thirsty for Justice," produced by the. Environmental Justice Coalition for Water, focused more on problems under the purview of water quality agencies, but also critiqued DWR for having failed to launch any community driven processes to develop a departmental environmental justice component.

The Schwarzenegger administration created an $11.5 billion water bond measure to finance many of the 2005 update's recommendations, which California voters passed in November 2006.

Because of the delays in finishing the 2005 update, Phase 2 was pushed behind schedule, and there has been disagreement as to whether it has been properly conceived of and completed. DWR staff members say they expect to work on parallel processes to develop a sophisticated data analysis procedure that could be implemented within 10 to 15 years, while tweaking previous modeling and analysis procedures for the next update. As of today, DWR and data-savvy stakeholders have a great deal of work to do before they will be able to come to agreement on an approach to undertaking data analysis.

# Findings: Comparing Outcomes of the 1998 and 2005 Processes

This section compares the 1998 and 2005 water plan updates and the process outcomes discussed by interviewees. First, the updates themselves are considered, including the extent to which they meet codified goals and objectives, contain innovations or achieve high quality. Then I look at a wide variety of less concrete outcomes, including generation of social, political and intellectual capital, influence on institutional change, breakthroughs in impasse, and influence on learning and change beyond the original participants.

In comparing these two processes, it is important to keep in mind that they sprang from different sets of goals and ambitions. The 1998 update resulted from a fairly limited goal, to meet the letter of the law, and produce an informational document. The 1998 update provided a limited evaluation of future water management options, but refrained from making recommendations, exemplifying the department's reluctance to venture from the world of data to the world of values. The 2005 update process, on the other hand, arose from a much broader ambition of bringing diverse players together to possibly resolve some of the state's persistent water policy conflicts. DWR attempted to develop a consensus among a wide variety of water interests on the best way to evaluate and envision the state's water future.

## Products of the Processes: Comparing the Updates

### *Update Content*

The two planning processes produced starkly differing documents.

The 1998 Water Plan Update, like past water plans, was a largely informational document, more of a technical report that projected future water supplies and demands and identified a potential gap. It departed from previous plans in taking a first step at suggesting what could be done for the future, by creating a ranked evaluation of options to close the gap.

The 2005 Water Plan Update was redesigned as a strategic plan, which set out a mission, goals, objectives and a plan for implementation. It made specific recommendations and laid out actions in an implementation section that DWR would take to work towards these recommendations. In this sense, it was a "plan" in that it made recommendations for future actions. A key difference with the 1998 update is the 2005 update was a policy document that made recommendations for the future. Another difference was that it did not undertake a significant amount of quantitative analysis. (For an overview of each plan’s structure and orientation, see the Table of Contents for each document in Appendix 1 and Appendix 2.)

Plans typically are undertaken by first inventorying and analyzing present conditions, then using that information to predict future conditions. This analysis then allows planners to evaluate a list of potential actions that can be taken and policies that can be adopted to lead to more desirable future conditions. After this analysis, planners can recommend the most effective actions and policies. The California Water Plan Update, prior to the 1998 update, had developed into a different type of document in which analysis was undertaken but no evaluation or recommendation of possible actions

or policies was undertaken. The 1998 plan differed by evaluating, but not recommending, future actions. Planners undertaking the 2005 update expected to take all of these steps, but a lack of time and consensus prevented that from occurring. In the end, the 2005 plan did recommend future state policies, but did not complete data analysis of the future, or an evaluation of more specific future actions. Table 4 displays the planning work undertaken and completed for each of the two updates.

**Table 4. Planning Tasks Accomplished by Each Update**

| Task | | 1998 | 2005 |
|---|---|---|---|
| Inventory Current Conditions | | Done | Done |
| Project Future Conditions | Estimate Demand | Done | Done |
| | Estimate Supply | Done | |
| | Identify Possible Solutions | Done | Done |
| | Evaluate Solution Cost/Benefits | Done | |
| | Quantify Solution Impacts | Done | |
| | Model Solution Impacts | Done | |
| Consider Future Solutions | Predict Likely/Best Actions | Done | |
| | Recommend Actions | | |
| | Recommend Statewide Policies | | Done |

Both updates estimated current supply and demand, projected future demand (either through computer modeling or a simple spreadsheet projection), contained detailed reports on the state's 10 hydrologic regions, and detailed a list of options or strategies to reduce water demand or increase water supply.

The 1998 update went further in undertaking quantitative analysis to project a single estimate of future demand, in projecting future supplies, and in coming up with numerical estimates of the potential contribution of the future gap-closing options.

The 2005 update went further in making policy recommendations and establishing an implementation framework for those recommendations, in developing multiple scenarios of future conditions, and in beginning to assess the implications of climate change. Its analysis, while lacking a completed base of underlying data, reflected greater conceptual complexity.

### *Satisfaction of Codified Goals and Objectives*

Typically, plans and the processes that produced them are evaluated for the degree to which they effectively satisfy officially laid out goals and objectives. In this

case, the 1998 update did a better job of complying with the letter of the law, while the 2005 update went further in serving the spirit, by resurrecting the function of the State Water Plan Update to actively guide actions for future purposes.

**1998: Meeting the Letter of the Law**

At the time of the drafting of the 1998 Water Plan Update, the codified goals and purposes of a water plan update were fairly meager. As noted earlier, the state's Water Code, in Section 10004, requires the Department of Water Resources to update the State Water Plan every five years. The plan itself, with its updates, is defined as "the master plan which guides the orderly and coordinated control, protection, conservation, development, management and efficient utilization of the water resources of the state" – thus, it is supposed to guide the efficient use of water resources, as well as their development and conservation. The Water Code also requires that DWR release a preliminary draft of the update for public review and comment, give the public an opportunity to present written or oral comments, and consider those comments in preparing the final plan.

The 1998 update was produced on time and met the above public participation requirements. As an update to a master plan, however, it lacked any “guiding” language, i.e., any recommendations. Instead it provided only the analysis portions of a plan, estimating current conditions and projecting future conditions, and it also listed and evaluated potential alternatives.

**2005: Attempting to Meet Spirit of the Law**

While the above language guided the development of the 2005 Water Plan Update as well, a flurry of legislation was passed after the completion of the 1998 update, so that legislative requirements for 2005 were far more extensive and detailed in their specific demands.

The 2005 update met Machado Bill requirements for reporting on regional and local water projects; and most requirements in the Poochigian Bill, except a section requiring the identification of all federal and state permits, approvals or entitlements that might be required in order to implement the strategies.

DWR officials admitted they were not able to meet all the legislative requirements. The update was released two years behind schedule. In addition, DWR was unable, either by the required time or at any time, to detail the Burton Bill-required assumptions and estimates of the 2005 plan, because they still had not resolved specifically how data would be analyzed. DWR was also unable to comply with Matthews Bill legislation requiring a certain level of California food production to be included in future scenarios, because they hadn't received a needed report from another state department.

Unlike the 1998 update, the 2005 document did “guide” by including recommendations. It analyzed current conditions and listed potential alternatives. However, it only began to project future conditions, and did not evaluate alternatives.

### *Plan Quality and Innovation*

Plans can also be evaluated for the degree to which they excel in their purpose, solve problems and break new ground. Here, high-quality planning is operationalized per Innis and Booher (1999) and Connick and Innes (2001) as plans that genuinely alleviate

problems or produce mutual-gain solutions, are practical and implementable, are based on a broad sphere of knowledge and information, and are innovative. In addition they are widely accepted among the public and those affected and are regarded as fair.

**1998: New Effort to Analyze Future Options; Controversy over Content**

Among the innovations in the 1998 update, it presented a wide range of statewide/regional water management options, placing more emphasis on regional water management. It took a step away from being merely a State Water Project report by placing that project in context with other projects around the state, such as the larger federally run Central Valley Project, and giving greater consideration to other parts of the state outside the Delta. It included information from a new urban water use simulation model the department developed with UCLA economists. Lastly, it moved beyond description and data analysis by evaluating and ranking ways to reduce future water shortages at the state and regional level.

This update included an extensive amount of data collection and analysis. However, during the public review period, speakers and writers expressed widespread dissatisfaction with the quality of the data and sophistication of this analysis. Some DWR staff members argued that the quality of the work was good, given the available time, money and retrievable information. Others outside DWR objected to the idea of even undertaking gap analysis, arguing that the State of California is not a bathtub, so that articulating a single statewide gap between supply and demand was therefore illogical – it would only be helpful if the state's water supply system was so well networked that water could be moved from one part of the state to another to even out supplies. “By ’93-’98 it was pretty apparent that this was not a good way to do numbers," said one stakeholder. "Even if the data was of high quality and you believed it all and it was nice and transparent, it was just off base." Yet, with the 2005 plan’s postponement of modeling and data analysis, it is not yet clear whether the vast amount of data gaps and limited modeling capabilities currently existing in the vastly complex field of California water will permit a greatly more sophisticated way of analyzing information than that used in the 1998 plan.

One aspect of the 1998 process that created a barrier to greater buy-in was a lack of transparency. One staff member said he felt DWR did an excellent job on the update technically, but because of a lack of documentation and specifics, readers were unable to understand or develop confidence in the way DWR staff gathered and analyzed data. Indeed, from the contents of the update narrative, it is not clear what the extent and scale of data and analysis for the update was, or what analytical methods were used.

**2005: Increase in Conceptual Complexity; Lack of Data Modeling**

The 2005 update included a number of innovations and changes that reflected the greater conceptual complexity that went into this plan than the prior version.

Among innovations, the update incorporated a strategic plan format with a mission, goals, recommendations and implementation plan. Additionally, the 2005 update considered a number of issues for the first time, including global climate change, the state’s public trust responsibilities, environmental justice, California tribal issues, habitat restoration, and greater consideration of water quality.

Through work with the advisory committee, DWR officials made changes to the Water Plan Update by incorporating new concepts that reflect greater complexity of thinking. One major innovation here occurred as a response to the argument by a number

of stakeholders that the plan should embody a more complex understanding of the hydrologic system, how water goes into the system, and how it leaves. The 2005 plan thus incorporated a conceptual model of a statewide hydrologic cycle, tracking the entire system of water, from clouds to soil, through natural and manmade conveyance systems, to groundwater, oceans and once again into the air. This paradigm shift can have real impacts on the ground in water management. As an example, one stakeholder worked hard to convince DWR to eliminate the phrase "water loss" in the plan. Eventually, DWR replaced it with more specific words such as "conveyance seepage," or "evaporation." Water is actually seldom "lost;" instead, it may leak out of a pipe, make its way back to groundwater, make its way back from there into the river, and appear down stream at the next city's intake system. Similarly, water flushed down the toilet in an inland town will go through a sewage treatment system and end up back in the river for the next town's or farm's use.

The stakeholder explained:

> "Huge shift. And if that goes all the way through the department, that's a huge shift. If you use the word "loss" to people who don't know, they think it can be saved and they have more water….So, yes, so that got changed. You can tell I'm very excited about it. And it's a really different way of thinking about water than "it's lost." Than somebody has done something bad. Well, it seeped, it evaporated, it went somewhere. Now do we want it to go there? Do we want to pay not to have it go there? Or maybe it's going there and we like what it's doing there. And we want to keep it going there. It's a whole different set of options when you do that."

Reflecting the new hydrologic cycle perspective, the update displayed data on precipitation, evaporation, runoff, groundwater recharge and other natural processes in each of the state's 10 hydrologic regions (as well as the data on developed supplies and water use that the 1998 update listed), with a nearby picture showing water as it moves from rain clouds to soil, rivers and aquifers, to farms, cities, pipelines and from sewage plants to rivers and oceans, and back to clouds. There were large gaps in the data DWR was able to gather, because some data, such as groundwater uses in many parts of the state, is not collected. Now, however, these gaps have been documented and work can begin to focus on filling them or developing analytical methods that account for them.

Other conceptual changes involved bringing more of an economic point of view into the update's perspective. One of the update's specific water strategies was designated for economics incentives, including not only loans and grants, but water pricing. This inclusion was a response to environmentalists and other stakeholders who argued that water is a commodity in which demand will fluctuate with price. Thus, increases in prices can be used to lower demand, an approach that can be more cost-effective than building new infrastructure.

In addition, the 2005 update better reflected the points of view of traditionally marginalized groups; of its 14 recommendations, one dealt specifically with California tribal issues, and another addressed environmental justice.

Along with these innovations, as noted above, the 2005 update did not incorporate a data modeling process to analyze its multiple scenarios and packages of responses. Thus, the report did not provide a more complete picture of the future, and future options,

for policy-makers to consider when choosing actions. This outcome is discussed in depth below, under the intangible outcome of development of agreed-upon information and shared understandings.

## Intangible Outcomes

### *Social and Political Capital*

This outcome includes participants developing a relationship with each other as individuals, as opposed to thinking in terms of abstract forces or stereotypes. It also includes the development of trust among stakeholders that allows for working out differences. With greater trust, there is development of political capital, the ability to form coalitions and work together to achieve common interests. And lastly, it includes the development of social and political networks outside the process that arise from social connections participants make within the process. These types of capital can greatly increase the ability of policymakers to reach agreements and resolve conflicts.

The widening and deepening of social networks was a benefit that most stakeholder interviewees said they experienced from their participation in the water plan process. This held true for both the collaborative, highly interactive 2005 process, as one might expect, but also for the traditionally-designed planner-led 1998 process.

**1998: Some Expansion in Social Capital Reported**

Stakeholders reported gaining contacts, deepening acquaintances, and, in some cases, gaining greater respect for other interests' points of view. Stakeholders new to statewide water resources politics described the greatest increase in social networks, but even more experienced water players said they gained new contacts. Interviewees also reported valuing their interactions with certain staff members.

"Even though there was not too much of a consensus, just by people working together for an extended period of time, I believe there was some bonding, if you may, that took place," said one.

Through the experience, one stakeholder new to the complex politics of California water said he learned ways of working with agencies and helping to resolve misunderstandings among a diverse group of staff and committee members.

Another interviewee said, through the three years of advisory committee meetings, stakeholders exhibited greater respect for each other. In the early days of advisory committee meetings, in discussing a certain topic, some members would respond to others with comments such as, "What do you know about it," assuming that a different point of view came out of ignorance. Over time, advisory committee members came to have a greater understanding of the bases for different positions.

And, for some staff, the 1998 process – the end of the process, when they had to weather a storm of criticism from the environmental community, then, the following year, interact with interest groups at the four special meetings – was their first opportunity to develop skills at dealing with the public in the context of controversy. Along with developing skills, they also came to understand and respect their critics.

One staffer said this experience led him to a major realization: he gained an understanding of why members of the public criticize. They aren't trying to be negative, he said; instead, there is something from the plan they want that they are not getting. If the state can provide that, the update is more useful. That is a very different outlook from

a more insular point of view, he said, that looks at the Water Plan as a state document done by state planners to satisfy state regulations.

Some interviewees said that the way that the process was structured enhanced face-to-face contact, helping committee members, or DWR and water districts, get to know each other. The smaller size of the 37-member 1998 advisory committee, one stakeholder who was in both said, created greater intimacy than the 65-member 2005 group. This stakeholder also felt that the two-day, off-site meeting format in 1998 worked to create greater bonds between stakeholders, because they spent extended time together, and in spaces like vans and tour sites that fostered casual conversation about issues. "When I'm in a van with twelve colleagues of mine and we just start a rambling discussion, that's probably healthier," the stakeholder said, "and you get more insight than a forced discussion on a topic around a table in a hotel conference room."

Another stakeholder, however, felt the 1998 structure tended to reinforce the consolidation of participants into unified caucuses, creating barriers to reaching consensus across interests. The 2005 structure, with task groups and breakout discussions, helped to foster cross-caucus discussion, this interviewee said.

In addition, for the 1998 update, DWR staff visited the local water districts when they were collecting data, rather than seeking information via telephone or e-mail, and this created social capital, one stakeholder said. "DWR did show a genuine effort to want to understand the local districts," this stakeholder said. "I think visiting the districts actually generated a lot of goodwill."

Another factor in building social capital was a parallel process, CALFED, which launched in 1995 and involved some of the same people in a highly collaborative endeavor. CALFED's collaborative culture was also a key influence on the succeeding water plan process.

**Social and Political Capital in 1998: Areas of Conflict**

At the same time, the 1998 process was fraught with a great deal of conflict. Among the phrases and words that came up in interviews were "desire to wring the necks of (certain people)," "game-playing," "demoralized," and "iron fist."

There was conflict between DWR's headquarters and district offices; there was conflict among some staff at headquarters; and there was conflict between environmentally oriented interest groups, both on the advisory committee and off, and DWR. There seemed to be three factors driving the conflicts: a strict deadline that had staff working long hours, and caused DWR officials to be less open-minded than in 2005 in dealing with other points of view from the public; secondly, political battles over CALFED, which the water plan update got drawn into when it was used as an informational source for CALFED decisions; and, thirdly, the internal DWR conflict, largely between headquarters and district offices.

Within the advisory committee, DWR officials were often unwilling to devote time to discussing some of the broader philosophical issues of the water plan update's approach. For example, one environmental stakeholder said he asked DWR officials to take into consideration an economic view of water, such as the marginal cost of supplying additional water to meet projected future demand (which he considered to be expensive than conservation efforts). "There was no consideration, it was never entertained, there was ever any suggestion...," he said. "And it was a frustrating experience under the leadership of the '98 plan."

The program manager did not handle such differences of point of view diplomatically, said another stakeholder. He described his impressions:

> "The final advisory committee struck me as particularly poignant – 'Why is she handling this comment from an advisory committee member in this particularly abrupt way?' It struck me that the door had been shut. And the door might have been shut for editorial logistical reasons, but the impression was 'we don't care what you think.' And I thought, that's not a farsighted way to treat an advisory committee. But it gave the impression not only that she didn't want to hear what we had to say, but the Department of Water Resources didn't want to hear what anybody else had to say because it was their plan, damn it."

A certain amount of the rancor coming out of the '98 process seemed to result from the particular historical circumstances of a political struggle among the various interests to influence CALFED's outcomes, and the interplay of particular personalities. For example, the 1993 plan used similar methods and reach similar conclusions as the 1998 plan, but generated little controversy. And people who participated in both the 1993 and 1998 water plan processes expressed greater satisfaction with their experiences in the earlier process. "I thought '93 was better in terms of outreach to all stakeholders inside and outside of government. Let's just leave it there," said one staff member. While a heated conflict did develop between DWR and a prominent environmentalist during the 1993 process (a conflict that lasted until the 2005 process), another environmental stakeholder said DWR leaders really listened to all members of the advisory committee during the 1993 process.

**2005: Deeper Interaction Produced Greater Trust and Respect across Interests**

The greater amount of interpersonal interaction that occurred through the 2005 process allowed more opportunity for stakeholders and staff members to work with each other and learn from each other. At the same time, the large size of advisory committee plenary meetings created less intimacy than the two-day, off-site meetings of the much smaller 1998 advisory committee. While some interviewees found the 2005 plenary sessions valuable, most found work undertaken in workgroups, workshops and small table discussions to be more effective for getting to know other points of view and wrestling with the challenges of the issue at hand.

In their early meetings, many stakeholders were cordial, but initially distrustful of the process. They gradually began to open up when it became clear that facilitators would make sure everybody played fair, one interviewee said:

> "There were a lot of people with this baggage and background information about how past processes had been fractured with the three groups [agriculture, urban and environment] going in different directions…So they'd take the entrenched positions. And to bring them out, and get them to start to relax and know each other, and be personable, and a little more light about conversations..., and talk in a more open sort of brainstorming mode, was an evolution over time....So I think they opened up more and chose to stay involved more than they might have otherwise."

As participants got to know each other, some of the stereotypes began to dissolve. As one stakeholder described:

> "I think one of the things that happened in this process is, I and others who had been categorized on one side of the fence or the other – environmentalist or farmer or whatever – because of the length of time we spent in each other's presence and the sidebar comments we got into and the discussions…. People would go, 'Oh, so there's more to this than that.' Like when I would hear environmentalists say, 'We need more water transfers,' my first response would be, 'So you want to steal it from farmers, right? You want to use the regulatory arm to twist an arm, make them sell.' 'No, no, no, that's not what we want. We want to keep the farmers in business.' 'Well, show me where you're doing that.' 'Well, here's what we did with these guys.' 'Oh, okay, well, that's not bad.' The educational process was both ways, and we were able to set aside and learn from each other, and I think we have a healthier respect for each other's intellect. Because of that, we much less need to fall back on stereotypes…to dismiss people's ideas."

While stakeholders developed greater respect for others' views, interviews and observation turned up only a limited amount of social connection developed across conflicting interests – for example, between environmentalists and agricultural interests. I specifically asked interviewees about the extent of cross-caucus interaction, and some mentioned occasional e-mails or contacts with certain individuals (an agricultural stakeholder e-mailing an environmental justice stakeholder about an agricultural forum independent of the water plan process, for example). At 2004 and 2005 advisory committee meetings I attended, I observed one cross-caucus conversation, during a break between one agricultural stakeholder and an environmentally-oriented government stakeholder.

Stakeholders representing less traditional interests, such as environmental justice, local government and tribal government, who chose to or managed to stay involved in the process reported the greatest expansion in social networks. Many other stakeholders had already developed substantial social capital in other venues, such as CALFED. Still, longtime participants reported observing continued increases in trust and respect.

One environmental justice stakeholder new to California water collaborative processes gave examples of how the 2005 process enriched his social relations in the water community. He said he feels that the state water community as a whole remains exclusionary, but the water plan process made large strides in opening doors, probably because, as a general planning process rather than an implementation program, the stakes were not as high for insiders. Because of his involvement in the water plan, he was asked to serve on a State Water Resources Control Board task force. A DWR official introduced him to somebody deeply involved in negotiations over the Klamath River controversy, and through those conversations he gained respect for out-of -process negotiations, and developed contacts with different people in different parts of the state. When a former chair of the State Water Resources Control Board and leader in environmental water died, he was there when DWR Director Lester Snow spoke at her funeral. The stakeholder described his experience:

> "His remarks on appreciating her contributions to water discussions touched me really personally. And I could go up to him and say, 'Really, thanks for saying that.' So, the water community is this very ingrown sort of thing, and people have known each other for years and years, and there are some people who haven't been in those discussions, and the water plan actually reached out to some of those. So it's been an interesting process."

DWR's effort to be open-minded and respectful of previously marginalized stakeholders' ideas helped win the trust of environmental interests who were alienated by the 1998 process, interviewees said. Many stakeholders who had grown to trust the process specifically mentioned their respect for and trust of Program Manager Kamyar Guivetchi as a key factor. The 2005 process, unlike the 1998 process, one environmental stakeholder said, "was driven by open-minded people who did not look at the environment as a side thing, were not institutionally beholden to sort of the old way of doing business."

One example of the greater social capital between DWR and environmental interests is the evolution in relationship between DWR and an environmentally-oriented water expert. Through the 1993 and 1998 processes, the expert's organization had regularly clashed with the department over policy issues and produced reports critical of DWR's handling of water matters. There were conflicts in particular between the expert and a leading DWR planning official, which some observers said became personal. One DWR staffer described the gradual turnaround in the relationship between the expert and departmental officials. "I would say a lot of movement happened." said the staffer. Certain DWR staffers made an effort to be available to the expert's organization to provide information or analysis. Over time, the staff member noticed that criticism in the expert's reports became more civil. "And I would say that the last set of comments that we just received from them on the public draft of the Water Plan are the most civil and constructive criticisms we've ever received from them," he said in the summer 2005 interview.

(The comments begin, "We applaud the efforts of the California Department of Water Resources and its staff... we consider (the plan) to be a significant improvement over previous plans... Please consider the comments below to be constructive criticism...")

The time stakeholders spent working together helped reduce their stereotypes and increase understanding. Stakeholders representing interests that had historically been excluded from the statewide water conversation talked about being taken more seriously as individuals and interests, and at the same time beginning to take others more seriously, as well.

For DWR staff, the 2005 process marked a dramatic change in the way they did business. The impacts to staff, including increased social capital, are discussed in the section on below on institutional capacity.

**Social and Political Capital in 2005: Areas of Conflict**

Although the above examples show development in social capital, and while many stakeholders embraced the new process, there were some areas of conflict. Some traditional water interests, such as some of the agricultural stakeholders, felt marginalized. And the 2005 process got off to a bumpy start within DWR, as staff

members encountered a new way of doing things and very different philosophies. In addition, the process initially had high stakeholder turnover.

While the 2005 process was more inclusive for environmental stakeholders, some, but not all, agricultural stakeholders were dissatisfied with the 2005 process, particularly under the Davis administration, which was more sympathetic to environmentalists than Republican administrations had been.

One of the greatest conflicts within the 2005 update process centered around one agricultural stakeholder. He reported feeling shut out by DWR in this process; he said he felt heard by the lead facilitator, but not by DWR officials. "It was quite evident from early on the Department of Water Resources already had their minds made up on basic issues, and that no matter how much you discussed them, or whether people agreed or disagreed, these things were going to happen or not happen," he said. DWR, this stakeholder said, expected that more water would be needed in the future for the state's urban areas and environment. "And the way they were going to do that then without having any new dams was to just take the water away from agriculture," he said, reflecting an often expressed view among farmers.

DWR officials said they tried to satisfy agricultural stakeholders that they were carefully considering their views, but argued that they could not make headway with this one stakeholder.

A dynamic developed within the advisory committee in which this agricultural stakeholder repeatedly expressed dissatisfaction with the direction of the plan and argued for changes. There was greater diversity of points of view among members of the advisory committee's agricultural caucus than in any of the other caucuses; some of the other agricultural stakeholders in interviews expressed sympathy with this point of view, while another was strongly opposed. Stakeholders from other interests, particularly the environment, tended to disagree with the stakeholder and said they grew tired of listening to his repeated complaints. A tension appeared to have developed between the stakeholder and DWR officials; at one observed meeting, the facilitator intervened on the stakeholder's behalf to clarify what he was expressing, to support the validity of what he was asking for, and to ask DWR to respond. In interviews, this and some other agricultural stakeholders questioned whether the 2005 update complied with legislation, called the Matthews Bill, which calls for it to include scenarios in which California agricultural production continues to provide 25% of the country's table food. This agricultural information was not in the update; it was supposed to be provided to DWR by the state Food and Agriculture Department, which didn’t allocate funding to complete the study.

Another challenging arena arose at the start of the process, with some DWR staff feeling that Center for Collaborative Policy (CCP) facilitators and Guivetchi came in with negative opinions about the staff and their prior work. Some staff felt they were unfairly stereotyped as entrenched bureaucrats resistant to change. There was confusion among staff about why CCP facilitators were running staff meetings and assigning staff work. These relations generally improved as the parties got to know each other, DWR staff came to understand collaboration, and facilitators and Guivetchi became more acquainted with previous staff work.

At times, particular actions by DWR or state leadership created distrust among certain groups of stakeholders. There were two particular incidents. In October 2003, on

the eve of the recall election, the Davis administration released an early update draft to the press, but not to advisory committee members. And in January 2005, the Schwarzenegger administration produced an update summary near the end of the process that emphasized the report's infrastructure recommendations over water conservation recommendations. The first incident irked many agriculture and some urban stakeholders, who expressed concern that DWR Deputy Director Jonas Minton was biased toward environmentalists; the latter action provoked opposition from environmental stakeholders, who had less sympathy from the new Republican administration.

Lastly, there was a great deal of stakeholder turnover in the 2005 process. Partly, this can be explained by the larger size of the advisory committee, and the fact that many nontraditional stakeholders, with fewer financial resources and institutional stability, were invited to participate. Interviews for this report were focused on gaining in-depth information about the workings of the process, and so were solicited from individuals who participated for the bulk of the session. However, a certain amount of information was gleaned from these interviewees about stakeholders who dropped out. For example, one environmental justice stakeholder interviewed joined the process as a replacement for another who "was upset that this process wasn't going to go anywhere, that it was the same old stuff that had been happening in California." While the committee had four slots for California tribe representatives, few attended regularly. One California tribal representative was frustrated that he was not able to get others in his tribe, or environmental officials from other California tribes, interested in the state water plan. The environmental officials from other tribes "looked at it also like my tribe did, that it really doesn't relate to them, and all this is just so technical, and so forth," he said. In addition, a DWR staffer said, some stakeholders representing traditional water points of view found the collaborative too frustrating in its heavy workload, slow pace and emphasis on process. "And so some of them faded away from that lack of decision-making…just too much talk and consensus-building, but no decisions, and they wanted to see more boom-boom-boom, move forward," he said. He estimated that 20-30 stakeholders present at the start of the process left through retirements, job changes or dissatisfaction. Generally, they were replaced by others more interested in remaining through the process.

Some stakeholders remained in the process despite dissatisfaction, choosing to continue doing their job and defending their interests. Said one agricultural stakeholder:

> "I think what they were seeking to do with this type of a discussion or whatever you call it was to let other people think that they were part of the development of the book and that has its political purpose, I understand that. It's kind of covering for what you're doing. But it doesn't seem to generate anything except loss of time."

### *Development of Agreed-on Information and Shared Understandings*

Innes and Booher (1999) argue that collaborative planning helps stakeholders build "shared intellectual capital, including mutual understanding of each others' interests, shared definitions of the problem, and agreement on data, models, projections, or other quantitative or scientific descriptions of the issues." Such knowledge "helps to coordinate action, and reduces areas of conflict." The development of intellectual capital

between staff and stakeholders was limited in the 1998 process because of time constraints and an apparent unwillingness to consider non-traditional views. The 2005 process allowed for far greater interchange and participants developed greater respect and depth of understanding of different views. Still, a key area of disagreement led participants to complete the plan without any data modeling.

**1998: Deadline Pressures Limited Deeper Conversations**

Overall, the 1998 process allowed stakeholders to learn a great deal about California water issues and more about each other's point of view, but development of intellectual capital between DWR officials and stakeholders seemed limited by what advisory committee saw as a personal or institutional closed-mindedness on the part of DWR.

Among benefits of participating in the 1998 process, interviewed stakeholders frequently mentioned the greater depth of knowledge about California water that they took away from their involvement. Some stakeholders said they really appreciated having the opportunity to learn so much from the staff, the update and others on the committee. "And so it was tremendous for me to go through that very educational narrative that was being put together to see what the numbers looked like… and to see what kind of stuff was behind the numbers, which was not much," said one.

In the 1998 process, planners' need to meet a strict deadline – Governor Pete Wilson's office insisted that the plan had to be complete by the time he finished his term in December 1998 – prevented them from having the leisure to explore new concepts. In addition, in this planning process, as in many traditional planner-led processes, planners got together at the beginning of the process, established the procedures and methods they would undertake, and created a detailed timeline. Establishing a course early on and sticking to it is an efficient way to do work, from the standpoint of meeting a deadline. However, this method can often result in a lack of openness to new paradigms or concepts. Once underway, bureaucrats can be unwilling to change course or reframe when presented in the midst of the process with new information. Therefore, the window of opportunity for innovation and conceptual reframing is often open only in the early days of the process. As a result, the produced plan is often less successful in reflecting changes and innovations that have been occurring in the world around the planners.

Interviewed advisory committee members felt they had a limited ability to influence DWR officials, who seemed closed-minded to some of the new paradigms that were raised at meetings. Interviewees discussed several concepts that DWR officials seemed to be unwilling to consider, including viewing water through an economic lens (considering the effect of changes in price or calculating the marginal cost of creating additional supplies); reflecting uncertainty when projecting the future; considering environmental objectives beyond those mandated by court decisions; incorporating evaluation of water quality; and shifting from requirements-based to reliability-based planning (a newer method that can account for uncertainty and provide decision-makers with a range of options).

There was a limited extent to which DWR officials engaged with advisory committee members on philosophical and broad water planning issues. "The advisory committee was more there to provide information, to kind of fill in the structure that DWR was putting into place," said one stakeholder.

For DWR, an official said, the advisory committee served as a reviewing body to provide more information, make sure the update's information was clearly presented and give a sense if the information and point of view seemed reasonable. "Does it make sense for your constituency? Do the answers look roughly right, so to speak? So it was more, the chance to bounce things off of them…. For example, here's the historical information on how much water recycling has been done, here are all the agencies we could find that have plans for doing it, and here's how the numbers add up, is this roughly consistent with what you think is going to happen?"

This approach to the advisory committee limited DWR's opportunity to incorporate differing views of the world into its work.

Bringing more economics into the analysis was particularly important for stakeholders from a variety of interests. "I could summarize that kind of experience by saying that there were some major shortcomings of the methodology that the DWR wasn't prepared to cope with, so you get these repeated criticisms and conflicts and no resolution," said one stakeholder. Another stakeholder said:

> "It was frustrating for quite a few of us. In '96, just the notion that we're trying to equate some savings to conservation, it was a great discussion, but I don't think – either the information wasn't necessarily ripe yet, or it just was one of those things that the Department just didn't want to open Pandora's Box yet."

DWR did start out the 1998 process delving into deeper discussions with the advisory committee on major issues, including how much of a contribution water conservation could be expected to provide, how to calculate water dedicated for the environment, and how to consider groundwater overdraft. "In the beginning, they tried to come back a couple of times and get consensus," said a stakeholder, "but there were other things that nobody knew, and it was obvious we could not get consensus."

While there were no breakthroughs to agreement, one business stakeholder described developing greater respect for the viewpoints of an environmental stakeholder through his involvement in the advisory committee:

> "One thing that sticks out in my mind was there was a gentleman.....It was really the first chance I really had to meet him and to kind of hear his views. And one of the things that I think was surprising to a lot of – well, some of us – was how much in agreement I was with him in the sense that he wanted – and I think his position is to treat water as a commodity..... And in large degree you need – if you're going to start dealing with public projects and public financing and try to figure out – either you treat it as a subsidized resource or you treat it as a commodity and you try to work through the economics. And that was a great discussion we had."

Debates were enhanced, one stakeholder said, by the size of the advisory committee, which allowed the entire committee to sit around a table during discussions facing each other, and for the whole committee to have interchanges with staff on specific issues.

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**2005: Increased Understanding, Agreement on Definitions, Concepts**

In considering what participants learned from the 2005 process, interviewees mentioned such gains in intellectual capital as increased ability to understand others' interests and points of view, greater agreement on definitions, a refinement of stance based on new information, and agreements on data and scientific information.

The purpose of the 2005 collaborative process, participants were told by DWR leaders, was to produce a report on "the 80% that we can agree on." "Nobody was really forced to do any sort of interest based bargaining, if you will. We were really basically accreting, if you will, the various interests, to an overall whole," said one facilitator. What stakeholders could agree upon was incorporated into the update; a separate document was produced at the end of the planning process, explaining areas in which there was disagreement among stakeholders, or between some stakeholders and DWR.

This process of accretion had a variety of implications for the amount of shared learning and understanding that developed in the process. On the one hand, there was not the type of nitty-gritty, deep work to resolve conflict that one might see in a negotiated agreement process. Perhaps an indicator of the absence of such types of deep consensus-seeking was that several interviewees expressed chagrin that their adversaries had not altered their positions through the process, or that there had been an insufficient amount of forums that would have offered a better chance of convincing their adversaries to change position. This positional, as opposed to interest-based outlook could more easily be maintained through an accretion type of process such as this one.

On the other hand, such intense involvement with fundamental conflicts can also open the door to greater alienation and frustration. Because they were looking toward the future and considering general policies, without the rubber ever needing to hit the road, they were more willing to approach the project with goodwill and understanding. As one stakeholder said, "In this business, 'Process brings us together, projects drive us apart,' and there's a lot of truth to that as long as you're not talking about a specific project. You can find a lot of commonalities."

In processes such as the water plan update, another stakeholder said, advisory committee members want to accomplish something, and want to be able to say that they contributed to making a better report, even if they don't necessarily agree with everything in it. "So I think the sense of trying to accomplish something is very strong, in these processes" compared to other process where the stakeholder would strategize about "how I could go in to kill this, or how I could go in to make sure it doesn't happen."

Intellectual capital gains included:

<u>Ability to Understand and Account for Others' Points of View</u>

In discussions at observed meetings, some stakeholder comments revealed a comfortable acquaintance with and accounting for others' points of view. Stakeholders came to understand others' points of view well enough that they would take them into consideration at times when those stakeholders were not present ("Stakeholder X would

say..."), or they would preface their remarks with a nod to those who differed ("I can hear Stakeholder Y's eyes rolling..."). Sometimes an advisory committee member would try to help another stakeholder of an opposing view communicate his or her statement ("... what I think Stakeholder Z was getting at..."). Such examples seem to reflect a certain degree of comfort with diverse and conflicting perspectives.

Shared Understanding on Definitions and Concepts

Most interviewees said they observed participants evolving their understanding of certain important concepts, or beginning to appreciate that others might bring different paradigms or frames of reference to the same word or concept. Through the work of facilitators, who were able to spot areas of misunderstanding and ask for clarification, and through the more focused discussions in workgroups, people were able to get in-depth enough to realize that they were sometimes approaching issues from entirely different conceptual frameworks. More than one interviewee mentioned how this happened around the complex topic of water use efficiency. In the past, interviewees said, experts on the subject would often talk past each other without realizing they each held a different frame of reference, and thus, were each talking about different things. For example, one staffer noted, efficiency can mean one thing to a planner from a local water district: conserving water is effective at that local scale, because the saved water can serve a growing population in a city. But such efficiency may not mean anything to a statewide water planner, because all of that city's used water goes back into the river and is used by the next city downstream, so nothing is saved. Different perspectives such as these got fleshed out in the detailed workgroup discussions.

Similar types of discussions helped DWR officials understand how important water quality is for local water districts, and helped DWR, Northern Californian and Southern Californian water district representatives help understand key differences in how groundwater basins operate in different parts of the state.

Policy-Related Learning and Belief Change

In at least a few cases, stakeholders modified a stance after getting more information. An example of this was the discussion over regulated deficit irrigation (RDI). This is a means of reducing water to crops by stressing trees or vines at particular stages. While it has been used largely as a production management practice, pro-environment staff and stakeholders were initially advocating the practice as a strategy that could save large quantities of water. After presentations and discussions, later drafts of the plan eliminated language to this effect, with emphasis on further study of the technique. Said one environmentally oriented stakeholder:

> "…Just by understanding and talking through an issue, like regulating deficit irrigation, once you understand what that means from the perspective of somebody who has practiced it, who knows how irrigation is conducted in different regions in the state, you have a much better appreciation of where it might be applicable, what the shortcomings are. People might be a little less hard-line about pushing particular solutions like that one."

Agreement on Data, Models, Quantitative/Scientific Information

Working together, DWR and the advisory committee agreed that, if feasible, the update would:

- Use real data instead of normalized data for existing conditions
- Use multiple years to represent current data: a normal, dry, and wet year.
- Represent current conditions through the entire hydrologic cycle, rather than just develop supply and use data
- Use multiple future scenarios
- Develop scenarios for multiple future years

This greatly increased the complexity of the state water plan's conception of the future. There would be multiple years to envision; there would be multiple climatic conditions for each of those years; and there would be multiple scenarios to develop for each of those years in each of those climatic conditions. These approaches, often developed in collaborative processes, were aimed at doing a better job of modeling the possibilities of a highly uncertain future and teasing out potentially unforeseen implications.

Limitations: Unresolved Differences over Data Analysis and Presentation

Despite these agreements on principle, there remained little agreement on the specifics of how DWR should proceed for the next update and beyond in estimating future demand and supply, and evaluating actions to improve the water supply. For example, DWR and the advisory committee never reached consensus on the specifics of how to undertake analysis of the future – they never agreed on which analytical tools to use, or evaluated the adequacy of data. The update listed this task as part of its action plan for the next update.

To be an effective predictor of the future, the plan needs to come up with a system of modeling to integrate supply and demand data and evaluate the effectiveness of the update's extensive list of water supply strategies to solve potential shortages. At least one stakeholder with expertise in modeling was concerned that DWR did not have enough resources and expertise to solve the quandary of how to create a sufficiently sophisticated way of analyzing and modeling the world's most complex water system. The problem is challenging, because quality data is scarce and there are not sufficient resources to get adequate information. Many stakeholders were unhappy with the computer models and methods of analysis that DWR had used in past water plan updates, but no other sophisticated modeling tools currently existed. Some DWR staffers would have preferred to use the best available tools to get some kinds of numbers, even if those numbers were weak, feeling they were better than no numbers at all. An additional complication was that this area of discussion, while absolutely central to the production of an update, was so technical that most stakeholders could not participate in discussions about it. In fact, the technicality confounded even members of the modeling workgroup. As an Oct. 2005 report to the advisory committee from a DWR consultant noted about the modeling group:

> "A significant barrier to reaching agreement about specific computational methods is an insufficiently developed *shared understanding* of how the California water management system works, and how it responds to changes. When there is a technical disagreement about a model or parts of a model, we rarely have a productive discussion that leads [to] resolution. Discussions tend to be vague. The only approach effectively applied to resolve technical

disputes has been to pay experts to conduct a scientific review. This is both expensive and slow. It would be much better to have a process for simultaneously improving the conceptual understanding of California's water management system and its representation in the analytical tools we use."

Whether this collaborative process achieved any agreement on the core technical challenges of the water plan – finding ways to effectively predict the future – and paved the way for improved data analysis remains to be seen.

While some water plan stakeholders were satisfied with no data analysis in the 2005 update, achieving a consensus on data, science and models was possible. Other collaborative processes have at times succeeded in making breakthroughs in the area of science and data analysis. For example, participants in the San Francisco Estuary Plan agreed upon a simple, yet scientifically nuanced, indicator for the ecological health of the bay -- a salinity index (Connick and Innes 2001), and CALFED's bringing together of water system operators, scientists and advocacy groups created enough trust and shared understanding, through methods such as detailed modeling games, to create a new system of cooperative, real-time management of Delta export pumps (Hudzik 2003).

### *End to Stalemate*

Although stakeholders developed greater understanding about each others' points of view and developed more complex views of the issues, neither process created breakthroughs in the major impasses that exist in California water policy, such as the impasse over dam building, and over exporting more Delta water to the south. No interviewee was able to recall seeing any changes or evolution in positions on these or other significant policy issues among any stakeholders.

### *Institutional Change*

#### 1998: A Time of Continuity

The 1998 process incorporated no significant institutional changes at DWR, aside from those instituted by the incoming administration in response to concerns by environmentalists and others opposed to the 1998 update's content.

#### 2005: A Time of Major Changes

Institutional changes at DWR's planning division during the 2005 process included a greater institutional focus on disadvantaged communities, a shift to matrix management, and changes brought by collaboration, which included developing a transparent work process and staff working jointly with stakeholders.

Through the 2005 process, DWR developed a desire to achieve better communication with environmental justice and California tribal communities, which manifested the allocation of staff resources to that goal; the department added a staff position dedicated to conducting outreach to these communities. The dedication of staff time may allow future plans to be more sensitive to and reflective of these communities.

The 2005 water plan update process brought great change to DWR's planning program. For many, it was wrenching change. Departmental staff went from working primarily with information to working to a much greater degree with people; working with knowns to working with unknowns; having a set schedule to having a constantly changing schedule; being in charge to sharing power with a motley collection of 65

people including water districts, lobbyists, activists, farmers and tribes. They were not given training on how to do this; there was very little time for preparation before advisory committee meetings began.

Suddenly, they were working in an entirely new culture. This took some getting used to. In my 2005 interviews with headquarters staff, they indicated that there have been a wide variety of responses among the many staff members involved in the plan. One staff member said:

> So I think that it's been bad for some DWR staff but I think it's been good for some of the others. A lot of the DWR staff – at the beginning of this process I understand felt, 'What was wrong with the last process? This is how we've always done it. Why shouldn't we continue?' And so I think a lot more of them are now willing to do something different. It's still not an easy position for them to be in. A fair number of the old staff I think retired and moved on...."

Some staff members said they had enjoyed the opportunity of working with other bright people with different points of view, and the experience of learning from each other. Others expressed concern that, because many of the advisory committee members are lobbyists, the update could lose its credibility as a professional, objective document. In the past, the staff had been shielded from interacting with the public to a large degree. Now, they were appearing before the 65-member committee, or sitting at tables with stakeholders. In addition, in an effort to achieve transparency, they had to explain their work, work with others and compromise, both with the advisory committee and in their work teams. These were new experiences that staffers were initially apprehensive about. "Whenever you open yourself up to public scrutiny, there's just a natural anxiety with it, and then also, not knowing where this is going to take you, has natural anxiety," one staffer said.

There were procedural frustrations with the new way of doing things, some caused by the fact that this process was jumpstarted with little planning and preparation. For example, instead of meeting together in planning out the tasks they would undertake for the update, staff had to wait for the advisory committee to decide what they should do. Waiting for months for the advisory committee to reach consensus was particularly frustrating. Said one staff member:

> "I know that some of the folks that were results-oriented – you had to be comfortable with the process-oriented process, to not be as disturbed. If you wanted to see results generated, then, this wasn't your ideal situation, and some of the folks…they just became resigned. So those are the changes I saw."

Staff members also had to get comfortable with revising their work upwards of 10 times. One staff member joked:

> "I never actually physically threw anything. You know, you work hard, a bunch of comments come in and your first reaction is, 'God, I'm dealing with idiots.' And then you look at it again and say, 'No, now I understand what they're saying and, yeah.'"

Some staff members said they enjoyed having the opportunity to develop people skills:

> "Actually, I wish I knew some of these things – it would have benefited me a lot in my last job. Working with people and facilitation skills and people skills that I didn't have very much of or a good understanding of put me in some awkward situations in different meetings."

In addition, other changes were made at the same time to the planning program. Guivetchi preferred matrix management – in which work is done through teams of people from different departments – to vertical command-and-control, so he organized staff into work teams to undertake the various update tasks. This required members of each work team to get together and agree upon, for example, a single method of collecting and analyzing data. In the past, staff at different district offices had taken different approaches to the data. Guivetchi also sought to transition the program's oral culture into a documented one, because when he started, there was little documentation on the procedures that had been used to create the update.

With the changing direction of the update, DWR was not only changing internally, but was on the road to evolving a different way of using the water plan and interacting with regions and local districts. DWR was sharing data through the Internet and reaching out to other water resource organizations and local districts, to work with others to enhance integrated resource planning around the state. There was a continued push to continue this process of State Water Plan evolution; the Schwarzenegger Administration's California Performance Review, prepared by a group of 275 state employees in 2004, recommended that his office and the Legislature update the concept of the Water Plan, arguing that it was "uniformly criticized" for not meeting local and regional needs, and was coordinated neither with local planning processes nor state infrastructure planning.

One stakeholder, commenting on the achievements of the 2005 process, said:

> "I would hope that what they are setting in place…will really facilitate doing comprehensive local and regional water management planning. They're sharing information and really making a bigger effort to not just collect information but kind of help develop protocols and formats, and the type of information that people can access and use. I think that's important. And I'm hoping that that's going to continue to happen."

### *Learning and Change beyond Original Stakeholders*

Researchers on collaboration have observed ripple effects as collaborative culture spreads, influencing other individuals, institutions and policy or conflict resolution efforts. As the 1998 plan involved the continuity of practices, rather than the introduction of new cultures of governance, I will not address it here. While it is too early to fully assess the impact of the 2005 state water plan collaboration, interviewees mentioned some possible effects worth noting. Because collaborative culture is already strongly developed in the arena of California water resources, the following effects may have

resulted from other efforts, the general growing trend in collaboration, or Schwarzenegger's decision to bring on Lester Snow, former executive director of the collaborative CALFED process, as director of DWR.

While in the past, the water plan had little impact on other divisions within DWR, there were indications that the situation was now different. The department updated its strategic business plan in 2005, and one item was reflective of the Water Plan Update's recommendations – emphasizing DWR's role in providing technical assistance, planning and advice to local and integrated regional planning efforts.

Secondly, Snow had been asking department officials to consider what the new directions in water policy entailed in the water plan mean for DWR as a department and the way it did business.

The Administration was also seeking to have other state departments, such as the Department of Fish and Game, the state water board, and Cal-EPA, involved collaboratively in helping to develop the next water plan update.

Possibly related to the impasse over how best to undertake state water plan modeling and data analysis, there was growing interest in developing an independent and collaborative effort to plan and design an approach to new ways of using data and modeling to increase the sophistication of analysis and capture the complexity of statewide water issues. An independent modeling group that grew out of Bay/Delta issues, the California Water and Environmental Modeling Forum, produced in September 2005 a strategic analytical framework for California water.

# Conclusion

In the large and multi-disciplinary literature examining collaborative planning, very few empirical studies compare actual examples of collaborative and traditional planning processes. Our study attempts to address this void by comparing two iterations of a statewide planning process required by law to occur once every five years. The most recent process, completed in 2005, employed professional facilitators who led a diverse 65-member advisory committee through 200 meetings and workshops over five years in an effort to identify consensus recommendations. The prior process, completed in 1998, employed a smaller, less diverse advisory committee that provided feedback to the lead state agency—the Department of Water Resources (DWR)—with only a limited effort to reach consensus, and without any expectation that the agency would attempt to accommodate all competing interests.

Our experience conducting the study suggests that seemingly straightforward comparisons such as this are more difficult to implement in practice than in principle. In practice, a number of issues limit the comparability of the two cases and our ability to identify the structure of each process as the proximate cause of observed differences in outcomes.

## The Plans as Outcomes

Nonetheless, our findings confirm that the two processes produced strikingly distinct planning documents that garnered very different reactions from the public.

The 1998 process produced a three-volume update based on data modeling and a technical “gap analysis” of current water supply and demand, and, for the first time, quantitatively evaluated various water management options to address the estimated

shortage of up to 5 million acre feet per year. The plan was completed on time and satisfied all legal requirements. While the plan avoided making recommendations, its dire scenario of the future created an atmosphere of urgency helpful to those advocating construction of new dams and canals. However, methods used to produce the document lacked transparency. Policy opponents criticized the plan for its pro-construction paradigm and argued that it was based on questionable assumptions and models. Strict enforcement of the mandated deadline encouraged DWR to close discussion to the plan's general approach and to broader philosophical issues, which limited the conceptual depth of the plan, hampered its innovation and left a sizable constituency of stakeholders feeling as though their concerns had been dismissed, which undermined confidence in the agency.

The 2005 process produced an update in five volumes, designed as a strategic plan with 14 policy recommendations and action items. The plan considered a host of new issues not discussed in the 1998 document, and reflected far greater conceptual complexity regarding such things as hydrologic cycles and future uncertainties. With the publication of this update, DWR embraced integrated resource management, began to account for global warming and took greater account of economics. Although some parties were unhappy with the plan's final content, all interviewed stakeholders said they felt fairly treated by the lead process facilitator. The process allowed for differences of opinion to be far more thoroughly aired and examined than had been the case in the last process. On the other hand, the 2005 plan was completed two years behind schedule and failed to satisfy certain legal requirements. Moreover, DWR and the advisory committee were unable to agree on a replacement means of estimating future water supplies and modeling supply and demand projections to evaluate the effectiveness of future water management options. While advisory committee members achieved agreements in principle regarding the proper scope of such an analysis, they could not agree with DWR on specific methods and models. These issues have been left on the table for the next planning iteration.

For all its technicality, the 1998 water plan arguably served a "sound bite" function for a Republic governor committed to augmenting water supply through public works projects. The underlying message of the 1998 plan can be summarized as "We've quantified the water shortage. Here's how big it is. And here's a list of projects that can be built to close the gap." The 2005 plan presented a more subtle, complex, and arguably more accurate picture of the state's water challenges and options. Its message may have been harder for politicians and journalists to digest and condense, but its content may prove more useful to water managers around the state.

## Social, Cultural, Intellectual and Institutional Outcomes

Beyond the plans themselves are the less tangible products of the planning processes. The collaborative planning literature has noted increases in social, political and intellectual capital arising from consensus-building processes, as well as policy innovations, high-quality agreements or products, and learning and change in institutions and participants.

The literature has not generally assessed the extent to which these outcomes arise from non-collaborative processes. The information gathered here shows that such processes can achieve some development of social and intellectual capital, as well.

Among the observations made about the several-years-old 1998 process, participants reported getting to know each other and DWR staff better as they spent time together in small groups, which allowed for in-depth debate. A business representative was surprised to find he had common philosophical ground with an environmental representative, and both could push for introducing more free-market mechanisms into water policy. So while we have more evidence of such outcomes in the 2005 process, participants in both processes reported gaining new knowledge and social networks.

Our study affirmed observations in the literature about collaborative processes; interviewees provided evidence in the 2005 process of developments in social, political and intellectual capital beyond those previously attained from earlier collaborative processes. Furthermore, the greater transparency, professional facilitation, open-mindedness and consensus-seeking nature of the 2005 process engendered greater civility and respect between DWR and environmental advocates and allowed state and local water officials to deepen their understandings of each others' worlds.

In addition, a significant outcome of the 2005 process was that its large size and inclusivity afforded new access to historically marginalized stakeholders such as California tribes and environmental justice communities.

Also affirming observations noted in the literature, the 2005 collaborative process catalyzed institutional change at the Department of Water Resources, perhaps its most important outcome. In this sense, some interviewees saw 1998 as the last gasp of the era of gap analysis and facility construction. They saw the 2005 process as hastening DWR's transition into the new era of integrated resource management, which the state's largest water districts have been doing for at least 10 years. The 2005 process ushered in a dramatic, though as noted sometimes challenging, era of institutional change. DWR opened itself to fundamentally rethinking the methods and purposes of the state Water Plan Update, and in that process realigned not only the document but also state water planning as a function, as the department reoriented itself to a role of working with regions and local water districts as an information provider and facilitator. As one stakeholder put it:

> "You have a whole building over there full of people who are in an organization that was a construction agency, whose origins – cultural origins, if you will, were to build stuff and to plan to build stuff. And you see that in the [1998] Water Plan. And I think that's probably the biggest contribution of the 2005 draft, and it's a tremendously positive one, to really break that."

Given our exploratory research design, we cannot say to what extent the collaborative design of the 2005 process was a cause or effect of DWR's cultural transition, but most likely it was both.

The 1998 process did not result in institutional change, except perhaps as an unintended byproduct, as the department later made changes to respond to the chorus of criticism. In the 2005 process, on the other hand, leaders consciously sought to change institutional culture.

## The State Water Plan Update and the Literature on Collaboration

These two on-the-ground examples did underscore some common arguments found in the literature on collaboration versus traditional modes of planning. Indeed, each process, to some extent, validated some commonly held views: the traditional planning process complied with deadlines and produced a product that went further in meeting more detailed legal requirements and was cautious when it came to making policy recommendations. The collaborative process, on the other hand, was much longer and more resource-intensive. Its product did a better job of meeting conceptual rather than strictly legal requirements and took stronger policy stands.

And our cases underscore also a collaborative challenge noted in the literature, that tension that exists between being inclusive versus being effective. The 1998 process, involving a smaller group of public participants, allowed for some good discussions at two-day off-site meetings when advisory committee members spent time with each other in vans or at the dinner table. The more highly involved participants of the 2005 process found workgroups the most effective part, because people could really get to know each other and could engage in in-depth discussion. At the same time, of course, these smaller groups, requiring a greater time commitment and greater exposure, tended to involve a smaller circle of deeply involved people; the less traditional representatives were underrepresented. This tension between inclusion and depth of involvement is inherent in any decision-making process, and finding a way to allow for deep discussion while truly involving historically marginalized groups, such as Native Americans, will remain an elusive task.

At the same time, the later consensus-seeking process did not provide further evidence for those concerned that collaboration may harm the position of environmental, public interest or tribal stances. The 2005 process went much further than the 1998 process in being sensitive to and incorporating these less traditional viewpoints. Specific plan recommendations were aimed at tribal and environmental justice issues, and the plan as a whole showed more understanding of environmental perspectives. As a result of the process, DWR created a staff position to focus on outreach to tribes on water issues. These outcomes of dedicated staff attention, presence on the advisory committee and focused content in the plan would not have happened without the turn to collaboration. The 1998 plan did not address environmental justice, tribal arguments or public trust arguments at all. While representatives of these groups may prefer far greater changes before wholeheartedly endorsing the plan's language, there is no denying that a shift in content did occur. This may be because collaboration was not introduced into the state water planning process by pressure from grassroots activists opposed to environmental laws; instead, it was introduced by an environment-friendly administration, against a policy background in which collaboration has served to help build bridges over divides between system operators and environmental regulators. (Despite the extensive efforts by the facilitation team to conduct outreach and provide financial assistance for those needing it, it should be noted that tribal representatives and environmental justice advocates still do not have an equal place at the table in the water plan process, because of myriad historical, political and capacity factors.)

Only time will tell what the new relationships engendered in the 2005 collaborative process will mean in the long run, particularly for DWR as an institution. The fact that water plan updates prior to 2005 had devolved from plans into informational

documents could reflect that DWR had been losing political capital as the state ran out of suitable locations for new construction projects, and a cash-strapped legislature gradually shied away from structural approaches to water management, particularly during the recent string of relatively wet years that began in 1993. On the surface, collaborative planning processes often require an agency to relinquish a certain amount of control to other stakeholders. However, by bringing policy players together with their own experts, DWR has been able to draw political capital from improved public support and good will. The 2005 planning process is pulling DWR into a new statewide role, where it will serve more as a facilitator and source of technical data and analysis, and less as a pure construction agency.

In summary, three of the greatest achievements of the 2005 process have been (1) bringing to light the great complexity of California's water-related challenges, and charting a course for grappling with these challenges over the next 10 to 15 years; (2) facilitating DWR's transition from a construction-oriented agency to one grounded in the broader perspective of integrated water resource management; and (3) improving lines of communication between DWR and the public, thereby laying the groundwork for future learning and adaptation. Metaphorically speaking, DWR and its water planning advisory committees are at the helm of a huge ship that, over the last five decades, has constructed one of the world's largest water storage and conveyance systems, which in turn has powered and irrigated the California economy—the world's sixth largest. A ship this size doesn't turn on a dime. The accomplishments of the 2005 Water Plan should be viewed in the context of this larger 50-year history.

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## Volume 4 – Reference Guide

(Articles listed alphabetically by subject)

- Limits to the Productivity of Water in Crop Production (by Andrew Keller and David Seckler)
- Model for Estimating Evaporation and Transpiration from Row Crops (by Francesca Ventura, Ben A. Faber, Khaled M. Bali, Richard L. Snyder, Donatella Spano, Pierpaolo Duce, and Kurt F. Schulbach) Originally published in Journal of Irrigation and Drainage Engineering, American Society of Civil Engineers. Nov/Dec 2001. Obtained from http://www.pubs.asce.org/
- The Promise of Regulated Deficit Irrigation in California's Orchards and Vineyards (by David Goldhamer and Elias Fereres, UC Davis, IAS-CSIC and University of Cordoba, Spain)
- SIMETAW (Simulation of Evapotranspiration of Applied Water) (by Richard Snyder, Morteza Orang, Shu Geng, Scott Matyac, and Sara Sarreshteh, UC Davis and DWR)

Data and Analytical Tools

- California 2030: An Efficient Future, Executive Summary, September 2005 (by Peter H. Gleick and Heather Cooley, Pacific Institute for Studies in Development, Environment, and Security, and David Groves, Pardee RAND Graduate School)
- Future Quantitative Analysis for California Water Planning (by Ken Kirby, Active Curiosity)
- Improving Analytical Procedures Used to Describe Future Water Conditions for the California Water Plan
- Quantified Scenarios of 2030 California Water Demand (by David Groves, Pardee RAND Graduate School, and Scott Matyac and Tom Hawkins, DWR)
- Recommended Next Steps for Improving Quantitative Information for the California Water Plan
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- Survey of Irrigation Methods in California in 2001 (by Morteza Orang, Richard Snyder, and Scott Matyac, DWR and UC Davis)

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- Applying the Public Trust Doctrine to River Protection (By Jan S. Stevens)
- Considering Water Use Efficiency for the Environmental Sector (by Jeff Deason, Jessica Fast, Lisa Schroeer, Brian Turner and Renske van Staveren, UC Berkeley)
- Recommendations Regarding Scenarios and Application of Environmental Water 'Demands' in the State Water Plan Update & Quantification of Unmet Environmental Objectives in State Water Plan 2003 Using Actual Flow Data for 1998, 2000, and 2001 (by Environmental Defense)

Environmental Justice

- Environmental Justice in California Government (by Governor's Office of Planning and Research)
- General Plan Guidelines, Chapter 2: Sustainable Development and Environmental Justice (by Governor's Office of Planning and Research)

Global Climate Change

- Climate Change and California Water Resources: A Survey and Summary of the Literature (by Michael Kiparsky and Peter H. Gleick, Pacific Institute for Studies in Development, Environment, and Security)
- Accounting for Climate Change (by Maurice Roos, DWR)

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Landscape Water Use
- Urban Landscape Evapotranspiration (by Richard L. Snyder, University of California, Atmospheric Science, Davis, California, and Simon Eching, DWR)
- Vegetative Assessment in an Urban Environment (by Alan Walters, Agricast)

Legislation
- The Brown Act: Open Meetings for Local Legislative Bodies (by CA Attorney General's Office)
- A Handy Guide to the Bagley-Keene Open Meeting Act 2004 (by CA Attorney General's Office)
- Recent Water Legislation (by DWR Legislative Affairs Office staff)
- Water Bonds
- Water Plan Legislation
- Work Plan for Meeting Legal Requirements for the California Water Plan

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- Joint Statement on the Monterey Amendments Litigation (by DWR, Central Coast Water Authority, State Water Contractors, Planning and Conservation League, Plumas County Flood Control and Water Conservation District, and the Citizens' Planning Association of Santa Barbara County)
- Summary of Significant Litigation 1998-2005 (by DWR, Office of Chief Counsel)

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- Future Scenarios Presented in Water Plan Update 2005
- Involving Stakeholders in Irrigation and Drainage District Decisions: Who, What, When, Where, Why, How (by Lisa Beutler, Center for Collaborative Policy, California State University, Sacramento)
- Planning For Extreme and Prolonged Drought Conditions

- Planning Framework for California Water Plan Update (by Lisa Beutler and David Sumi, Center for Collaborative Policy, California State University, Sacramento)
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Tribal History and Consultation

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